| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 1 | 393 |

# STATE OF KANSAS
# DEPARTMENT OF TRANSPORTATION

## ROE BOULEVARD IMPROVEMENTS FROM JOHNSON DRIVE TO JOHNSON COUNTY LINE

## 46 N-0661-01

## FEDERAL AID PROJECT

## JOHNSON COUNTY
## CITY OF ROELAND PARK

KDOT PROJ. NO. 46 N-0661-01
FEDERAL PROJ. NO. STP-N066(101)

Grading and Surfacing (Asphalt)
Milling
Sidewalk Improvements
Storm Sewer Improvements
Sodding
Lighting
Traffic Signalization
Signing and Pavement Marking

INDEX OF SHEETS


| | |
|---|---|
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| 12 - 31 | Plan & Profile Sheets |
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| 120 | Summary of Surfacing Quantities |
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STA. 173+68.20 END
PROJ. NO. 46 N-0661-01




STA. 100+97.58 BEGIN
PROJ. NO. 46 N-0661-01

N.T.S.

NOTE: ROE BOULEVARD TRAFFIC TO BE CARRIED THROUGH CONSTRUCTION. FOR CONSTRUCTION SEQUENCE, SEE SH. NO. 125-133

## DESIGN DESIGNATION

| | |
|---|---|
| AADT (2017) | 20,000 |
| DHV | 1100 |
| V | 35 M.P.H. |

COMMONLY USED ACRONYMS

| | |
|---|---|
| TEMPORARY CONSTRUCTION EASEMENT | TCE |
| PERMENANT SIDEWALK & UTILITY EASEMENT | PSUE |
| SIDEWALK | SW |

CONVENTIONAL SIGNS

| | | | |
|---|---|---|---|
| COUNTY LINE | | CENTER LINE OF PROJECT | 50 1 |
| CITY LIMITS | | TERRACE | |
| STATE OR NATIONAL LINE | | CULVERTS | |
| TOWNSHIP, SECTION or GRANT LINE | | DROP INLET & STORM SEWER | |
| PROPERTY LINE | | ACCESS CONTROL | |
| HIGHWAY FENCE | | POWER POLE | |
| EXISTING FENCE | | TELEPHONE POLE | |
| GUARDRAIL | | MARSH | |
| CONSTRUCTION LIMITS | | HEDGE | |
| RIGHT OF WAY LINE | | TREES | 172.18 |
| TRAVELED WAY | | PROFILE ELEVATION | |
| RAILROADS | | STREAM or CREEK | |

| | | |
|---|---|---|
| GROSS LENGTH OF PROJECT | 7,270.62 FT. (Inlcudes Equations) | |
| EXCEPTIONS | | |
| NET LENGTH OF PROJECT | 7,270.62 FT. | 1.377 MILES |
| NET LENGTH OF BRIDGES | 0 FT. | 0 MILES |
| NET LENGTH OF ROAD | 7,270.62 FT. | 1.377 MILES |


GBA
9801 Renner Boulevard
Lenexa, Kansas 66219
913.492.0400
www.gbateam.com


RECOM. FOR APPROVAL-DATE

LOCAL PUBLIC OFFICIAL

KANSAS DEPARTMENT OF TRANSPORTATION

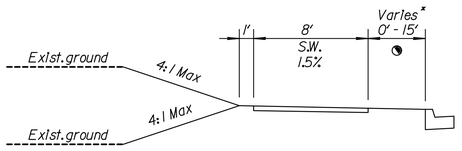
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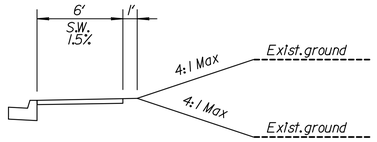
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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* See geometry sheets for width and taper information.

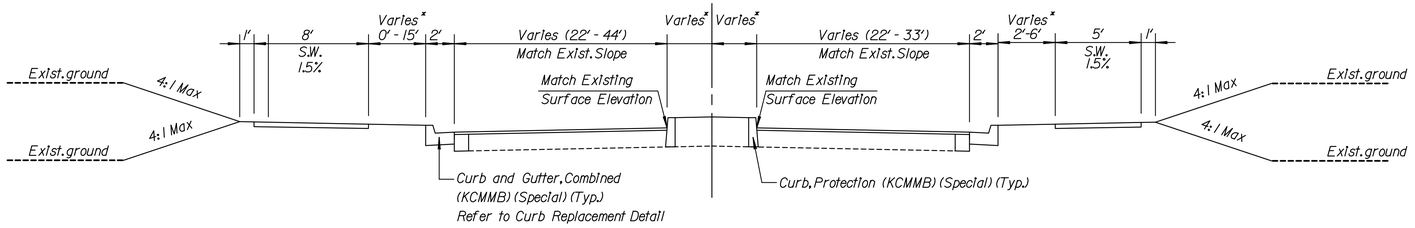
** Wall height varies. Refer to retaining wall profile sheets for details.



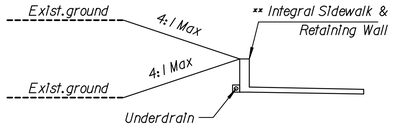

Sta. 150+70.00 - 151+20.00 ◔1.5%-12.0%
Sta. 151+20.00 - 151+90.37 ◔12.0%
Sta. 151+90.37 - 152+05.06 ◔12.0%-4.8%



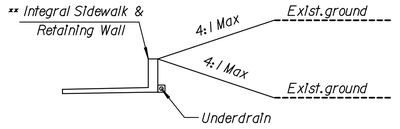

Sta. 112+08.19 -
Sta. 123+41.79



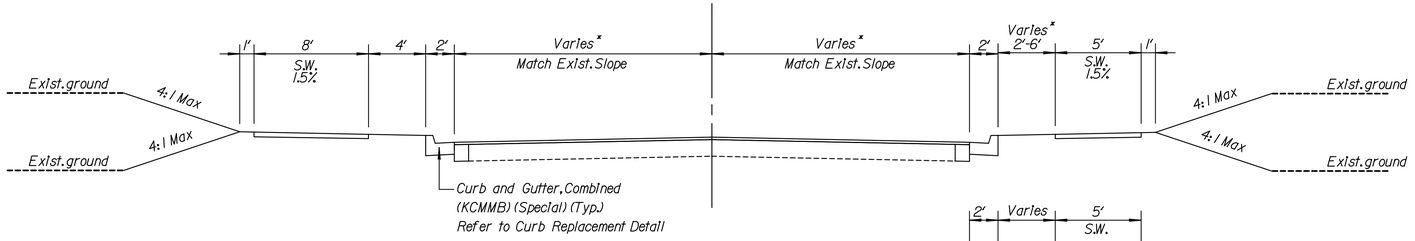

ROE BOULEVARD
Sta 107+27.30 - Sta 133+18.24
Sta 143+01.19 - Sta 158+43.36



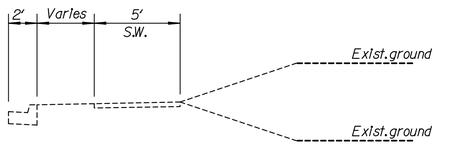

Wall 3 = Sta. 119+98.64 - Sta. 120+30.64
Wall 5 = Sta. 132+12.07 - Sta. 132+46.07
Wall 6 = Sta. 133+88.64 - Sta. 134+34.64



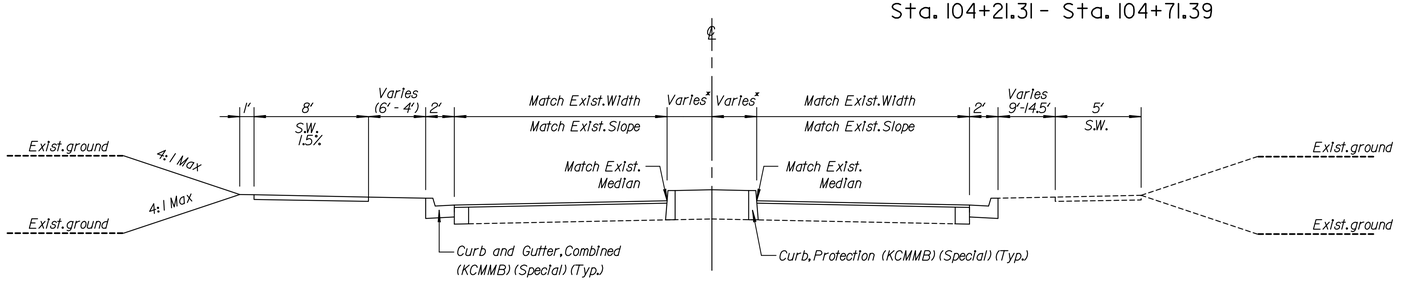

Wall 1 = Sta. 111+47.05 - Sta. 111+89.05
Wall 2 = Sta. 112+12.93 - Sta. 112+47.01
Wall 4 = Sta. 125+73.35 - Sta. 126+15.79




ROE BOULEVARD
Sta 104+21.31 - Sta 107+27.30



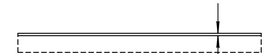

Sta. 104+21.31 - Sta. 104+71.39




ROE BOULEVARD
Sta 100+97.58 - Sta 104+21.31

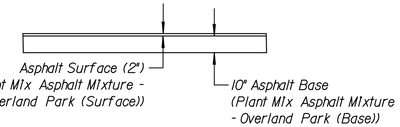
## MILL & OVERLAY PAVEMENT SECTION

Streets Included:
- Roe Blvd
- W 57th St
- W 56th St
- W 55th Ter
- W 54th Ter
- W 54th St
- W 53rd Ter
- W 52nd Ter
- Sycamore Dr
- W 50th Ter



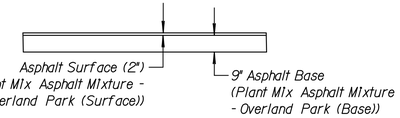

## MAJOR ARTERIAL FULL DEPTH ASPHALT PAVEMENT SECTION

Streets Included:
- Roe Blvd
- W 51st St
- Skyline Dr
- W 48th St



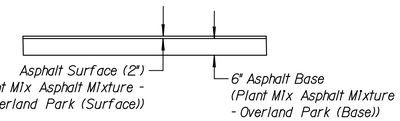

## MINOR ARTERIAL FULL DEPTH ASPHALT PAVEMENT SECTION

Streets Included:
- W 55th St
- Roe Ln

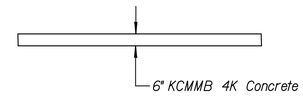



## RESIDENTIAL COLLECTOR/COMMERCIAL PARKING FULL DEPTH ASPHALT PAVEMENT SECTION

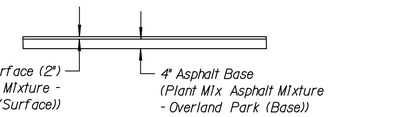
Streets Included:
- Rosewood Dr
- CVS Parking Lot
- Lowe's Parking Lot




## CONCRETE ENTRANCE PAVEMENT SECTION




## RESIDENTIAL ASPHALT DRIVEWAY PAVEMENT SECTION



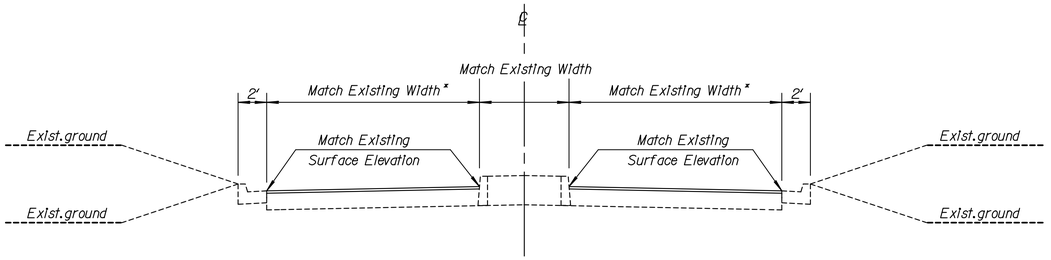

*KANSAS DEPARTMENT OF TRANSPORTATION*
TYPICAL SECTIONS
SHEET 1 OF 4

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

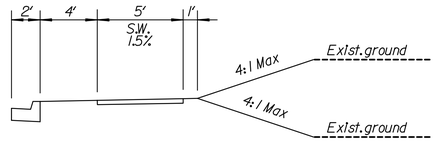
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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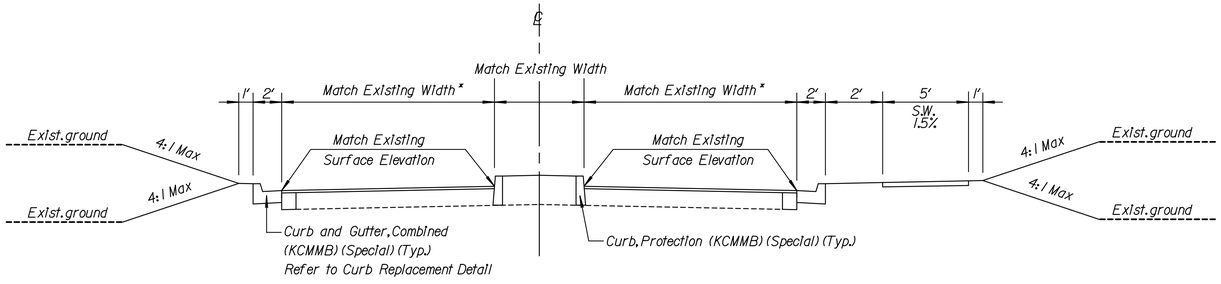
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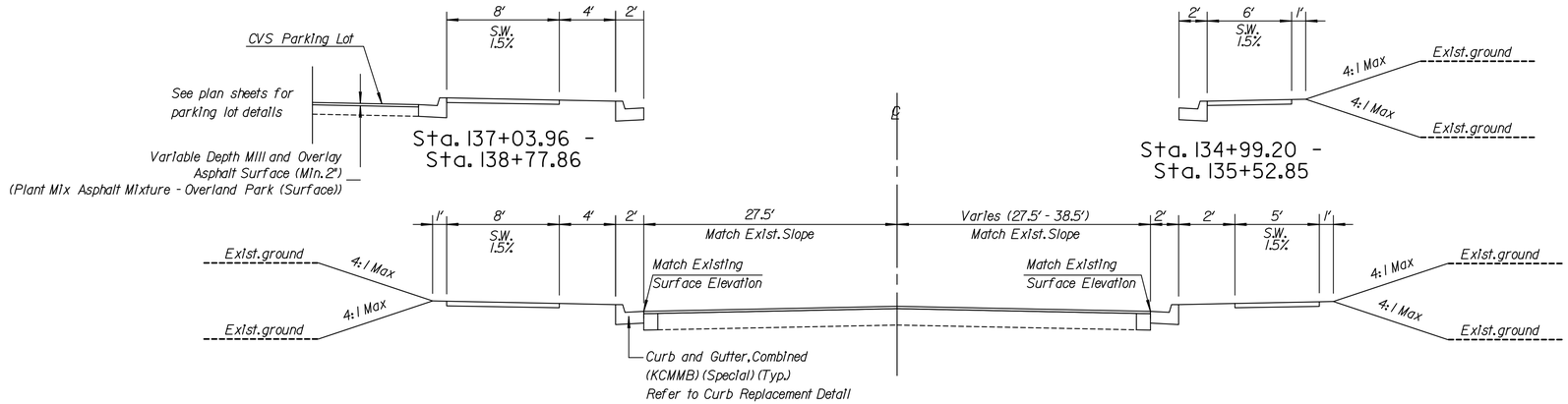

ROE BOULEVARD
Sta 159+50.53 - Sta 173+68.20




Sta 159+50.53 - Sta 161+25.98




ROE BOULEVARD
Sta 158+43.36 - Sta 159+50.53




ROE BOULEVARD
Sta 133+18.24 - Sta 143+01.19

*KANSAS DEPARTMENT OF TRANSPORTATION*

TYPICAL SECTIONS

SHEET 2 of 4

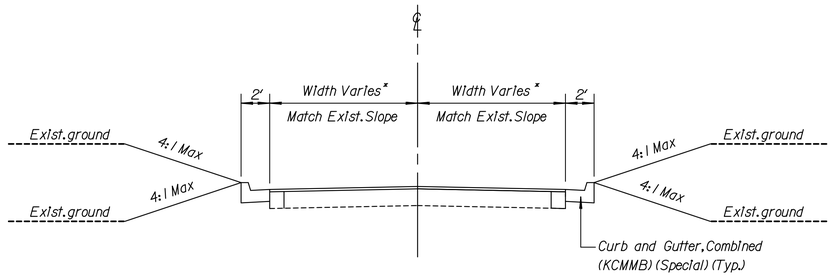
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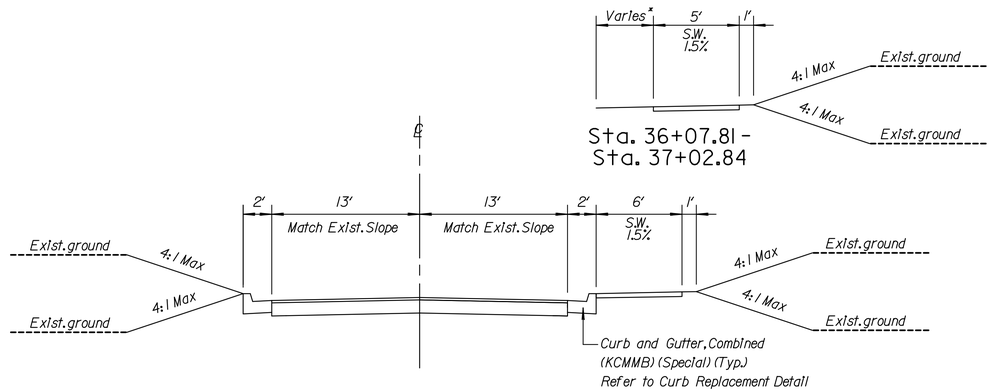
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| KANSAS | 46 N-0661-01 | 2019 | 4 | 393 |

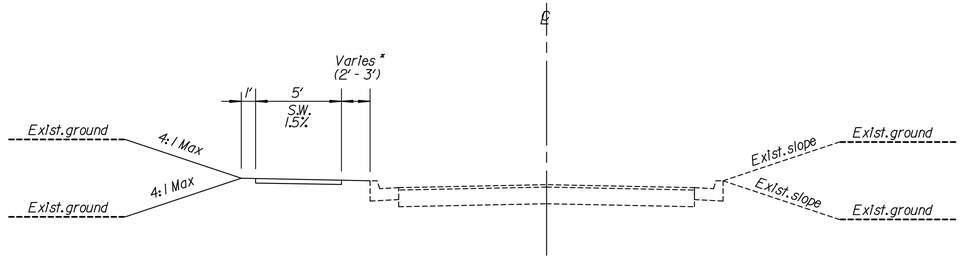
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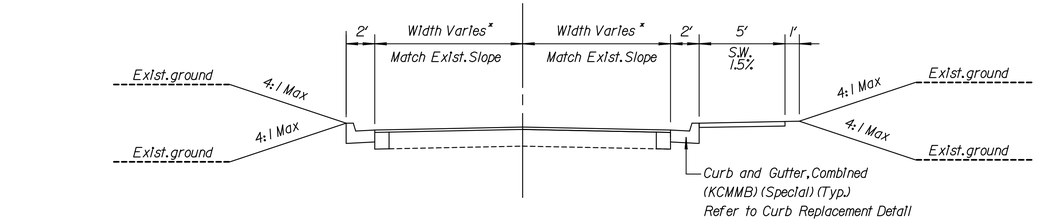

W 56th Street
W 55th Terrace
W 54th Terrace
W 52nd Terrace
Sycamore Drive



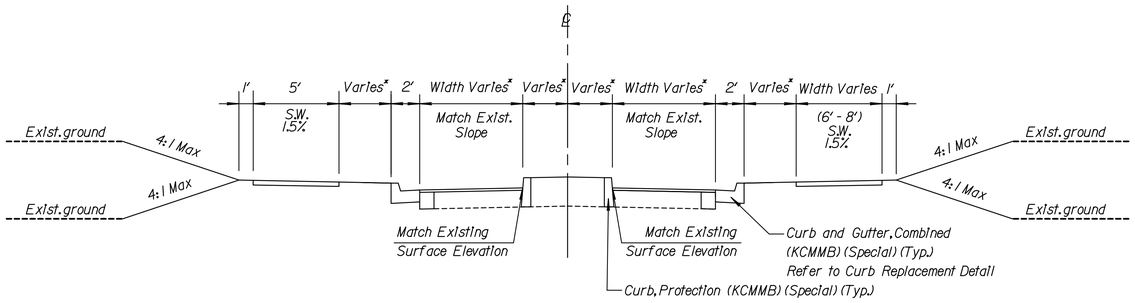

Rosewood Drive



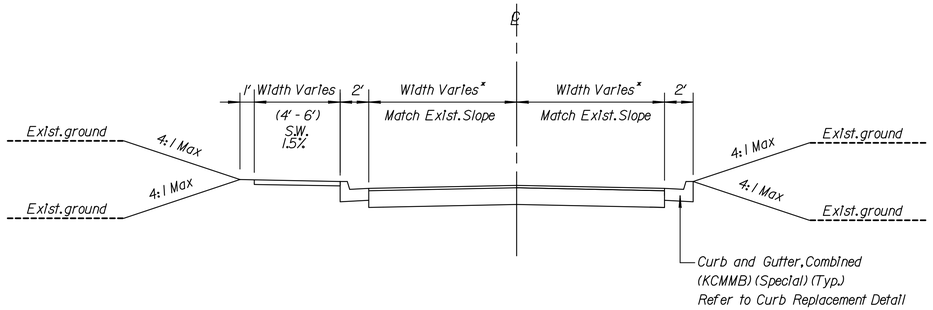

Linden Street




W 54th Street




W 57th Street




W 55th Street

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

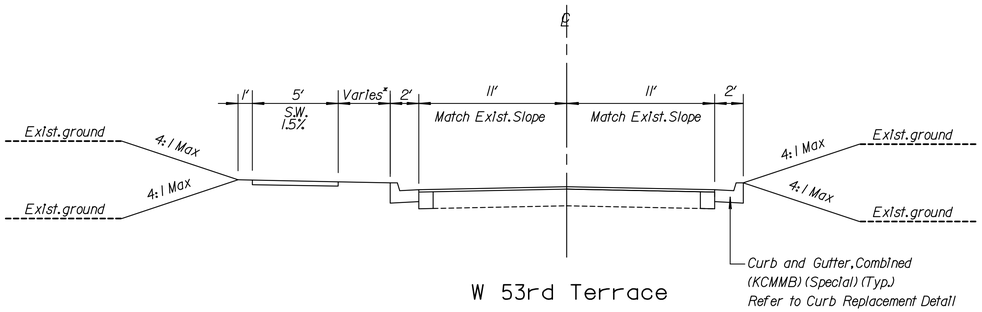
SHEET 3 of 4

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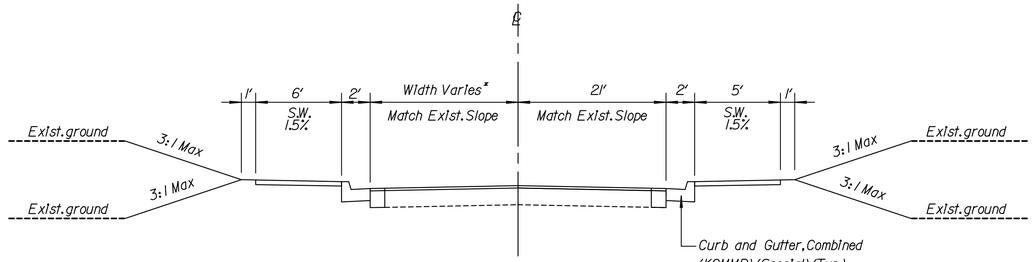
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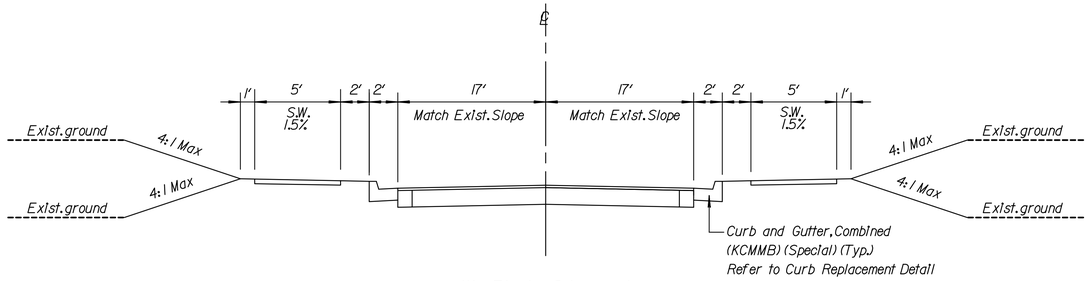
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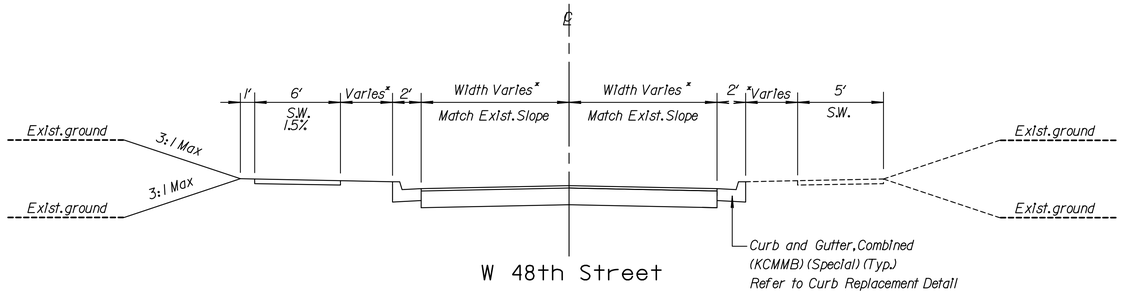

W 53rd Terrace



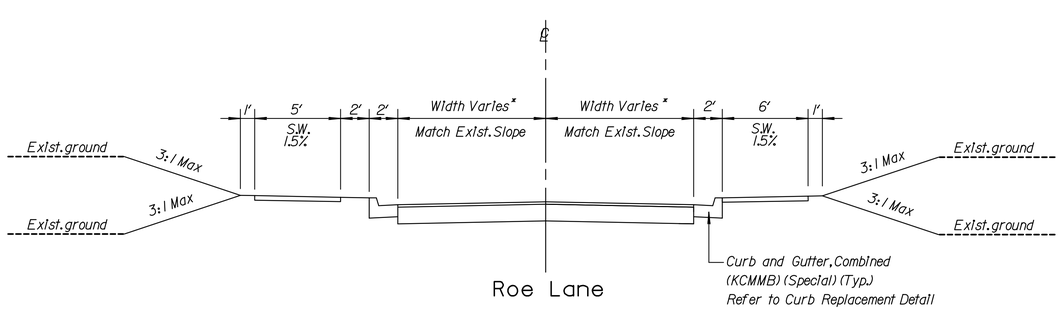

W 50th Terrace



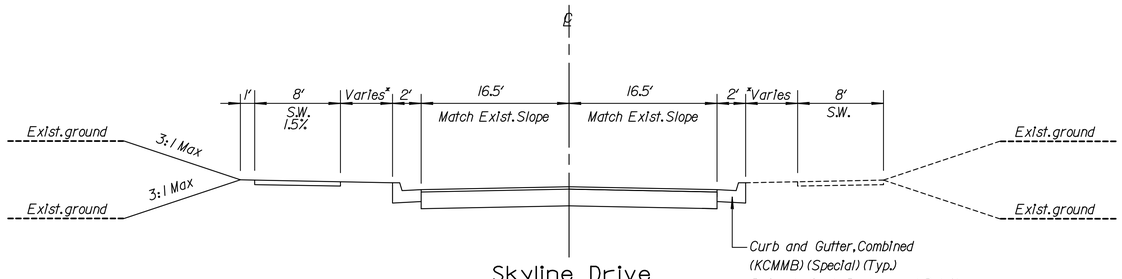

W 51st Street



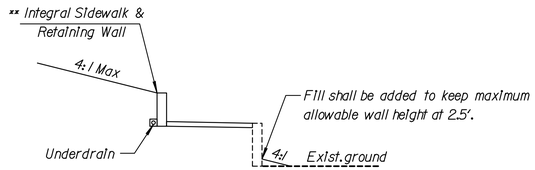

W 48th Street




Roe Lane




Skyline Drive




Wall 7 = Sta. 71+35.43 - Sta. 71+90.41

* See geometry sheets for width and taper information.

** Wall height varies. Refer to retaining wall profile sheets for details.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

SHEET 4 of 4

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
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Plotted : 25-APR-2019 12:53

Drawn By : lrosenbaum

File : 13668R0301.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
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CP #100 - Found chiseled plus cut in top West edge of 7' structure @ the SE quad at intersection of Roe Ave. & Johnson Drive
Ties:
1. W 36.67' back of curb East side of Roe.
2. NNW 49.89' chiseled plus cut top of South most corner conc. traffic signal control box base.
3. NE 56.80' Northwest corner of headwall RCB under Roe Ave.
Coordinates:
N: 269499.5157
E: 2267015.7940
EL: 930.4600

CP #101 - Set 1/2" bar and GBA cap @ West side of Roe. Ave @ 57th St.
Ties:
1. E 2.10' Back of curb West side of Roe Ave.
2. W 2.20' East edge concrete walk.
3. N 6.18' East edge conc. walk @ back of curb Northeast of corner island.
Coordinates:
N: 270241.3620
E: 2266879.3424
EL: 936.9650

CP #102 - Set 1/2" bar and GBA cap @ ℄ median Roe Ave. in line with South curbline West 55th Terr.
Ties:
1. E 6.70' East back of curb @ median Roe Ave.
2. W 6.15' West back of curb @ median Roe Ave.
3. NNW 11.53 Near face street sign post.
Coordinates:
N: 270995.4240
E: 2266893.4030
EL: 964.9500

CP #103 - Set 1/2" bar and GBA cap at Northeast quad of Roe Ave. and West 55th Street.
Ties:
1. @ North edge of conc. walk on North side of West 55th Street.
2. N 17.80' Southwest corner conc. block foundation @ House 5449 Roe Ave.
3. NE 25.50' Near face gas meter pipe @ ground House 5449 Roe Ave.
4. W 15.36' Southeast corner face of street light pole.
Coordinates:
N: 271332.9645
E: 2266959.5573
EL: 962.8250

CP #104 - Set 1/2" bar and GBA cap at East side median of Roe Ave. just South of West 54th Terr.
Ties:
1. E 2.78' East back of curb median Roe Ave.
2. W 4.96' West back of curb median Roe Ave.
3. S 31.50' North edge of brick paver stone in median.
4. N 46' ℄ West 54th Terr. to the East.
Coordinates:
N: 271602.7008
E: 2266873.5765
EL: 952.4350

CP #105 - Set 1/2" bar and GBA cap at Northeast quad of Roe Ave. & 54th St.
Ties:
1. SE 11.40' Top ℄ turn bolt fire hydrant.
2. S 6.45' North back of curb 54th St.
3. W 6.40' North back of curb 54th St. @ East edge conc. walk.
4. NW 7.83' Southeast corner level 3 utility pedestal.
Coordinates:
N: 272106.9349
E: 2266891.0361
EL: 950.9500

CP #106 - Found 1-1/2" Form Pin at Northeast quad of Roe Ave. & West 53rd Terr. and ± @ Southwest corner of property 5307 Roe. Ave.
Ties:
1. W 1.50' North face of conc. retaining wall.
2. NNW 20.65' Near face street sign post.
3. ESE 4.75' Near face street sign post.
Coordinates:
N: 272360.9906
E: 2266879.9099
EL: 962.7950

CP #107 - Set 1/2" bar and GBA cap at East side of Roe Ave. North of West 52nd Terr.
Ties:
1. W 4.80' East back of curb Roe. Ave.
2. N 11.22' Top Southeast corner of curb inlet.
3. E 5.81' West edge of conc. walk.
4. S 75.00' ℄ West 52nd Terr. to the East.
Coordinates:
N: 273034.3999
E: 2266845.8396
EL: 968.9800

CP #108 - Set 1/2" bar and GBA cap at West side of Roe Ave. North side of entrance to "CVS Pharmacy"
Ties:
1. SSW 10.55' Top back of curb @ corner parking.
2. W 4.10' Back of curb "CVS" parking lot.
3. N 14.95' Near face conc. base parking light pole.
4. E 7.00' West back of curb Roe Ave.
5. S 6.00' ℄ Sycamore drive to the East.
Coordinates:
N: 273498.0064
E: 2266743.9320
EL: 979.1450

CP #109 - Set 1/2" bar and GBA cap at West side of Roe Ave. @ North side entrance to Wal-Mart
Ties:
1. E 5.00' West back of curb Roe Ave.
2. SW 14.32' Northeast corner base traffic signal.
3. N 17.50' Near face conc. base parking light pole.
Coordinates:
N: 273893.4168
E: 2266722.0418
EL: 983.6550

CP #110 - Set 1/2" bar and GBA cap Northeast quad intersection of Roe Ave. & 50th Terr.
Ties:
1. S 4.50' North edge of conc. walk.
2. E 12.40' Corner conc. walk. E/W - N/S
3. NW 15.25' Southeast corner stone monument.
Coordinates:
N: 274286.3210
E: 2266875.3255
EL: 978.0100

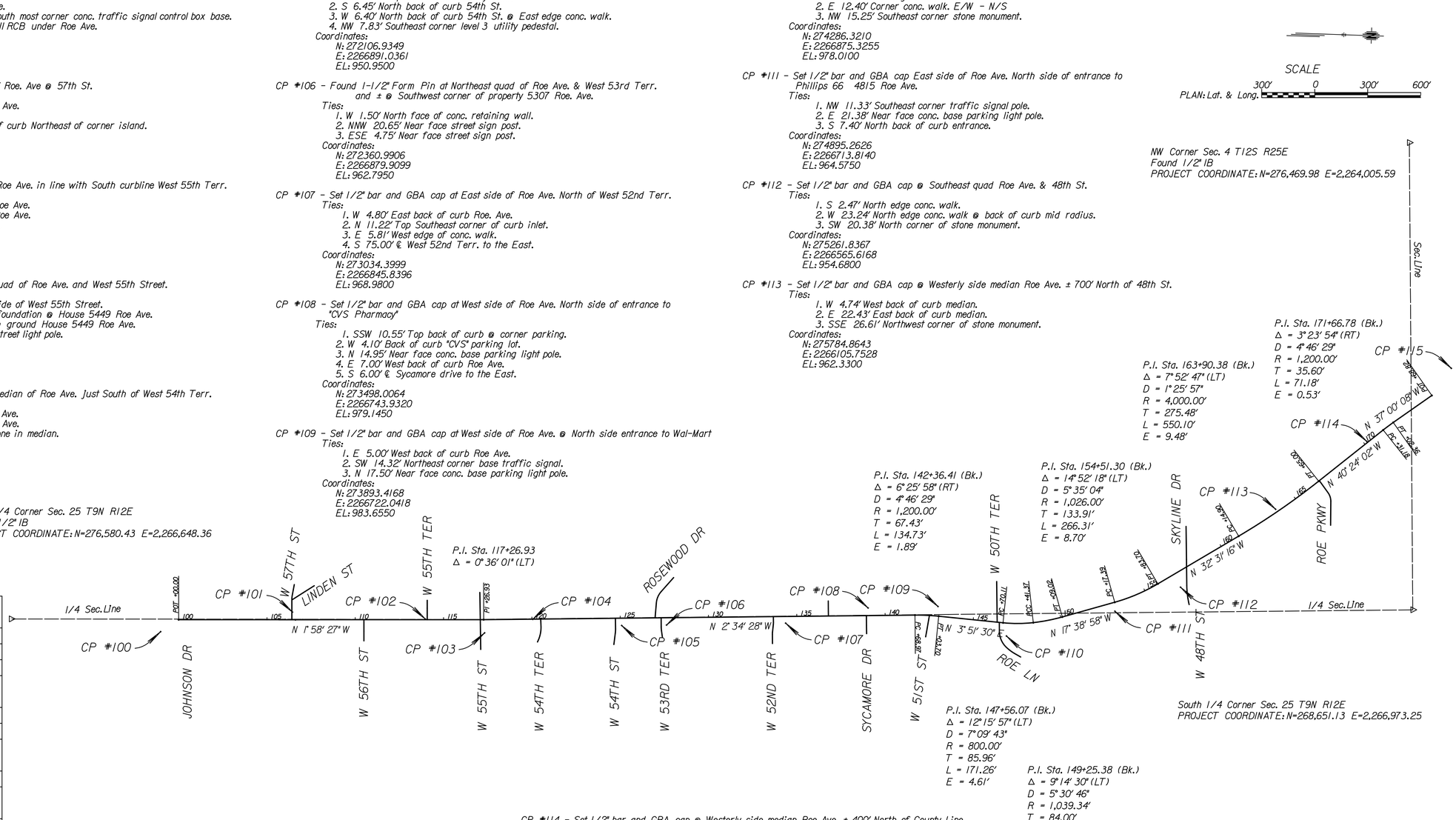
CP #111 - Set 1/2" bar and GBA cap East side of Roe Ave. North side of entrance to Phillips 66 4815 Roe Ave.
Ties:
1. NW 11.33' Southeast corner traffic signal pole.
2. E 21.38' Near face conc. base parking light pole.
3. S 7.40' North back of curb entrance.
Coordinates:
N: 274895.2626
E: 2266713.8140
EL: 964.5750

CP #112 - Set 1/2" bar and GBA cap @ Southeast quad Roe Ave. & 48th St.
Ties:
1. S 2.47' North edge conc. walk.
2. W 23.24' North edge conc. walk @ back of curb mid radius.
3. SW 20.38' North corner of stone monument.
Coordinates:
N: 275261.8367
E: 2266565.6168
EL: 954.6800

CP #113 - Set 1/2" bar and GBA cap @ Westerly side median Roe Ave. ± 700' North of 48th St.
Ties:
1. W 4.74' West back of curb median.
2. E 22.43' East back of curb median.
3. SSE 26.61' Northwest corner of stone monument.
Coordinates:
N: 275784.8643
E: 2266105.7528
EL: 962.3300

SCALE
300' 0 300' 600'
PLAN: Lat. & Long.

NW Corner Sec. 4 T12S R25E
Found 1/2" IB
PROJECT COORDINATE: N=276,469.98 E=2,264,005.59




| Alignment Point | Northing | Easting |
|---|---|---|
| ℄ P.O.T. Sta. 100+00.00 | 269,599.08 | 2,266,944.35 |
| ℄ P.I. Sta. 117+26.93 | 271,324.99 | 2,266,884.86 |
| ℄ P.C. Sta. 141+68.97 | 273,764.56 | 2,266,775.17 |
| ℄ P.I. Sta. 142+36.41 (Bk.) = P.I. Sta. 142+36.27 (Ah.) | 273,831.93 | 2,266,772.14 |
| ℄ P.T. Sta. 143+03.70 | 273,899.21 | 2,266,776.68 |
| ℄ P.C. Sta. 146+70.11 | 274,264.79 | 2,266,801.34 |
| ℄ P.I. Sta. 147+56.07 (Bk.) = P.I. Sta. 147+55.41 (Ah.) | 274,350.55 | 2,266,807.12 |
| ℄ P.C.C. Sta. 148+41.37 | 274,435.59 | 2,266,794.55 |
| ℄ P.I. Sta. 149+25.38 (Bk.) = P.I. Sta. 149+25.02 (Ah.) | 274,518.69 | 2,266,782.27 |
| ℄ P.T. Sta. 150+09.02 | 274,598.74 | 2,266,756.80 |
| ℄ P.C. Sta. 153+17.39 | 274,892.60 | 2,266,663.30 |
| ℄ P.I. Sta. 154+51.30 (Bk.) = P.I. Sta. 154+49.79 (Ah.) = | 275,020.21 | 2,266,622.70 |
| ℄ PT. Sta. 155+83.70 | 275,133.11 | 2,266,550.71 |
| ℄ P.C. Sta. 161+14.90 | 275,581.02 | 2,266,265.14 |
| ℄ P.I. Sta. 163+90.38 (Bk.) = P.I. Sta. 163+89.52 (Ah.) | 275,813.30 | 2,266,117.04 |
| ℄ P.T. Sta. 166+65.00 | 276,023.09 | 2,265,938.49 |
| ℄ P.C. Sta. 171+31.18 | 276,378.11 | 2,265,636.34 |
| ℄ P.I. Sta. 171+66.78 (Bk.) = P.I. Sta. 171+66.76 (Ah.) | 276,405.22 | 2,265,613.27 |
| ℄ P.T. Sta. 172+02.36 | 276,433.64 | 2,265,591.84 |
| ℄ P.O.T. Sta. 174+68.82 | 276,646.44 | 2,265,431.47 |

CP #114 - Set 1/2" bar and GBA cap @ Westerly side median Roe Ave. ± 400' North of County Line..
Ties:
1. W 4.15' West back of curb median.
2. E 15.46' East back of curb median.
3. N 11.78' Southwest corner steel & stone monument.
4. S 130.00' ℄ turn around through median.
Coordinates:
N: 276287.8064
E: 2265704.2979
EL: 947.3400

CP #115 - Set 1/2" bar and GBA cap @ West side Roe Ave. North side field entr. ± 250' North of County Line..
Ties:
1. E 21.31' West edge conc. shoulder Roe Ave.
2. N 24.64' Most South corner steel & conc. pad for art sculpture.
3. W 24.60' Northeast corner curb inlet.
4. S 12.29' North edge gravel field entrance.
5. SW 19.90' ℄ MH.
Coordinates:
N: 276751.7301
E: 2265274.0201
EL: 918.2400

Project Survey Control

Horizontal: Modified Kansas North State Plane U.S. Feet (NAD83)
CAF=0.9999181
Vertical: US Feet (NAVD88)

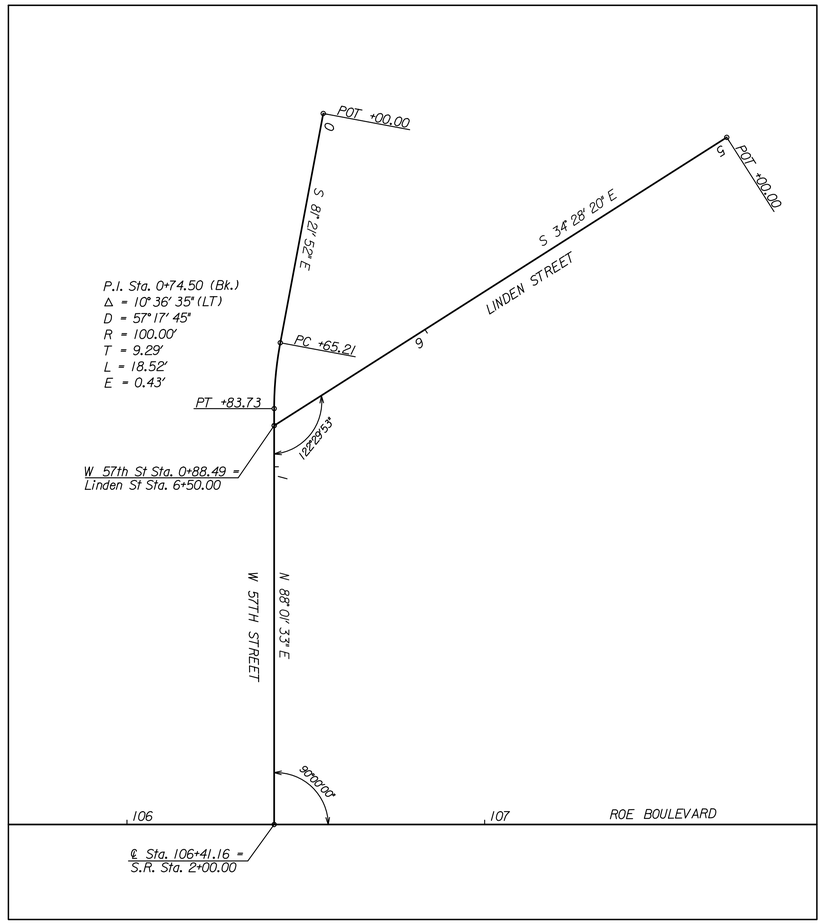
KANSAS DEPARTMENT OF TRANSPORTATION
ALIGNMENT DATA &
REFERENCE POINT SHEET
1 OF 5

DATE | BY
REFERENCES NOTED
REFERENCES CHECKED

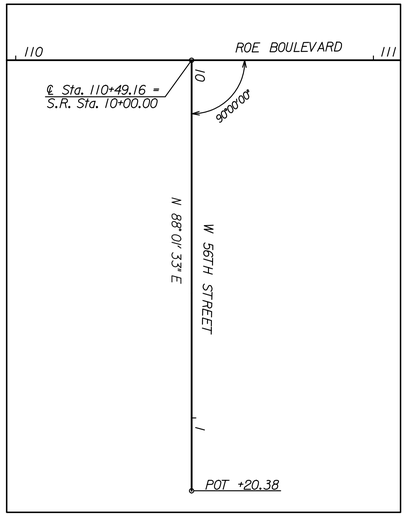
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Drawn By : lrosenbaum
File : 13668R1201.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 7 | 393 |

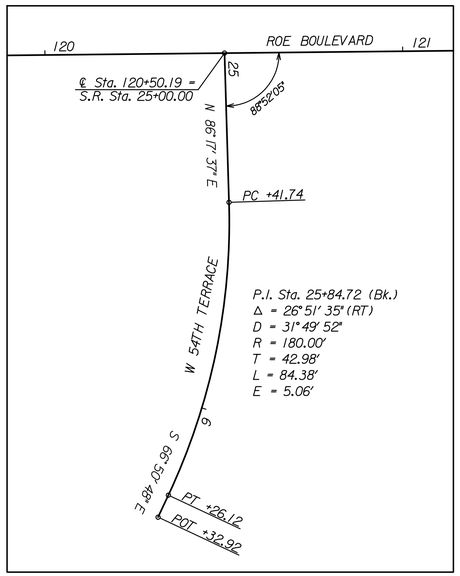
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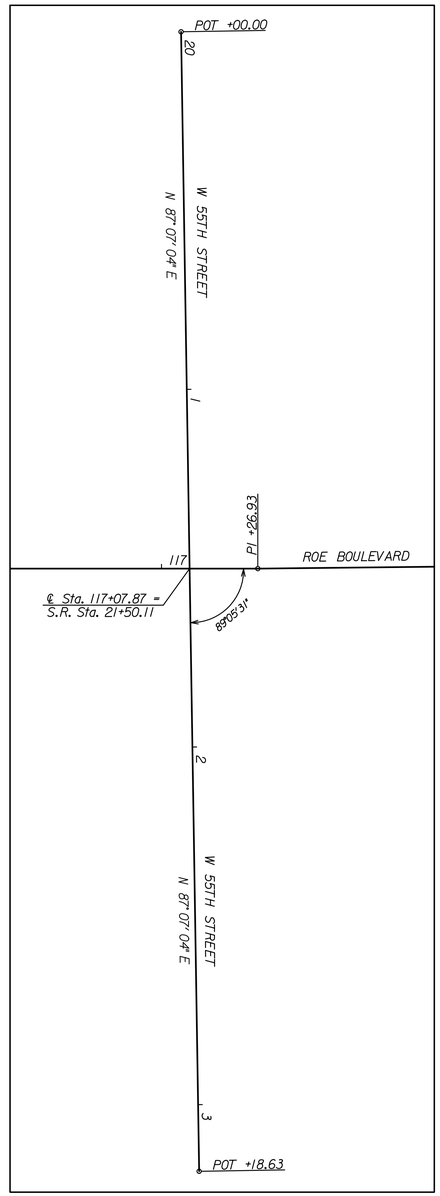

W 57TH ST & LINDEN ST



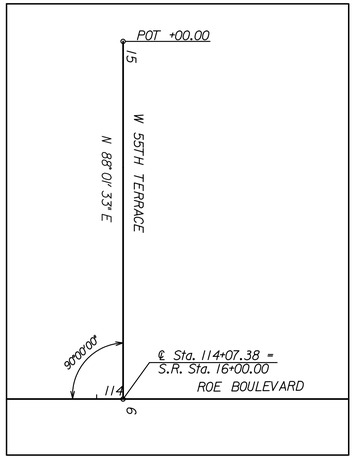

W 56TH ST




W 54TH TER




W 55TH ST




W 55TH TER

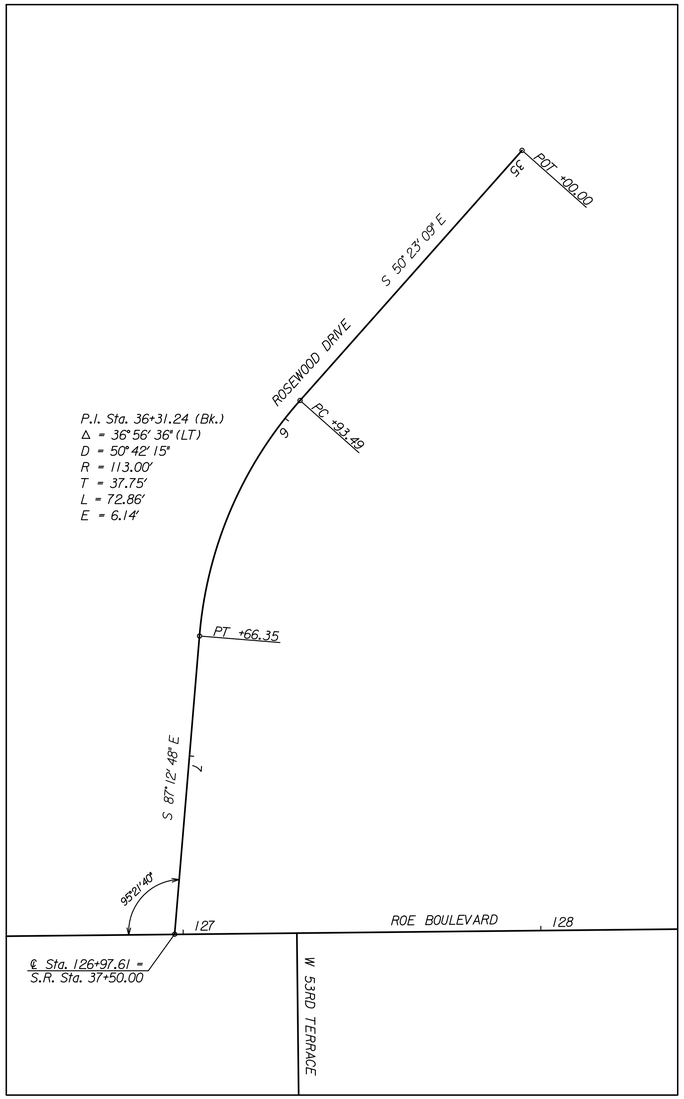
| Alignment Point | Northing | Easting |
|---|---|---|
| W 57TH STREET | | |
| ℄ P.O.T. Sta. 0+00.00 | 270,246.72 | 2,266,723.13 |
| ℄ P.C. Sta. 0+65.21 | 270,236.93 | 2,266,787.61 |
| ℄ P.I. Sta. 0+74.50 (Bk.) = P.I. Sta. 0+74.44 (Ah.) | 270,235.54 | 2,266,796.79 |
| ℄ P.T. Sta. 0+83.73 | 270,235.86 | 2,266,806.07 |
| ℄ P.O.T. Sta. 2+00.00 | 270,239.86 | 2,266,922.26 |
| LINDEN STREET | | |
| ℄ P.O.T. Sta. 5+00.00 | 270,359.68 | 2,266,725.92 |
| ℄ P.O.T. Sta. 6+50.00 | 270,236.02 | 2,266,810.82 |
| W 56TH STREET | | |
| ℄ P.O.T. Sta. 10+00.00 | 270,647.62 | 2,266,908.21 |
| ℄ P.O.T. Sta. 11+20.38 | 270,651.76 | 2,267,028.51 |
| W 55TH TERRACE | | |
| ℄ P.O.T. Sta. 15+00.00 | 271,002.77 | 2,266,795.91 |
| ℄ P.O.T. Sta. 16+00.00 | 271,005.62 | 2,266,895.97 |
| W 55TH STREET | | |
| ℄ P.O.T. Sta. 20+00.00 | 271,298.38 | 2,266,735.60 |
| ℄ P.O.T. Sta. 23+18.63 | 271,314.40 | 2,267,053.83 |
| W 54TH TERRACE | | |
| ℄ P.O.T. Sta. 25+00.00 | 271,647.92 | 2,266,870.34 |
| ℄ P.C. Sta. 25+41.74 | 271,650.61 | 2,266,911.99 |
| ℄ P.I. Sta. 25+84.72 (Bk.) = P.I. Sta. 25+83.14 (Ah.) | 271,653.39 | 2,266,954.89 |
| ℄ P.T. Sta. 26+26.12 | 271,636.49 | 2,266,994.41 |
| ℄ P.O.T. Sta. 26+32.92 | 271,633.82 | 2,267,000.66 |

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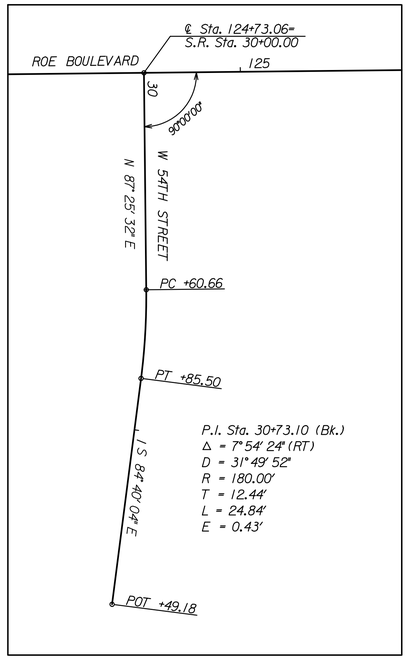
KANSAS DEPARTMENT OF TRANSPORTATION
ALIGNMENT DATA &
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2 OF 5

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Drawn By : lrosenbaum
File : 13668R1202.dgn

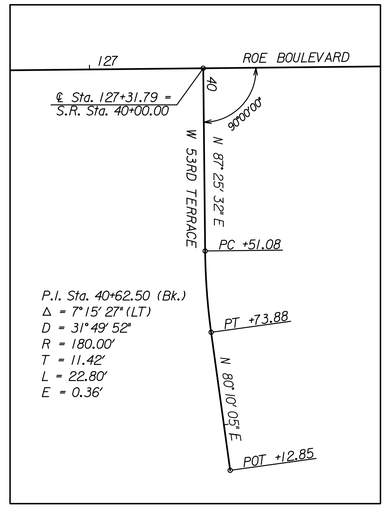
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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| KANSAS | 46 N-0661-01 | 2019 | 8 | 393 |



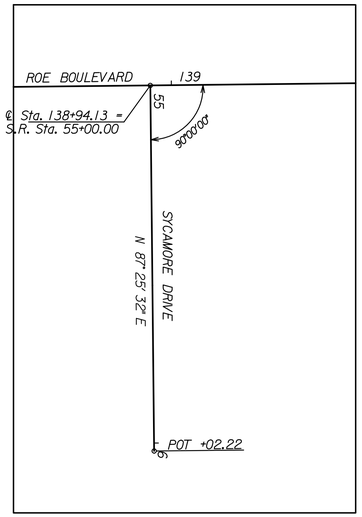

ROSEWOOD DRIVE



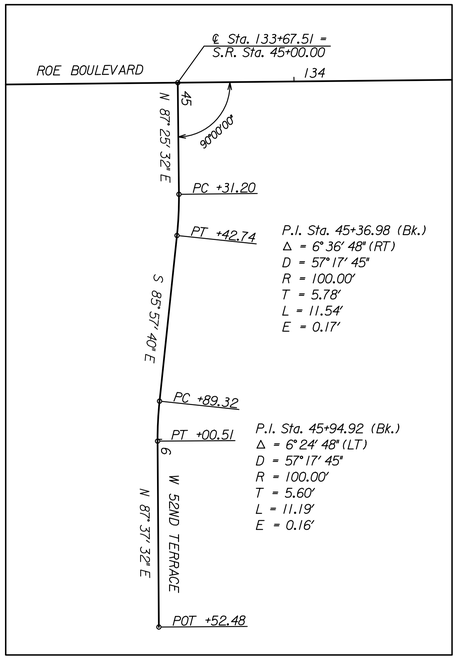

W 54TH ST




W 53RD TER




SYCAMORE DRIVE




W 52ND TER

| Alignment Point | Northing | Easting |
|---|---|---|
| W 54TH STREET | | |
| ℄ P.O.T. Sta. 30+00.00 | 272,070.36 | 2,266,851.35 |
| ℄ P.C. Sta. 30+60.66 | 272,073.09 | 2,266,911.95 |
| ℄ P.I. Sta. 30+73.10 (Bk.) = P.I. Sta. 30+73.06 (Ah.) | 272,073.65 | 2,266,924.37 |
| ℄ P.T. Sta. 30+85.50 | 272,072.49 | 2,266,936.76 |
| ℄ P.O.T. Sta. 31+49.18 | 272,066.57 | 2,267,000.17 |
| ROSEWOOD DRIVE | | |
| ℄ P.O.T. Sta. 35+00.00 | 272,384.21 | 2,266,618.86 |
| ℄ P.C. Sta. 35+93.49 | 272,324.58 | 2,266,690.85 |
| ℄ P.I. Sta. 36+31.24 (Bk.) = P.I. Sta. 36+28.60 (Ah.) | 272,300.51 | 2,266,719.93 |
| ℄ P.T. Sta. 36+66.35 | 272,298.75 | 2,266,757.94 |
| ℄ P.O.T. Sta. 37+50.00 | 272,294.68 | 2,266,841.19 |
| W 53RD TERRACE | | |
| ℄ P.O.T. Sta. 40+00.00 | 272,328.83 | 2,266,839.73 |
| ℄ P.C. Sta. 40+51.08 | 272,331.13 | 2,266,890.76 |
| ℄ P.I. Sta. 40+62.50 (Bk.) = P.I. Sta. 40+62.46 (Ah.) | 272,331.64 | 2,266,902.16 |
| ℄ P.T. Sta. 40+73.88 | 272,333.59 | 2,266,913.41 |
| ℄ P.O.T. Sta. 41+12.85 | 272,340.24 | 2,266,951.80 |
| W 52ND TERRACE | | |
| ℄ P.O.T. Sta. 45+00.00 | 272,963.90 | 2,266,811.17 |
| ℄ P.C. Sta. 45+31.20 | 272,965.31 | 2,266,842.34 |
| ℄ P.I. Sta. 45+36.98 (Bk.) = P.I. Sta. 45+36.96 (Ah.) | 272,965.56 | 2,266,848.11 |
| ℄ P.T. Sta. 45+42.74 | 272,965.16 | 2,266,853.88 |
| ℄ P.C. Sta. 45+89.32 | 272,961.88 | 2,266,900.34 |
| ℄ P.I. Sta. 45+94.92 (Bk.) = P.I. Sta. 45+94.91 (Ah.) | 272,961.48 | 2,266,905.92 |
| ℄ P.T. Sta. 46+00.51 | 272,961.71 | 2,266,911.52 |
| ℄ P.O.T. Sta. 46+52.48 | 272,963.87 | 2,266,963.45 |
| SYCAMORE DRIVE | | |
| ℄ P.O.T. Sta. 55+00.00 | 273,489.99 | 2,266,787.52 |
| ℄ P.O.T. Sta. 56+02.22 | 273,494.58 | 2,266,889.64 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:53

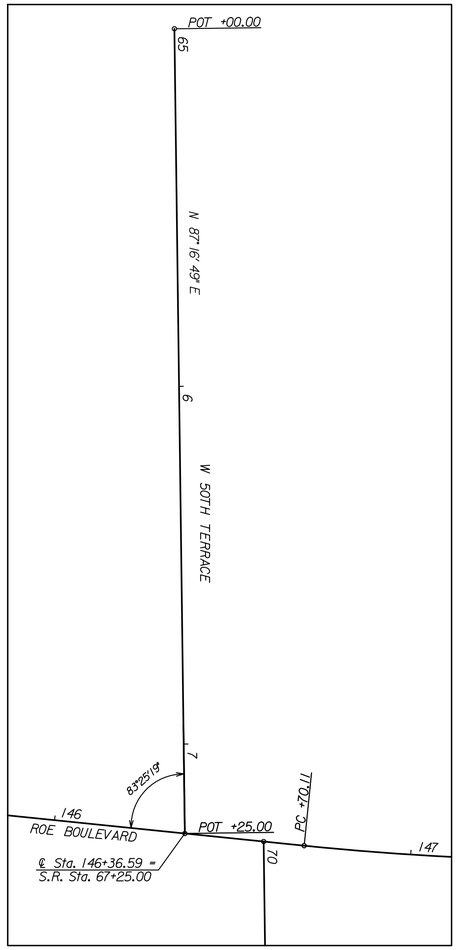
Drawn By : lrosenbaum
File : 13668R1202.dgn

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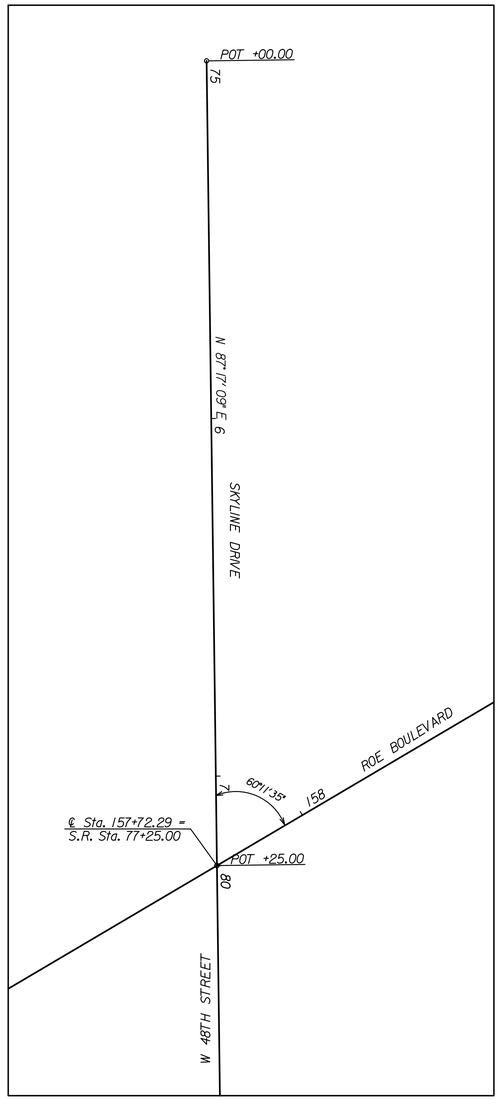
KANSAS DEPARTMENT OF TRANSPORTATION
ALIGNMENT DATA &
REFERENCE POINT SHEET
3 OF 5

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 9 | 393 |

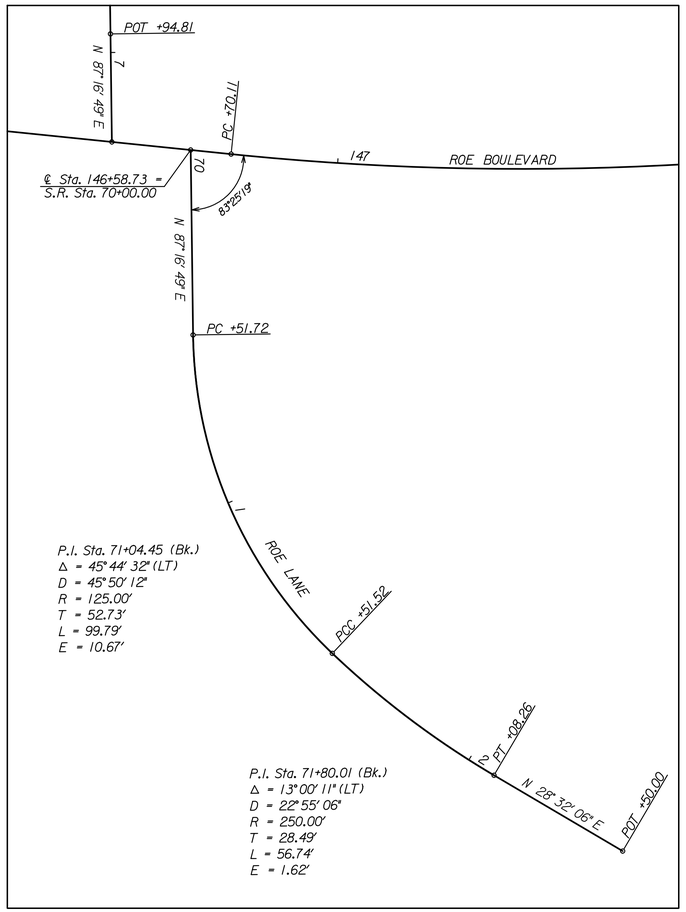
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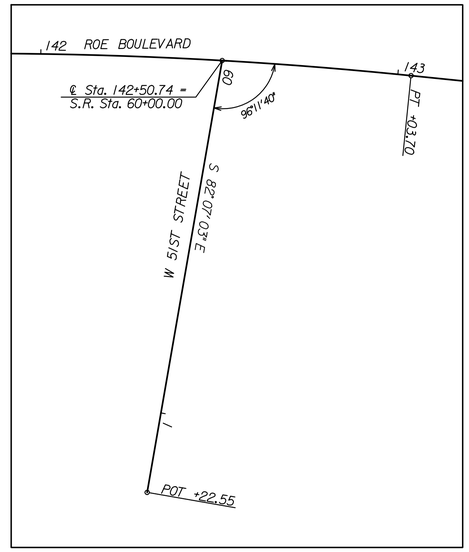

W 50TH TERRACE




SKYLINE DRIVE




ROE LANE




W 51ST STREET

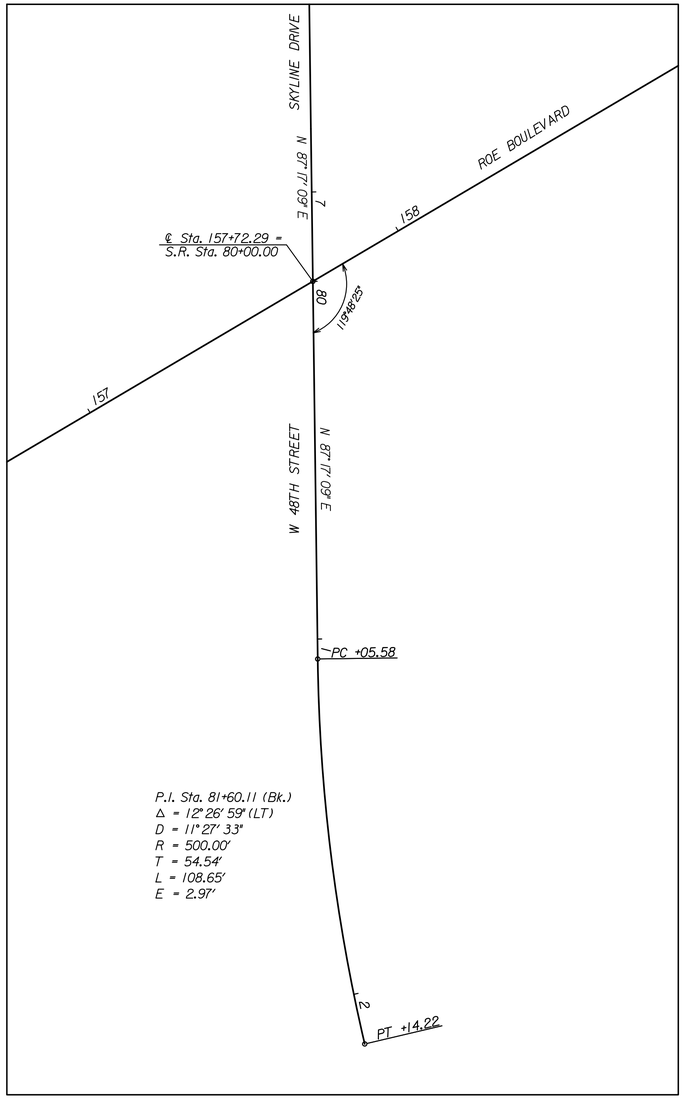
| Alignment Point | Northing | Easting |
|---|---|---|
| W 51ST STREET | | |
| ℄ P.O.T. Sta. 60+00.00 | 273,846.31 | 2,266,774.28 |
| ℄ P.O.T. Sta. 61+22.55 | 273,829.50 | 2,266,895.67 |
| W 50TH TERRACE | | |
| ℄ P.O.T. Sta. 65+00.00 | 274,220.67 | 2,266,574.33 |
| ℄ P.O.T. Sta. 67+25.00 | 274,231.34 | 2,266,799.08 |
| ROE LANE | | |
| ℄ P.O.T. Sta. 70+00.00 | 274,243.39 | 2,266,799.89 |
| ℄ P.C. Sta. 70+51.72 | 274,245.85 | 2,266,851.56 |
| ℄ P.I. Sta. 71+04.45 (Bk.) = P.I. Sta. 70+98.79 (Ah.) | 274,248.35 | 2,266,904.23 |
| ℄ P.C.C. Sta. 71+51.52 | 274,287.82 | 2,266,939.19 |
| ℄ P.I. 71+80.01 (Bk.) = P.I. Sta. 71+79.77 (Ah.) | 274,309.14 | 2,266,958.09 |
| ℄ P.T. Sta. 72+08.26 | 274,334.17 | 2,266,931.70 |
| ℄ P.O.T. Sta. 72+50.00 | 274,370.85 | 2,266,991.64 |
| SKYLINE DRIVE | | |
| ℄ P.O.T. Sta. 75+00.00 | 275,281.48 | 2,266,224.58 |
| ℄ P.O.T. Sta. 77+25.00 | 275,292.13 | 2,266,449.33 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

KANSAS DEPARTMENT OF TRANSPORTATION
ALIGNMENT DATA &
REFERENCE POINT SHEET
4 OF 5

Plotted : 25-APR-2019 12:53
Drawn By : Irosenbaum
File : 13668R1202.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 10 | 393 |




W48TH STREET

| Alignment Point | Northing | Easting |
|---|---|---|
| W 48TH STREET | | |
| ℄ P.O.T. Sta. 80+00.00 | 275,292.13 | 2,266,609.26 |
| ℄ P.C. Sta. 81+05.58 | 275,297.13 | 2,266,554.79 |
| ℄ P.I. Sta. 81+60.11 (Bk.) = P.I. Sta. 81+59.68 (Ah.) | 275,299.71 | 2,266,609.26 |
| ℄ P.T. Sta. 82+14.22 | 275,313.98 | 2,266,661.90 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

KANSAS DEPARTMENT OF TRANSPORTATION
ALIGNMENT DATA &
REFERENCE POINT SHEET
5 OF 5

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

Plotted :25-APR-2019 12:53
Drawn By : lrosenbaum
File : 13668R1202.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 11 | 393 |

## GENERAL

PROPOSED FULL DEPTH PAVEMENT TO REPLACE CONCRETE CROSSWALKS SHALL USE THE MAJOR ARTERIAL FULL DEPTH ASPHALT PAVEMENT SECTION.

ADDITIONAL CONCRETE (KCMMB4K) NEEDED TO COMPLETE MEDIAN NOSE SHALL BE SUBSIDIARY TO THE BID ITEM CURB, PROTECTION (KCMMB4K) (SPECIAL). SEE SHEET 43 FOR MEDIAN NOSE DETAILS.

PROPOSED PAVEMENT SHALL BE FLUSH TO ALL SANITARY MANHOLES INSIDE PROPOSED PAVEMENT LIMITS.

SEE CROSS SECTIONS FOR PROPOSED DRIVEWAY GRADES.

PROPOSED INLET THROATS SHALL BE SUBSIDIARY TO CURB AND GUTTER, COMBINED (KCMMB4K) (SPECIAL).

SIDEWALK ADJACENT TO BACK OF CURB SHALL BE DOWELED TO THE CURB AS SHOWN ON SHEET 36. THERE WILL BE NO DIRECT PAY FOR THIS WORK. ANY ADDITIONAL COSTS ARE CONSIDERED SUBSIDIARY TO SIDEWALK BID ITEM.

SIDEWALK ADJACENT TO DRAINAGE STRUCTURES SHALL BE CONSTRUCTED AS SHOWN ON SHEET 41.

ALL EXISTING CONCRETE PAVEMENT, CURB & GUTTER, DRIVEWAYS, SIDEWALKS, OR BITUMINOUS SURFACING TO BE REMOVED SHALL BE SAWCUT TO NEAT LINES AS SHOWN ON THE PLANS OR TO THE NEAREST JOINT AS DIRECTED BY THE ENGINEER. ALL SAWCUTS SHALL BE FULL DEPTH. THIS WORK SHALL BE SUBSIDIARY TO OTHER BID ITEMS.

ALL MAIL SERVICE SHALL BE COORDINATED WITH THE USPS AND MAINTAINED, THROUGH TEMPORARY LOCATION IF NECESSARY, DURING CONSTRUCTION. LABOR AND MATERIALS TO INSTALL TEMPORARY MAILBOXES SHALL BE SUBSIDIARY TO OTHER BID ITEMS.

## UTILITIES

ALL EXISTING UTILITIES INDICATED ON THE DRAWINGS ARE ACCORDING TO THE BEST INFORMATION AVAILABLE TO THE ENGINEER; HOWEVER, ALL UTILITIES ACTUALLY EXISTING MAY NOT BE SHOWN. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITIES TO HAVE THEIR LINES LOCATED IN THE FIELD.

FOR ALL PULLBOXES, VALVES, METERS, MANHOLES, INLETS, AND JUNCTION BOXES THAT NEED TO BE ADJUSTED TO GRADE, CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO UTILITY OWNERS.

ANY ADJUSTMENTS TO GRADE OF LEVEL 3 PULLBOXES SHALL BE PERFORMED BY LEVEL 3. CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO JERRY WOODALL WHEN LEVEL 3 PULLBOXES NEED TO BE ADJUSTED TO GRADE.

ANY ADJUSTMENTS TO GRADE OF WATER ONE VALVES/METERS SHALL BE PERFORMED BY WATER ONE. CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO DANIEL SULLIVAN WHEN WATER ONE VALVES/METERS NEED TO BE ADJUSTED TO GRADE.

## STORM SEWER

ALL LABOR AND MATERIALS NECESSARY TO CONSTRUCT PIPE COLLARS SHALL BE SUBSIDIARY TO STORM SEWER BID ITEMS.

## LANDSCAPING

CONTRACTOR MAY BE REQUIRED TO REMOVE TREES, BUSHES, SHRUBS AND OTHER VEGETATION WITHIN THE LIMITS OF THE WORK AREA. ALL TREES, BUSHES, AND SHRUBS SHALL REMAIN UNLESS ABSOLUTELY NECESSARY FOR INSTALLATION OF ITEMS SHOWN ON THE PLANS AT THAT LOCATION. THE CONTRACTOR SHALL ATTEMPT TO SAVE ALL TREES WHEN ADJACENT OR NEAR A CONSTRUCTION AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TREES THAT DIE BECAUSE OF ANY UNNECESSARY ROOT REMOVAL OR CONTRACTOR NEGLIGENCE. ANY UNNECESSARY REMOVED TREE, BUSH, OR SHRUB SHALL BE REPLACED WITH A NURSERY PLANT OF SIMILAR TYPE. THIS ITEM OF WORK SHALL BE CONSIDERED SUBSIDIARY TO THE BID ITEM CLEARING AND GRUBBING, THEREFORE THERE WILL BE NO DIRECT PAYMENT FOR THIS WORK. ALL TREE REMOVALS SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.

ANY SPRINKLER SYSTEMS OR DECORATIVE LIGHTING DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION. ALL LABOR AND MATERIALS NECESSARY FOR THIS RESTORATION SHALL BE PAID FOR UNDER "ROADSIDE IMPROVEMENT" BID ITEM.

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |

Drawn By : lrosenbaum
File : 13668R0201.dgn

Plotted : 25-APR-2019 12:53

KANSAS DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 12 | 393 |

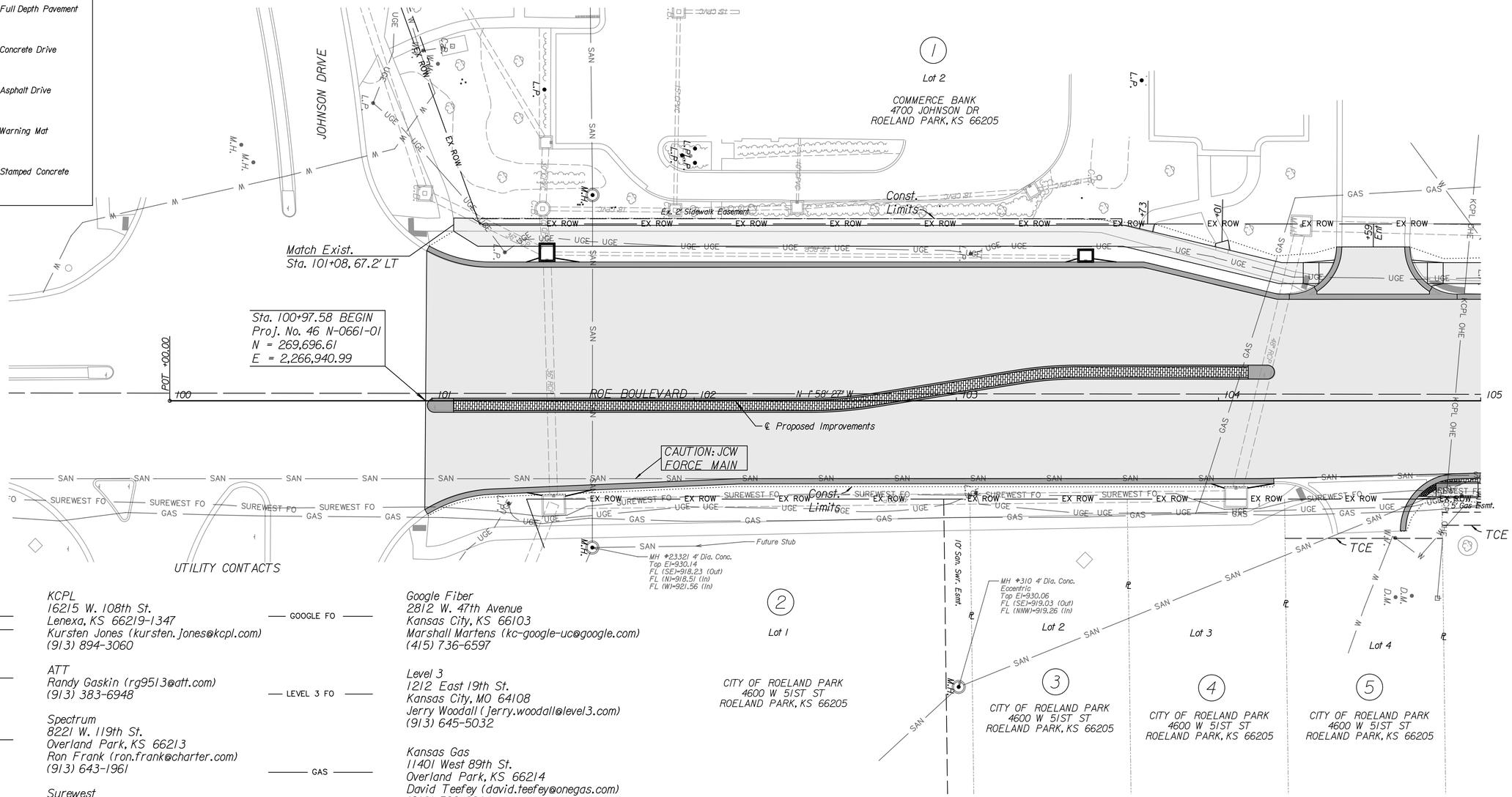
SCALE

20' 0 20' 40'

PLAN: Lat. & Long.

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete




UTILITY CONTACTS

KCPL UGE / KCPL OHE
KCPL
16215 W. 108th St.
Lenexa, KS 66219-1347
Kursten Jones (kursten.jones@kcpl.com)
(913) 894-3060

GOOGLE FO
Google Fiber
2812 W. 47th Avenue
Kansas City, KS 66103
Marshall Martens (kc-google-uc@google.com)
(415) 736-6597

ATT TEL
ATT
Randy Gaskin (rg9513@att.com)
(913) 383-6948

LEVEL 3 FO
Level 3
1212 East 19th St.
Kansas City, MO 64108
Jerry Woodall (Jerry.woodall@level3.com)
(913) 645-5032

SPECTRUM
Spectrum
8221 W. 119th St.
Overland Park, KS 66213
Ron Frank (ron.frank@charter.com)
(913) 643-1961

GAS
Kansas Gas
11401 West 89th St.
Overland Park, KS 66214
David Teefey (david.teefey@onegas.com)
(913) 599-8933

SUREWEST FO
Surewest
John Castilow (John.castilow@consolidated.com)
(913) 322-9785

W
Water One
10747 Renner Boulevard
Lenexa, KS 66219
Daniel Sullivan (dsullivan@waterone.org)
(913) 895-5617

SAN
Sanitary Sewer
Johnson County Wastewater
4800 Nall Ave.
Mission, KS 66202
Mike Piller (mike.piller@jcw.org)
(913) 715-8537

2
Lot 1
CITY OF ROELAND PARK
4600 W 51ST ST
ROELAND PARK, KS 66205

3
CITY OF ROELAND PARK
4600 W 51ST ST
ROELAND PARK, KS 66205

4
CITY OF ROELAND PARK
4600 W 51ST ST
ROELAND PARK, KS 66205

5
CITY OF ROELAND PARK
4600 W 51ST ST
ROELAND PARK, KS 66205

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107

KANSAS DEPARTMENT OF TRANSPORTATION

ROE BOULEVARD PLAN

STA. 100+00 TO STA. 105+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted: 25-APR-2019 12:53

Drawn By: lrosenbaum
File: 13668R1301.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 13 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

MH #21232 3' Dia. Brick Concentric Top El=937.68 FL (NW)=934.23 (Out) FL (S)=933.90 (Out) *Note: Pipe elevations show high point in pipes at this manhole.

MH #21233 3' Dia. Brick Concentric Top El=937.34 FL (NE)=934.35 (Out) FL (W)=934.36 (Out)

MH #315 3' Dia. Brick Concentric Top El=937.95 FL (ESE)=933.84 (Out) FL (N)=933.39 (In) FL (SW)=933.94 (In)

MH #22255 3' Dia. Conc. Eccentric Top El=937.94 FL (SE)=933.81 (Out) FL (E)=933.82 (In) FL (N)=933.83 (In) *Note: Outlet Pipe flowline is lower than downsteam elevation.

MH #314 4' Dia. Conc. Eccentric Top El=935.28 FL (ESE)=928.60 (Out) FL (WNW)=930.76 (In)

MH #311 4' Dia. Brick Eccentric Top El=933.07 FL (SSE)=923.91 (Out) FL (N)=923.94 (In)

MH #312 4' Dia. Brick Concentric Top El=934.39 FL (S)=924.95 (Out) FL (WNW)=925.15 (In) FL (N)=925.11 (In)

MH #313 4' Dia. Brick Concentric Top El=949.51 FL (S)=941.49 (Out) FL (N)=941.54 (In)

Begin Construction Sta. 1+04.53

POT +00.00

PC +65.21

PT +83.73

POT +50.00

POT +00.00

Match Existing Sta. 5+07, 14.4' RT

BM #10

Const. Limits

LINDEN STREET

S 34° 28' 20" E

S 81° 21' 52" E

N 88° 01' 33" E

W 57TH STREET

ROE BOULEVARD

℄ POT +00.00

℄ Proposed Improvements

Exist. Water Line To Be Abandoned

Exist. Gas Line To Be Abandoned

PROP. GAS LINE

PROP. WATER LINE

CAUTION: JCW FORCE MAIN

Possible Future Stub Next Structure Not Found

TCE

Street and Storm Drainage Resolution 391.

10' Strm. Swr. Esmt.

5' Gas Esmt.

Shawnee Mission Water Company Esmt.

5' Utility Easement Per Plat

6' Water Esmt.

Lot 1 — 7 — CAROL A. BAGBY, 4701 W 57TH ST, ROELAND PARK, KS 66205

Lot 3 — 11 — MICHAEL H. EDWARDS, 5616 ROE BLVD., ROELAND PARK, KS 66205

Lot 2 — 14 — ROSE CORTINA, 5606 ROE BLVD, ROELAND PARK, KS 66205

Lot 1 — 17 — ANNE M. BLEDSOE & JASON P. BLEDSOE, 5600 ROE BLVD, ROLAND PARK, KS 66205

Lot 5 — 6 — TY K. GRAY, 5641 ROE BLVD, ROELAND PARK, KS 66205

Lot 6 — 8 — BRIDGETTE R. SIMPLICIO, 5635 ROE BLVD, ROELAND PARK, KS 66205

Lot 7 — 9 — LAURA A., JAMES B. & SUSAN E. DAY, 5631 ROE BLVD, ROELAND PARK, KS 66205

Lot 8 — 10 — HANNAH BOEHNER, 5627 ROE BLVD, ROELAND PARK, KS 66205

Lot 9 — 12 — TODD N. & JANET Z. ZIMMER, 5621 ROE BLVD, ROELAND PARK, KS 66205

Lot 10 — 13 — JAMES L. MEYERS LIVING TRUST, 5617 ROE BLVD, ROELAND PARK, KS 66205

Lot 11 — 15 — SEVEN BIRCH ROE, LLC, 5611 ROE BLVD, ROELAND PARK, KS 66205

Lot 12 — 16 — CHRISTOPHER D. & JENNIFER L. PURVIS, 5607 ROE BLVD, ROELAND PARK, KS 66205

Lot 13 — 18 — LINDA E. CAMPOS, KANSAS WARRANTY DEED, 5601 ROE BLVD, ROELAND PARK, KS 66205

BM #10 - Chiseled "L" on top Southwest corner of curb inlet West side of Linden St. 1st curb inlet North of West 57th St.
Coordinates:
N: 270320.8054
E: 2266721.6683
EL: 937.0050

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107

KANSAS DEPARTMENT OF TRANSPORTATION

# ROE BOULEVARD PLAN
## STA. 105+00 TO STA. 110+00

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted : 25-APR-2019 12:53
Drawn By : lrosenbaum
File : 13668R1302.dgn

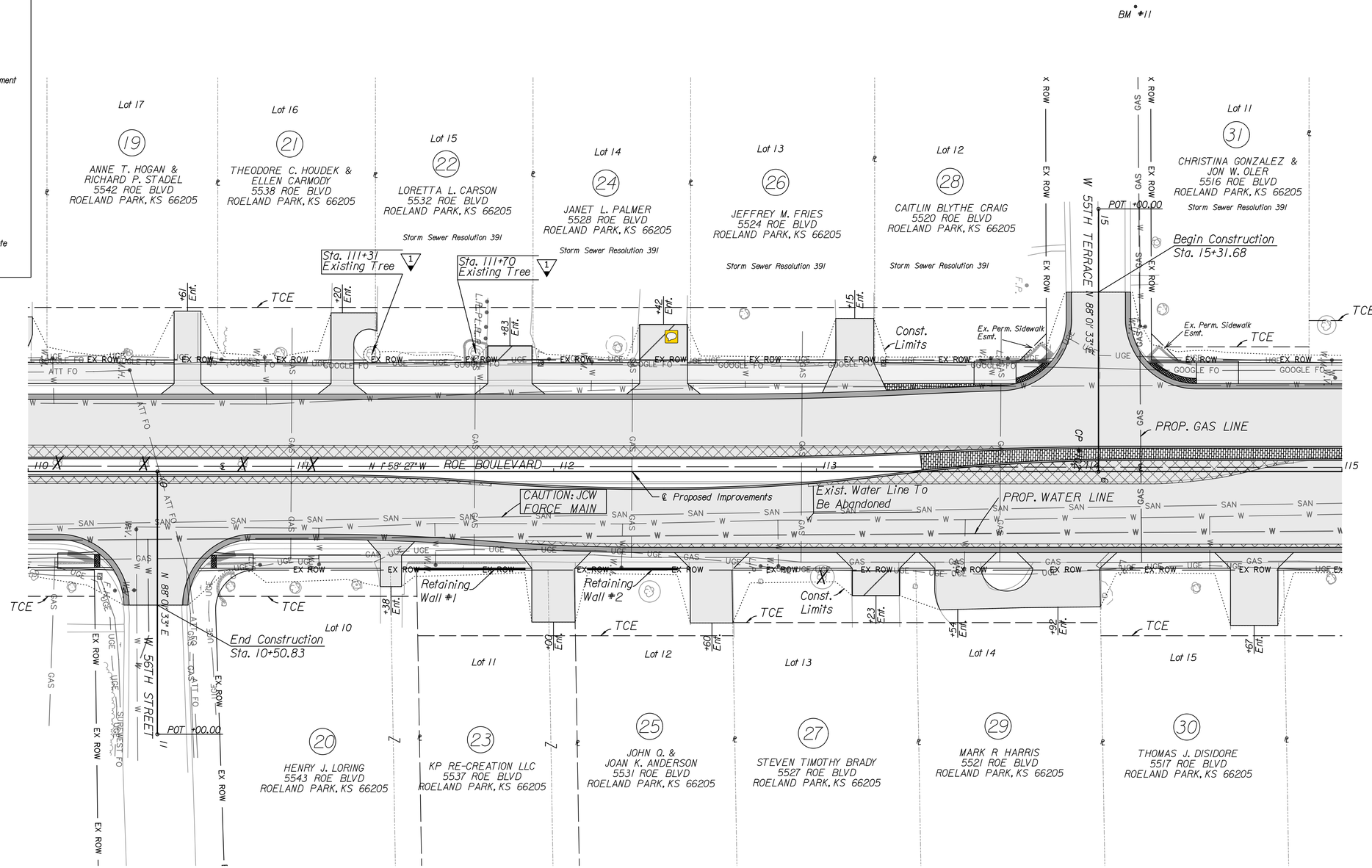
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 14 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

CONSTRUCTION NOTE:

1. Contractor shall jog sidewalk around existing tree to avoid tree removal and minimize impacts to root system.




SCALE
PLAN: Lat. & Long. 20' 0 20' 40'

BM #11 - Set two 100D spikes stepped in the South face of power pole North side West 55th Terr. 1st pole West of Roe Ave.
Coordinates:
N: 271013.6068
E: 2266718.4475
EL: 962.2050

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107
For retaining wall plans see sheets no. 77-80

KANSAS DEPARTMENT OF TRANSPORTATION
ROE BOULEVARD PLAN
STA. 110+00 TO STA. 115+00

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted : 25-APR-2019 12:53
Drawn By : Irosenbaum
File : 13668R1303.dgn

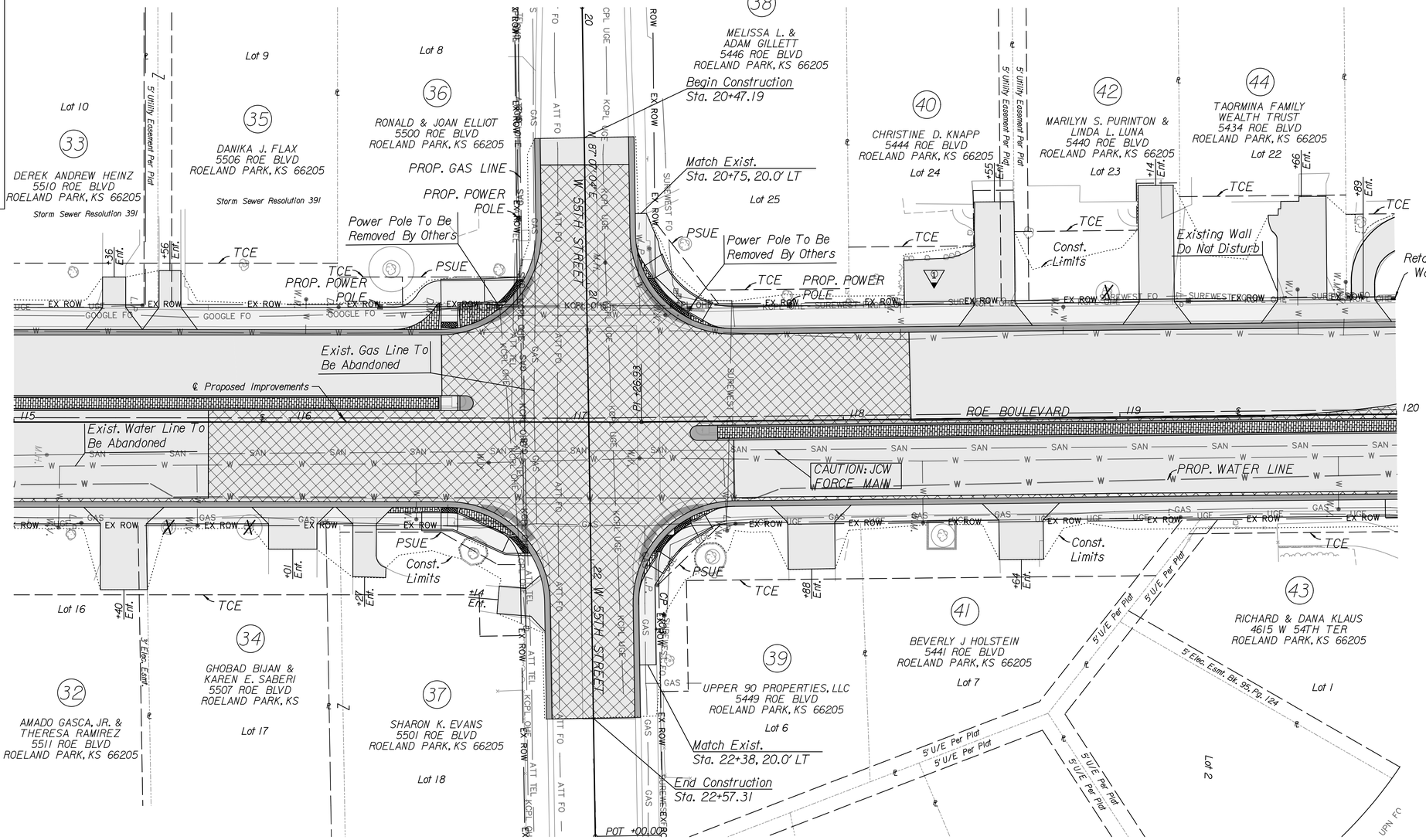
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 15 | 393 |

**LEGEND**

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

**CONSTRUCTION NOTE:**

(1) Contractor shall construct parking pad flush with driveway and sidewalk edges. Parking pad accounted for in driveway quantities.




SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

BM #12 - Set chiseled "U" on top back of curb South side West 55th St. in line with the East side House 4715 West 55th St.
Coordinates:
N: 271282.2040
E: 2266694.4402
EL: 965.9300

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107

KANSAS DEPARTMENT OF TRANSPORTATION
ROE BOULEVARD PLAN
STA. 115+00 TO STA. 120+00

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

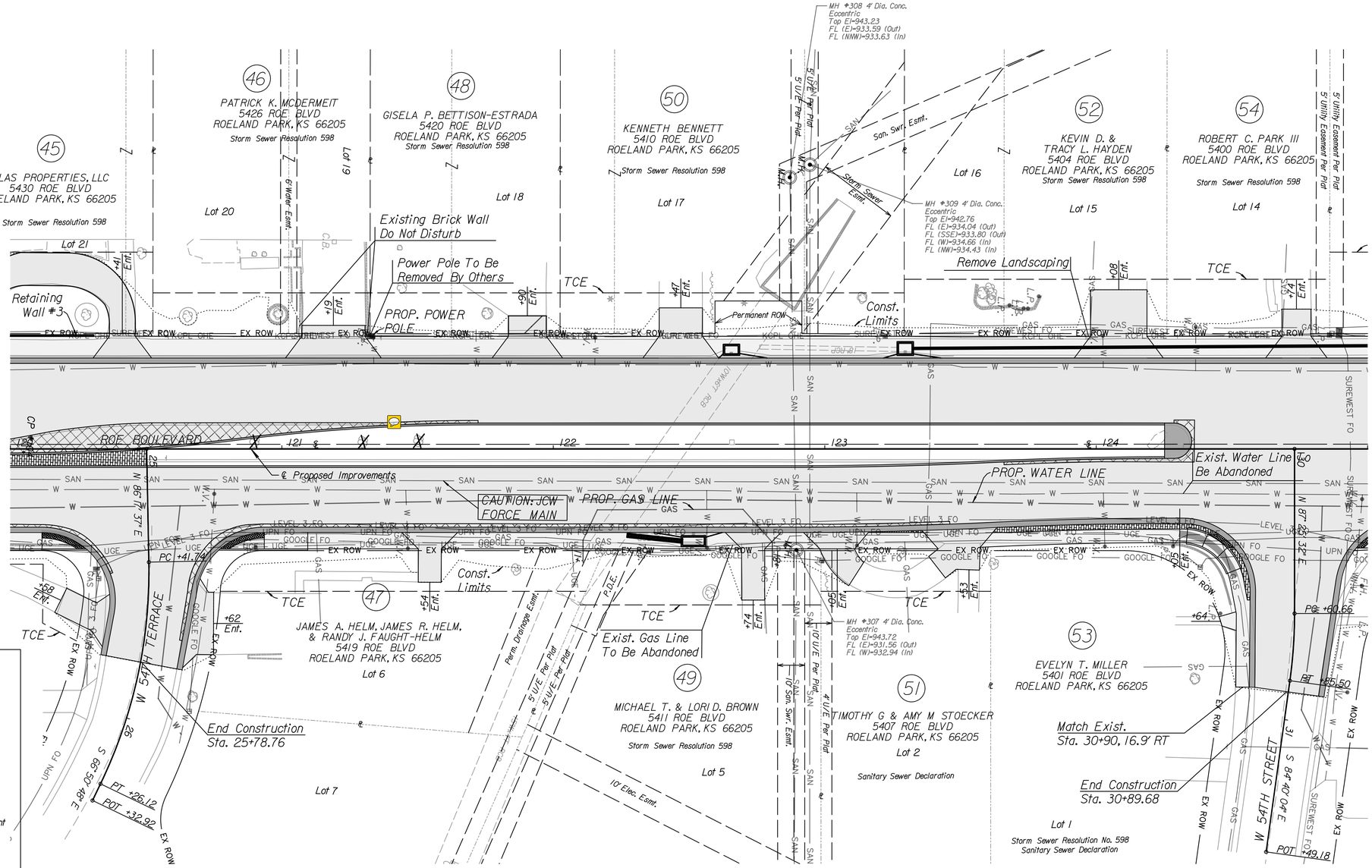
Plotted :25-APR-2019 12:53
Drawn By : lrosenbaum
File : 13668R1304.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 16 | 393 |

| DATE | BY | |
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| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:53

Drawn By : lrosenbaum
File : 13668R1305.dgn




For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107
For retaining wall plans see sheets no. 77-80

*KANSAS DEPARTMENT OF TRANSPORTATION*

# ROE BOULEVARD PLAN

## STA. 120+00 TO STA. 125+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 17 | 393 |

CONSTRUCTION NOTE:

1. Contractor shall sawcut retaining wall at sidewalk termination. Do not disturb existing stairs.
2. For construction & grading details, please reference sheet 71.

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'

LEGEND
- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

Begin Construction Sta. 35+62.04

60 HARVEY R. AND MARY E. GAINES 5322 ROSEWOOD DR ROELAND PARK, KS 66205 Lot 10

58 ANNEMARIE SMITH 5326 ROSEWOOD DR ROELAND, KS 66205 Lot 11

57 MARGARET R. & MICHAEL K. BRISTOW 5332 ROSEWOOD DR ROELAND PARK, KS 66205 Lot 12 Storm Sewer Resolution 598

55 OLIVIA J. ROLLF 5334 ROE BLVD ROELAND PARK, KS 66205 Lot 13 Storm Sewer Resolution 598

63 GLENDALE W. & HEIDI A. MCKNIGHT 5319 ROSEWOOD DR ROELAND PARK, 62 66205 Lot 14

62 CINDY L. HEY 5327 ROSEWOOD DR ROELAND PARK, KS 66205 Lot 15 Storm Sewer Resolution 598

66 KAREN S. KENNEY 5306 ROE BLVD ROELAND PARK, KS 66205 Lot 16 Storm Sewer Resolution 598

MH #21875 4' Dia. Conc. Concentric Top El=958.84 FL (W)=953.63 (Out) FL (SE)=953.70 (In)

BM #13

10' Waterline Esmt.

5' Utility Esmt. Per Plat

San. Swr. Esmt.

TCE

Const. Limits

PROP. POWER POLE

PT #66.35

Power Pole To Be Removed By Others

Remove Landscaping

PROP. WATER LINE

Exist. Water Line To Be Abandoned

ROE BOULEVARD

℄ Proposed Improvements

CAUTION: JCW FORCE MAIN

Retaining Wall #4

PROP. GAS LINE

PC #51.08

Match Exist. Sta. 40+70.16.9' LT

PCT #00.00

Exist. Gas Line To Be Abandoned

End Construction Sta. 40+89.50

59 BONNIE S. VANDERHOFF 5319 ROE BLVD ROELAND PARK, KS 66205 Lot 2 Sanitary Sewer Declaration

61 RANDY & ALLISON K. MANO 5313 ROE BLVD ROELAND PARK, KS 66205 Lot 1 Sanitary Sewer Declaration

56 HAROLD E. & MARY J. FULLER 5325 ROE BLVD ROELAND PARK, KS 66205 Lot 20 Sanitary Sewer Declaration

64 KAY JONES 5307 ROE BLVD ROELAND PARK, KS 66205 Lot 2 Sanitary Sewer Declaration

65 AMANDA C. JORDAN 5301 ROE BLVD ROELAND PARK, KS 66205 Lot 1 Sanitary Sewer Declaration

67 CLARK CHRISTOPHER CHANEY 5247 ROE BLVD ROELAND PARK, KS 66205 Lot 9

Ex. 5' Esmt. Ex. 10' San. Swr. Esmt. Ex. 41.0' E. Per Plat

S 50° 23' 09" E

S 38° 28' 32" E

N 80° 10' 05" E

W 53RD TERRACE

N 82° 38' 32" E

N 8° 34' 28" W

125 126 127 128 129 130

BM #13 - Set chiseled "L" at Southeast corner front face of curb inlet on steel plate North side of Rosewood Dr. 1st curb inlet West side of Roe Ave.
Coordinates:
N: 272362.0276
E: 2266670.7982
EL: 955.9300

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107
For retaining wall plans see sheets no. 77-80

KANSAS DEPARTMENT OF TRANSPORTATION
ROE BOULEVARD PLAN
STA. 125+00 TO STA. 130+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 12:53
Drawn By : lrosenbaum
File : 13668R1306.dgn

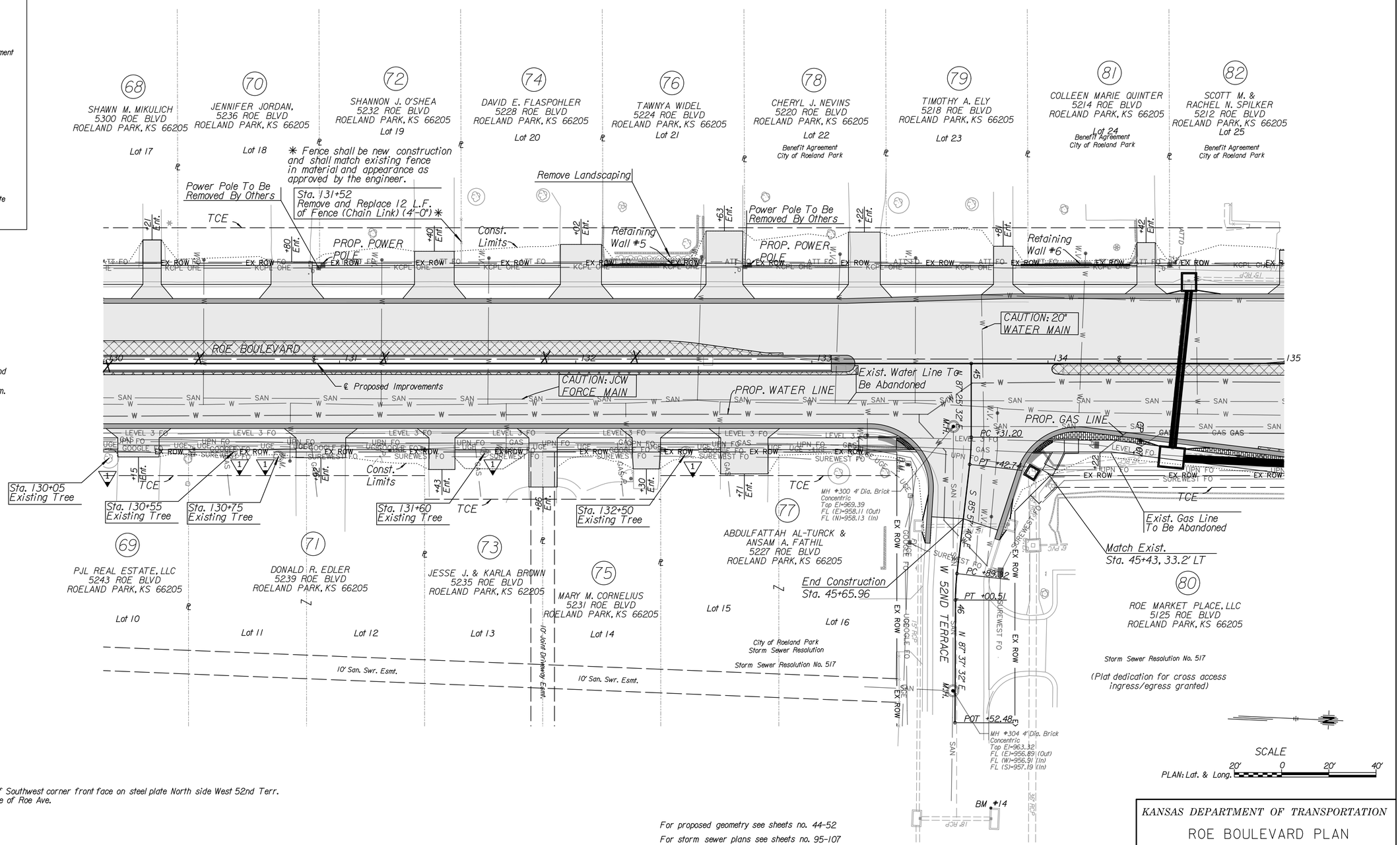
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 18 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

CONSTRUCTION NOTE:

1. Contractor shall jog sidewalk around existing tree to avoid tree removal and minimize impacts to root system.




BM #14 - Set chiseled "L" on top of Southwest corner front face on steel plate North side West 52nd Terr. 2nd curb inlet East side of Roe Ave.
Coordinates:
N: 272980.6485
E: 2266998.8542
EL: 963.2500

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107
For retaining wall plans see sheets no. 77-80

KANSAS DEPARTMENT OF TRANSPORTATION

ROE BOULEVARD PLAN

STA. 130+00 TO STA. 135+00

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted: 25-APR-2019 12:53

Drawn By: Irosenbaum
File: 13668R1307.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 19 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Wrought Iron
- Proposed Stamped Concrete

18

81 COLLEEN MARIE QUINTER 5214 ROE BLVD ROELAND PARK, KS 66205 Lot 24 Benefit Agreement City of Roeland Park

82 SCOTT M. & RACHEL N. SPILKER 5212 ROE BLVD ROELAND PARK, KS 66205 Lot 25 Benefit Agreement City of Roeland Park

83 PRAIRIE COAST PARTNERS LLC 5208 ROE BLVD ROELAND PARK, KS 66205 Lot 26 Benefit Agreement City of Roeland Park Cross-Easement Declaration (Over Access Driveway)

84 IMAGINE ENTERPRISES LLC 5204 ROE BLVD ROELAND PARK, KS 66205 Lot 27 Cross-Easement Declaration (Over Access Driveway) Storm Sewer Resolution No. 517

86 TMM ROELAND PARK CENTER, LLC 4701 SYCAMORE DR ROELAND PARK, KS 66205 Lot 2

87 TMM ROELAND PARK CENTER, LLC 5150 ROE BLVD ROELAND PARK, KS 66205

80 ROE MARKET PLACE, LLC 5125 ROE BLVD ROELAND PARK, KS 66205 Storm Sewer Resolution No. 517 (Plat dedication for cross access ingress/egress granted)

80 ROE MARKET PLACE, LLC 5125 ROE BLVD ROELAND PARK, KS 66205 Storm Sewer Resolution No. 517 (Plat dedication for cross access ingress/egress granted)

85 THE MISSION BANK 5115 ROE BLVD ROELAND PARK, KS 66205 Storm Sewer Resolution No. 517 (Plat dedication for cross access ingress/egress granted) Lot 1

88 BINK'M COMPANY, LLC 5201 ROE BLVD ROELAND PARK, KS 66205 Storm Sewer Resolution 517 City of Roeland Park Storm SewerResolution Lot 18

89 MCDONALD'S CORPORATION 5103 ROE BLVD ROELAND PARK, KS 66205 Storm Sewer Resolution 517 Lot 1

ROE BOULEVARD

Retaining Wall #6

CAUTION: 20" WATER MAIN

PROP. GAS LINE

Match Exist. Sta. 45+43, 33.2' LT

Exist. Gas Line To Be Abandoned

TCE

PSUE

Const. Limits

Exist. Water Line To Be Abandoned

℄ Proposed Improvements

CAUTION: DCW FORCE MAIN

PROP. WATER LINE

Power Pole To Be Removed By Others

PROP. POWER POLE

25' W. Water Main Esmt.

15' W. San. Sewer Esmt.

20' W. Water Main Esmt.

10' W. Elec. Easement

5' Utility Easement Per Plat

MH #301 4' Dia. Brick Concentric Top El=969.50 FL (S)=960.72 (Out) FL (W)=960.74 (In)

MH #302 4' Dia. Brick Concentric Top El=975.25 FL (S)=964.47 (Out) FL (N)=964.50 (In) FL (E)=964.57 (In)

MH #304 4' Dia. Brick Concentric Top El=963.32 FL (E)=956.89 (Out) FL (W)=956.91 (In) FL (S)=957.19 (In)

BM #15 - Set chiseled "L" on top of Northeast corner steel plate bumper guard on conc. dock @ the Southwest corner building 5201 Roe Ave.
Coordinates:
N: 273400.4592
E: 2266890.6375
EL: 979.5200

SYCAMORE DRIVE

End Construction Sta. 55+54.50

POT +00.00

SCALE 20' 0 20' 40' PLAN: Lat. & Long.

For proposed geometry see sheets no. 44-52

For storm sewer plans see sheets no. 95-107

KANSAS DEPARTMENT OF TRANSPORTATION

ROE BOULEVARD PLAN

STA. 130+00 TO STA. 135+00

ROE BOULEVARD PLAN

STA. 135+00 TO STA. 140+00

Plotted : 25-APR-2019 12:53

Drawn By : lrosenbaum

File : 13668R1308.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 20 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

Lot 1 (87)
TMM ROELAND PARK CENTER, LLC
5150 ROE BLVD
ROELAND PARK, KS 66205

Lot 3 (91)
TMM ROELAND PARK CENTER, LLC
5000 ROE BLVD
ROELAND PARK, KS 66205

24" RCP
87" RCP
18" RCP
Match Exist.
Sta. 142+00, 64.9' LT
20' W. Water Main Esmt.
10' W. Elec. Easement
TCE
Const. Limits
Power Pole To Be Removed By Others
PROP. POWER POLE
PSUE
12" W. Underground Tele. Esmt.
10' W. Elec. Esmt.
7' W. Elec. Esmt.
EX ROW
KCPL OHE
KCPL UGE
ATT TEL
SAN
GAS
W
UPN FO
SUREWEST FO
LEVEL 3 FO
140
141
℄ ROE BOULEVARD
142
143
144
145
Exist. Water Line To Be Abandoned
℄ Proposed Improvements
CAUTION: JCW FORCE MAIN
MH #303 4' Dia. Brick Concentric
Top El=983.44
FL (S)=974.25 (Out)
FL (ESE)=974.40 (In)
7.5' Sidewalk Easement Per Plat
(Vacated ROE LANE) 30' Utility Easement Ordinance No. 617
5' Elec. Esmt. Bk. 161 Pg. 485
10' Elec. Easement
Lot 1 (89)
MCDONALD'S CORPORATION
5103 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution 517
Match Exist.
Sta. 60+86, 23.6' RT
W 51ST STREET
Match Exist.
Sta. 60+82, 24.0' LT
End Construction
Sta. 60+83.08
POT #22.55
Lot 1 (90)
MEREDITH PROPERTIES, INC
City of Roeland Park
Storm Sewer Resolution
Elec. Esmt.
San. Swr. Esmt.
Lot 1 (90)
MEREDITH PROPERTIES, INC
(Elec. Esmt. over and across Lots 1-4)
City of Roeland Park
Storm Sewer Resolution

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107

KANSAS DEPARTMENT OF TRANSPORTATION
ROE BOULEVARD PLAN
STA. 140+00 TO STA. 145+00

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted :25-APR-2019 12:53
Drawn By: Irosenbaum
File : 13668R1309.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 21 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:53
Drawn By : Irosenbaum
File : 13668R1310.dgn

Begin Construction Sta. 65+33.66
Match Exist. Sta. 65+34, 25.5' RT
Match Exist. Sta. 65+33, 33.0' LT
50TH TERRACE
ROE BOULEVARD
ROE LANE

(91) TMM ROELAND PARK CENTER, LLC
5000 ROE BLVD
ROELAND PARK, KS 66205
Lot 3

(95) BELLA ROE LOTS 2, 3 AND 6 07 A, LLC
4990 ROE BLVD
ROELAND PARK, KS 66205
Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.
Sanitary Sewer Esmt.
Elec. Esmt.

(97) WG DST I
4951 ROE BLVD
ROELAND PARK, KS 66205
Non-exclusive cross-easement for ingress/egress and Access Esmt.
Elec. Esmts.
Lot 1

(93) Phillip Martin
5017 Granada St
Roeland Park, KS 66205

(94) Conner Smith
5025 Roe Ln
Roeland Park, KS 66205

TCE
PROP. GAS LINE
PSUE
Const. Limits
Exist. Gas Line To Be Abandoned
Retaining Wall #7
CAUTION: JCW FORCE MAIN
Communication Esmt.
7' W. Elec. Esmt.
10' Elec. Esmt.
15' U/E Per Plat
10' Water Esmt.
10' Water Esmt. Bk. 2006Q1, Pg. 0009317
20' U/E Per Plat
Sign Easement
7.5 Sidewalk Easement Per Plat
(Vacated ROE LANE) 30' Utility Easement Ordinance No. 611
℄ Proposed Improvements
Match Exist. Sta. 72+36, 22.5' LT
End Construction Sta. 72+36.14
Match Exist. Sta. 72+36, 21.0' RT
N 87° 16' 49" E 1319.70'
N 28° 32' 08" E 75.71'
PC +41.37
PC +51.72
POT +50.00
145 146 147 148 149 150

CONSTRUCTION NOTE:

1. Contractor to remove existing block retaining wall as necessary to construct proposed sidewalk ramp but utilize as much of existing retaining wall as possible. Contractor shall add fill at a 4:1 slope along bottom of existing retaining wall as necessary to keep wall height 2.5' tall or less. Refer to typical section sheet 5 for more detail.
2. Contractor to grade around existing AT&T manhole.
3. Contractor to sawcut and remove existing cul-de-sac pavement and curb necessary in order to install sidewalk ramp.

BM #16 - Set chiseled "U" on top of East side conc. base parking light pole South side West 50th Terr. West side entr. to strip mall 1st entr. West of Roe Ave.
Coordinates:
N: 274166.7883
E: 2266521.6916
EL: 985.4400

LEGEND
- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107

KANSAS DEPARTMENT OF TRANSPORTATION
ROE BOULEVARD PLAN
STA. 145+00 TO STA. 150+00

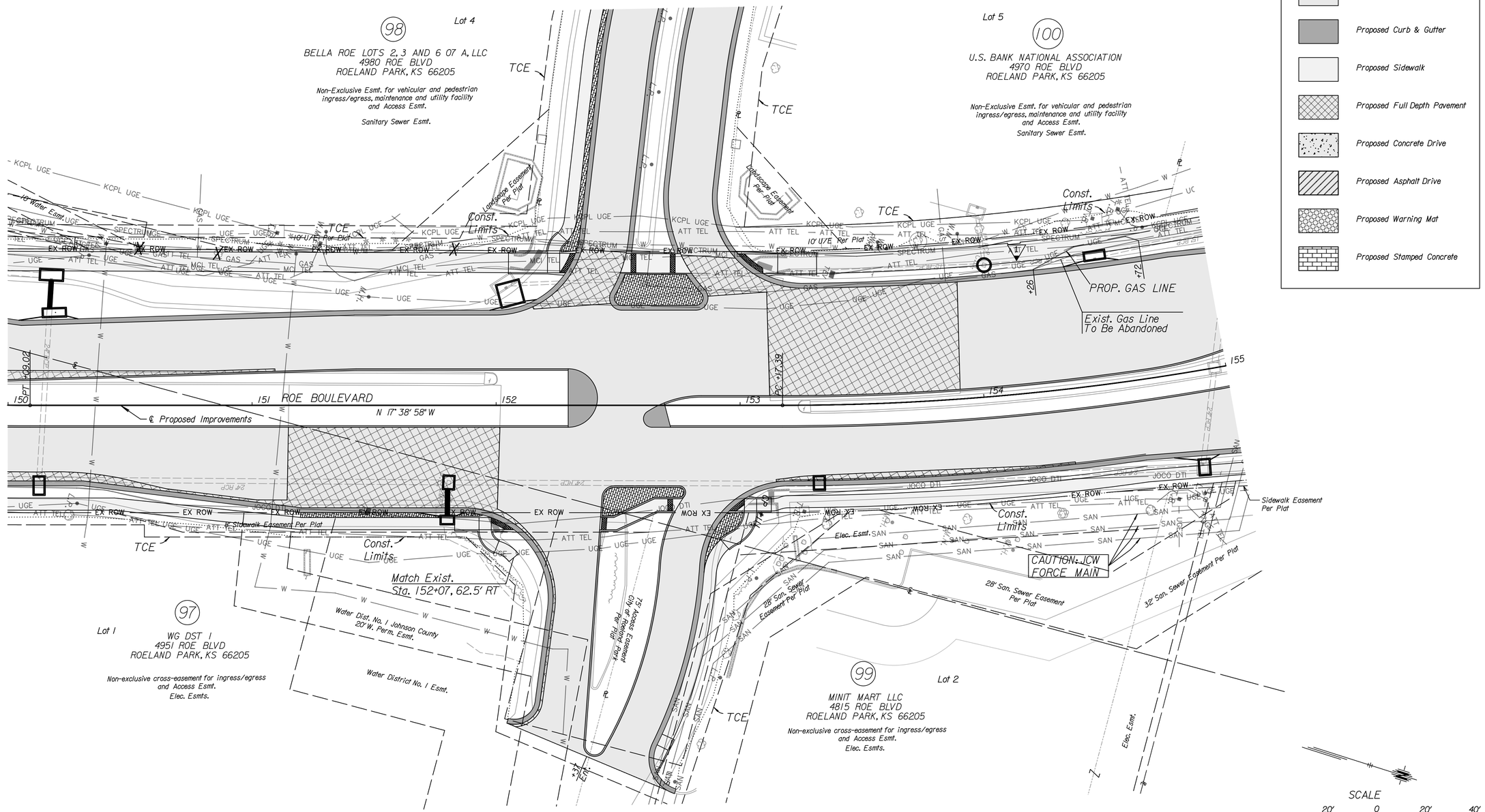
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 22 | 393 |

**CONSTRUCTION NOTE:**

1. Contractor shall jog sidewalk around existing Charter pullbox at Sta. 154+10 LT.

**LEGEND**

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete




For proposed geometry see sheets no. 44-52

For storm sewer plans see sheets no. 95-107

*KANSAS DEPARTMENT OF TRANSPORTATION*

ROE BOULEVARD PLAN

STA. 150+00 TO STA. 155+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 12:53

Drawn By : lrosenbaum

File : 13668R1311.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 23 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

MH #297 6'-8' Dia. Conc. Eccentric
Top El=964.53
FL (NE)=934.27 (Out)
FL (NW)=?? (In)
FL (S)=?? (In)

20' San. Sewer Easement Per Plat

96

BELLA ROE LOTS 2, 3 AND 6 OF A, LLC

San. Sewer Easement Per Plat

Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.
Sanitary Sewer Esmt.

Tract A

CAUTION: JCW FORCE MAIN

Match Exist.
Sta. 76+23, 25.2' RT

Begin Construction
Sta. 75+34.67

Match Exist.
Sta. 75+60, 27.4' LT

Const. Limits

SKYLINE DRIVE

N 87° 17' 08" E 1315.76

Sign Easement

Const. Limits

PT +63.70

155 156 157 158 159 160

ROE BOULEVARD

℄ Proposed Improvements

N 32° 31' 16" W

Sidewalk Easement Per Plat

Match Exist.
Sta. 156+26.90, 58.0' RT

Const. Limits

Match Exist.
Sta. 81+15, 40.8' RT

101

JL Group Holdings I, LLC

Amended Reciprocal Cross-Easement Agreement

Non-Exclusive Easement for Pedestrian and Vehicle Access and Parking

Mission Township Main Sewer Dist. No. 1

Elec. Esmt.

Lot 3

Utility Easement Per Plat

W 48TH STREET

N 87° 17' 08" E 1315.76

10' w. Force Main and Gravity Outfall Esmt.

BM #18

Const. Limits

Match Exist.
Sta. 81+55, 27.7' LT

End Construction
Sta. 81+56.90

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

BM #18 - Set chiseled "L" on top of Northwest corner conc. base for steel art sculpture @ Northeast quad intersection of Roe Ave. & 48th St.
Coordinates:
N: 275428.1047
E: 2266425.7425
EL: 958.6200

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107

KANSAS DEPARTMENT OF TRANSPORTATION

ROE BOULEVARD PLAN

STA. 155+00 TO STA. 160+00

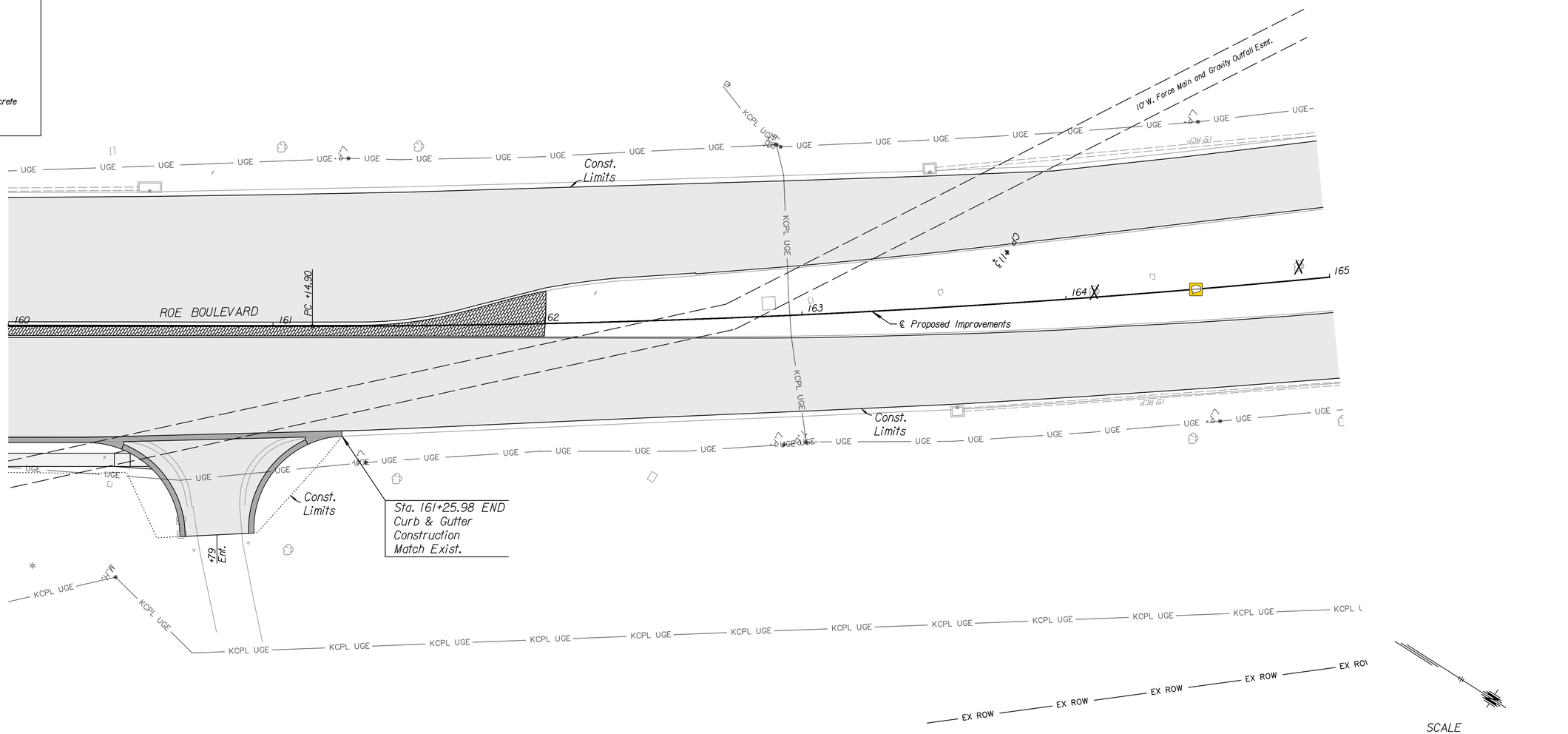
| DATE | BY | |
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| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:53
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File : 13668R1312.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 24 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete




SCALE
PLAN: Lat. & Long. 20' 0 20' 40'

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107

KANSAS DEPARTMENT OF TRANSPORTATION
ROE BOULEVARD PLAN
STA. 160+00 TO STA. 165+00

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted : 25-APR-2019 12:53
Drawn By : lrosenbaum
File : 13668R1313.dgn

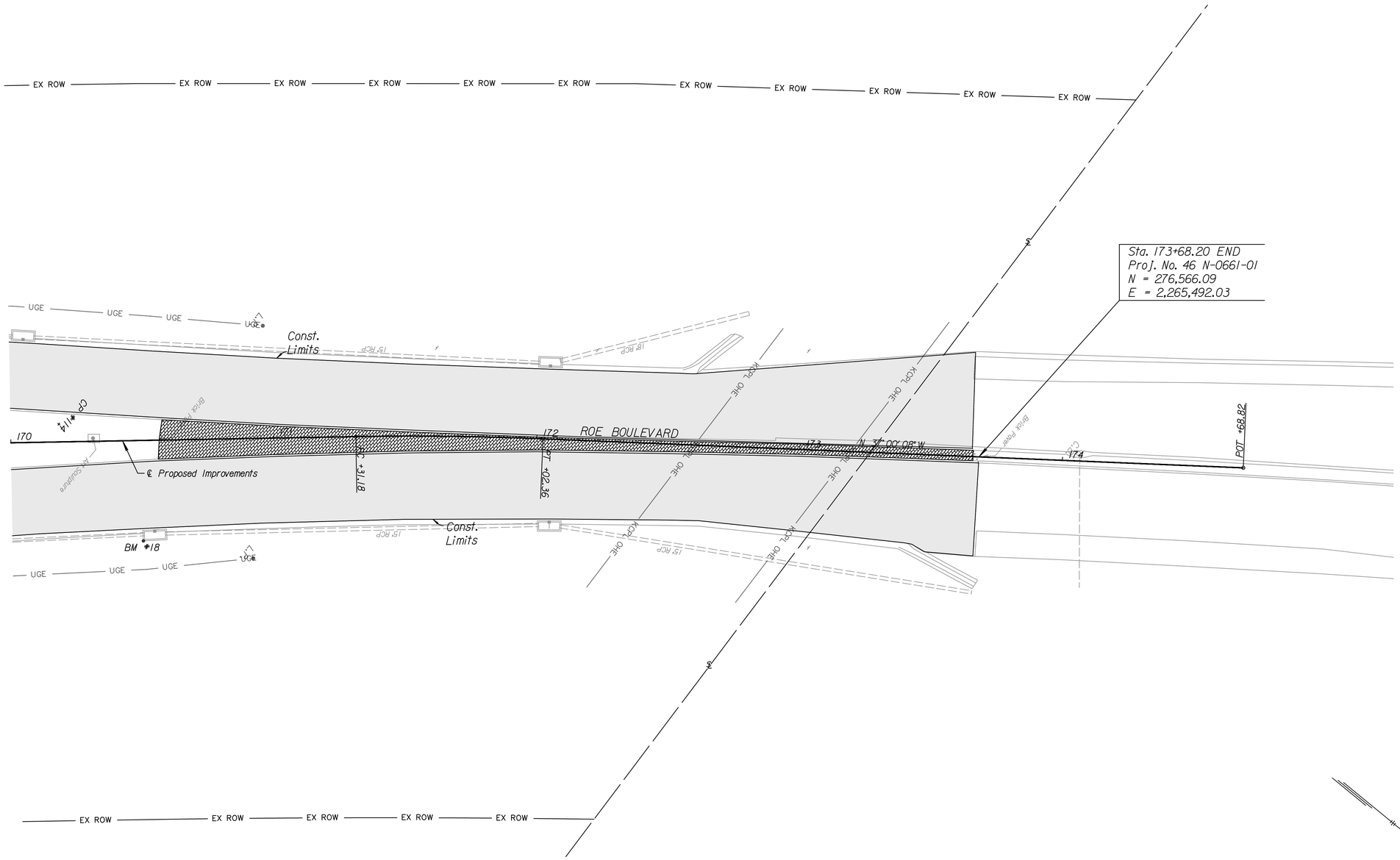
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 25 | 393 |

10' W. Force Main and Gravity Outfall Esmt.

UGE — UGE — UGE —

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 26 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

BM #18 - Set chiseled "L" on top of Northwest corner conc. base for steel art sculpture @ Northeast quad intersection of Roe Ave. & 48th St.
Coordinates:
N: 275428.1047
E: 2266425.7425
EL: 958.6200

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'

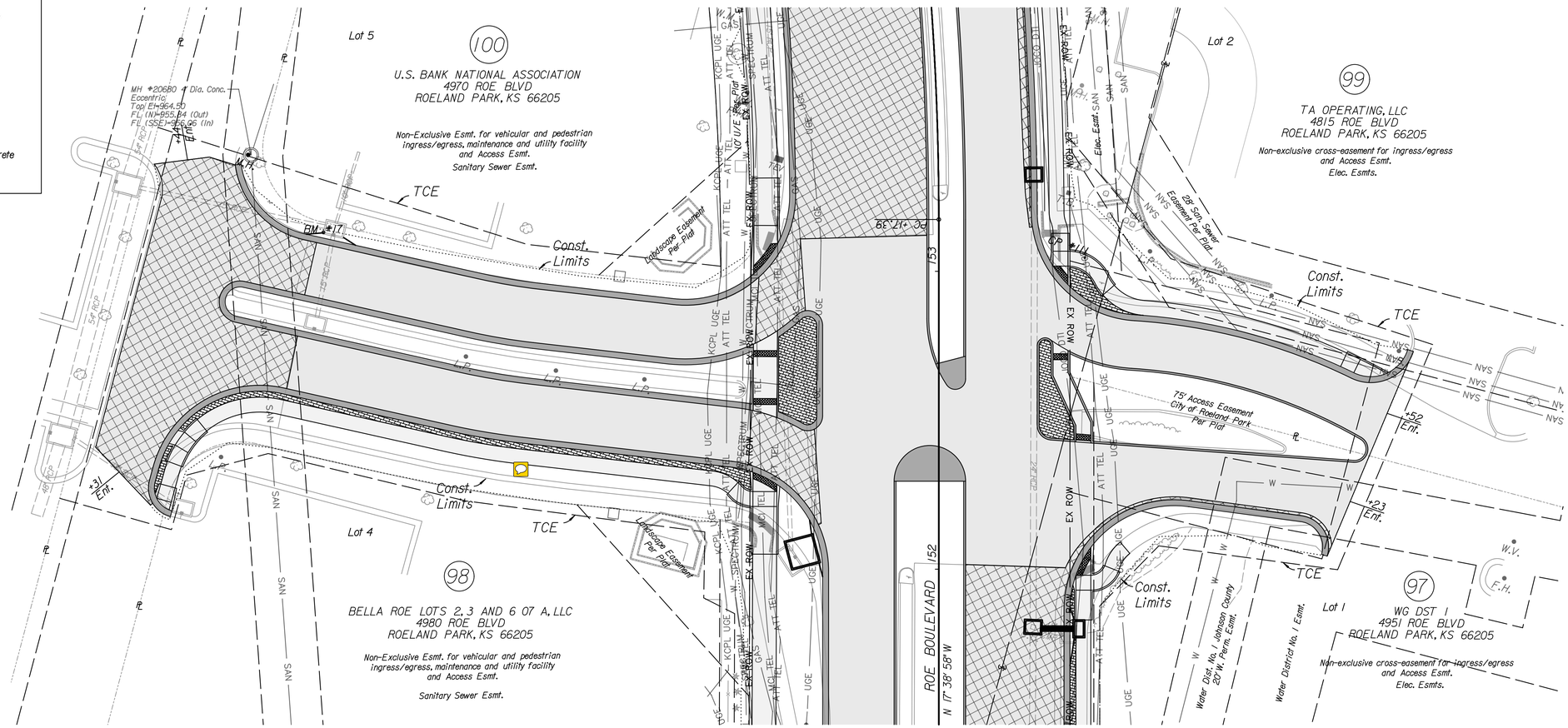
KANSAS DEPARTMENT OF TRANSPORTATION
ROE BOULEVARD PLAN
STA. 170+00 TO STA. 174+68.82

Plotted : 25-APR-2019 12:53
Drawn By : lrosenbaum
File : 13668R1314A.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 27 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete




BM #17 - Set chiseled "U" on top of Southwest corner curb inlet North side entr. to "Lowes" and "Price Chopper" 1st curb inlet West of Roe Ave.
Coordinates:
N: 274825.8560
E: 2266467.8426
EL: 964.1700

For proposed geometry see sheets no. 44-52
For storm sewer plans see sheets no. 95-107

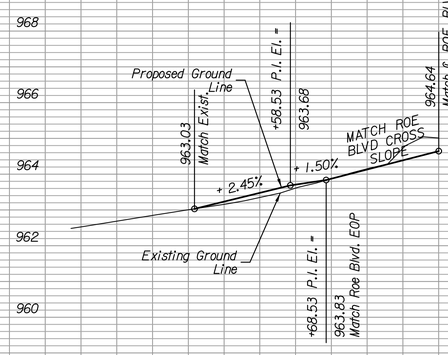
KANSAS DEPARTMENT OF TRANSPORTATION

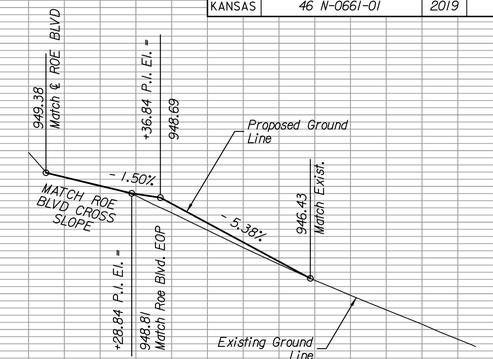
LOWE'S ENTRANCE & WALGREENS ENTRANCE PLAN

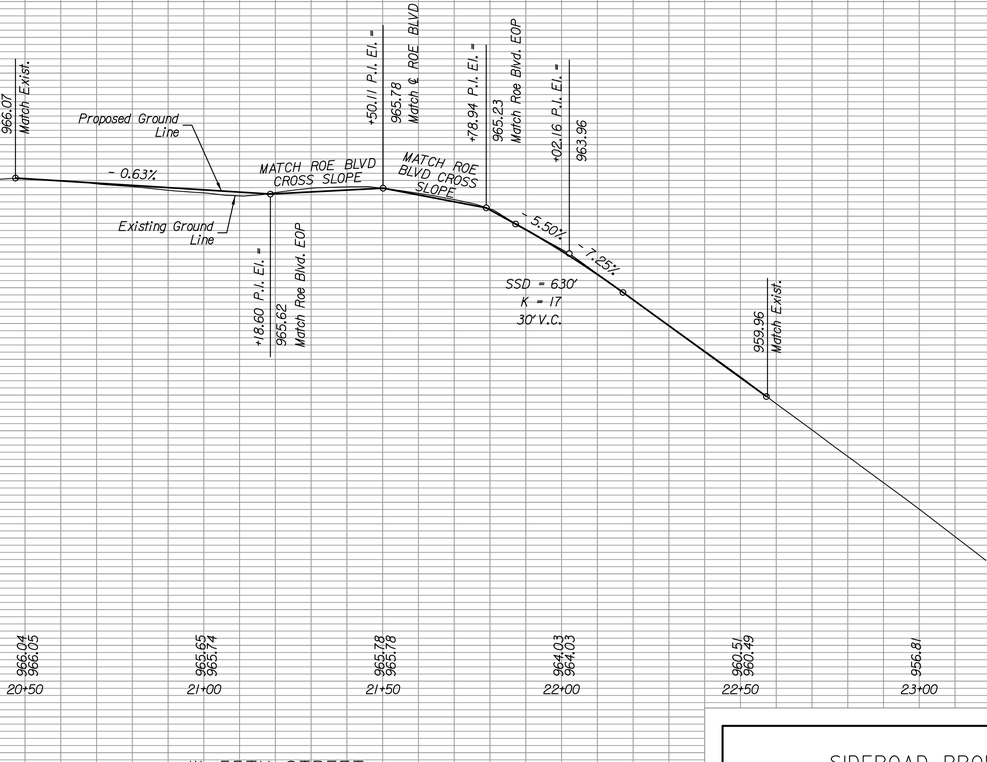
| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

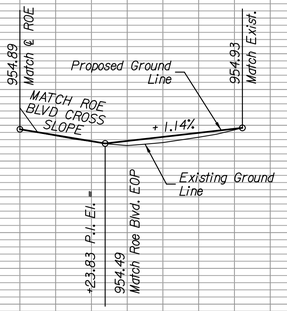
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Drawn By : lrosenbaum
File : 13668R1315.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 28 | 393 |




W 55TH TERRACE

W 54TH TERRACE

W 56TH STREET

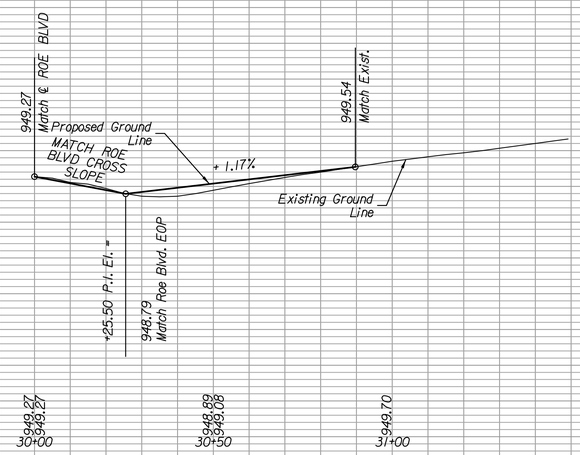
W 55TH STREET

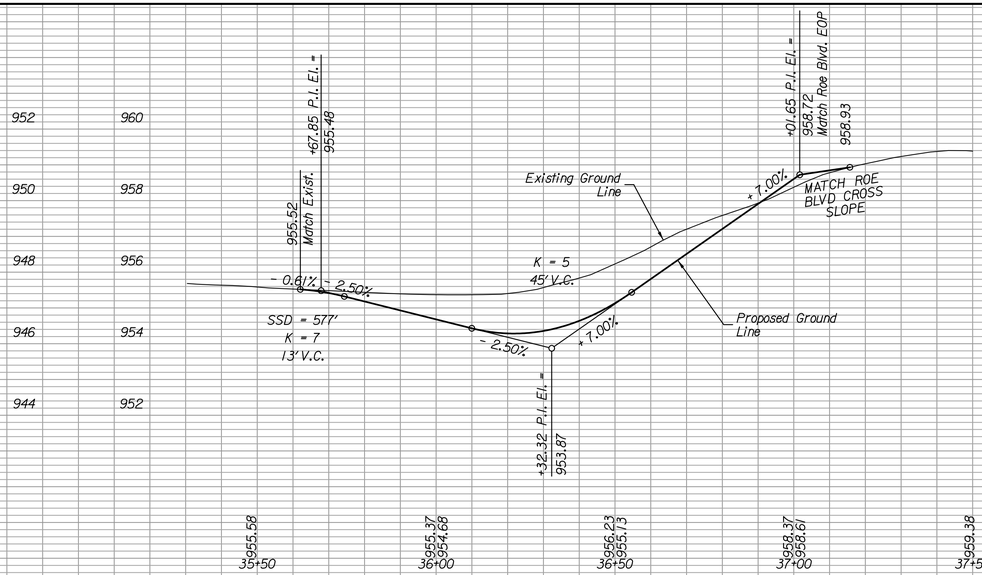
SIDEROAD PROFILE
SHEET 1 OF 4

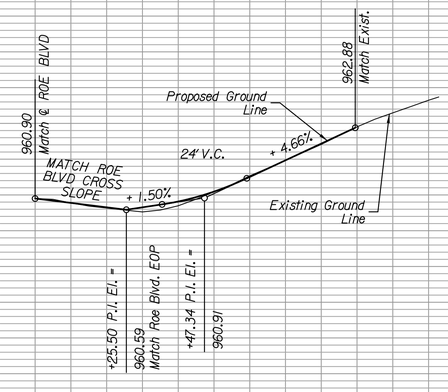
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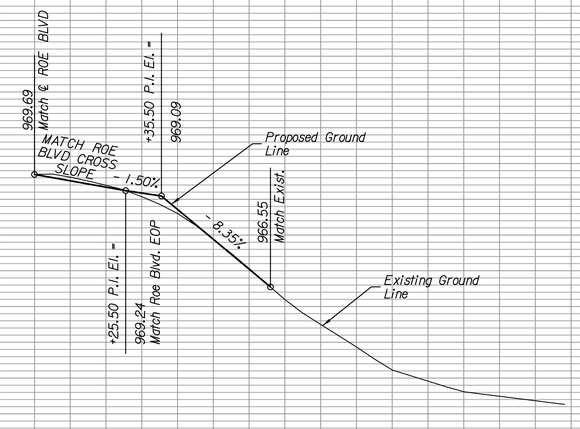
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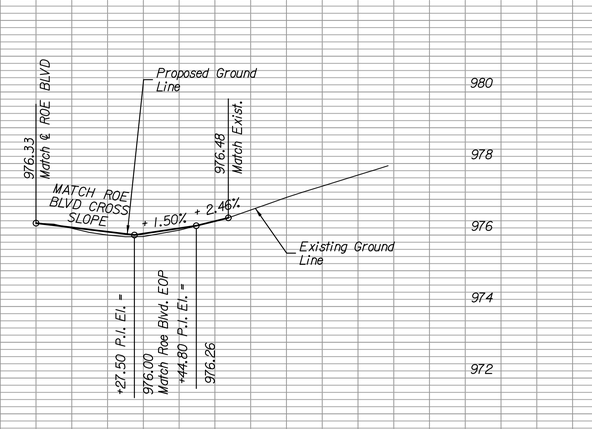
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 29 | 393 |



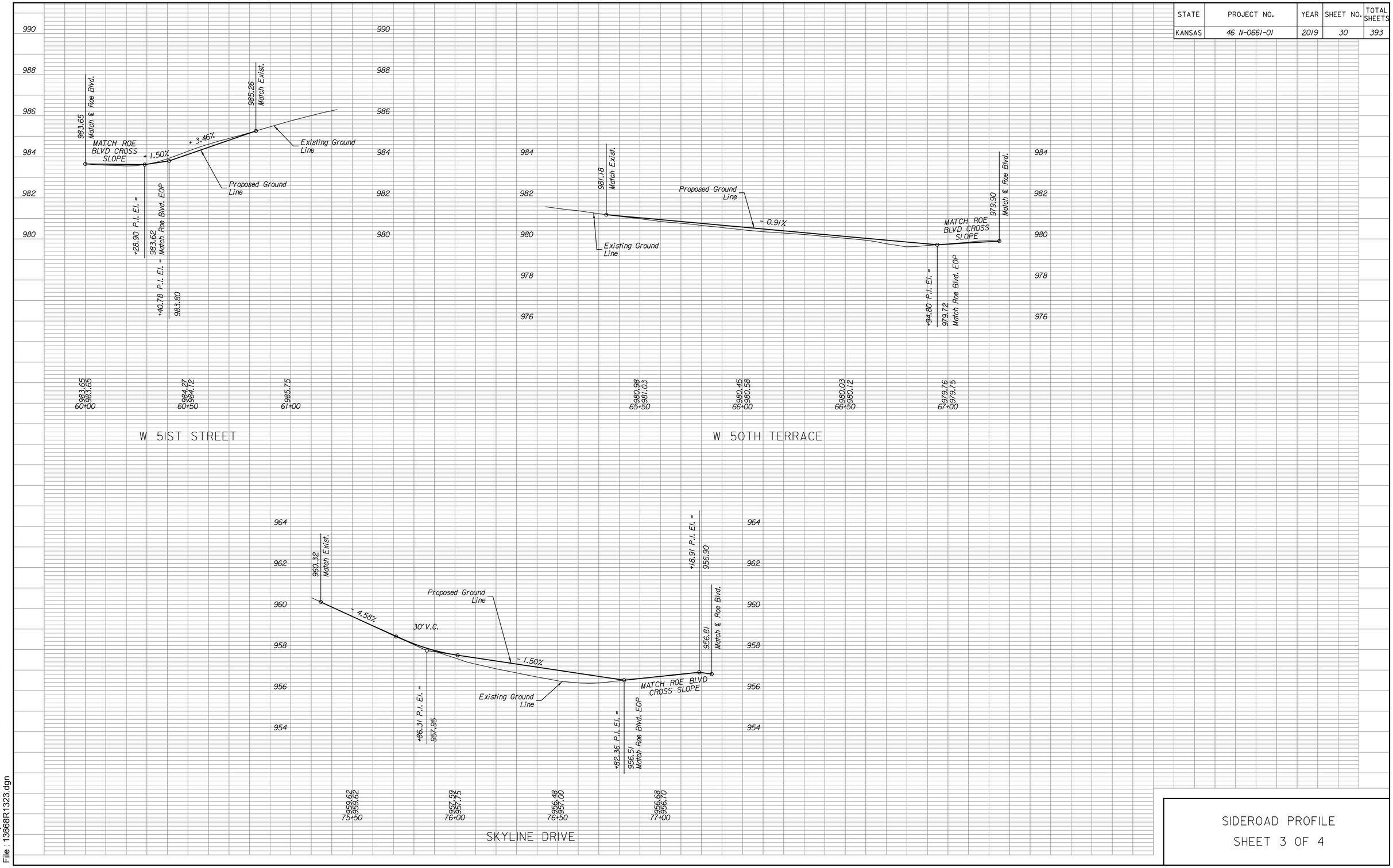




SIDEROAD PROFILE
SHEET 2 OF 4

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Drawn By : lrosenbaum
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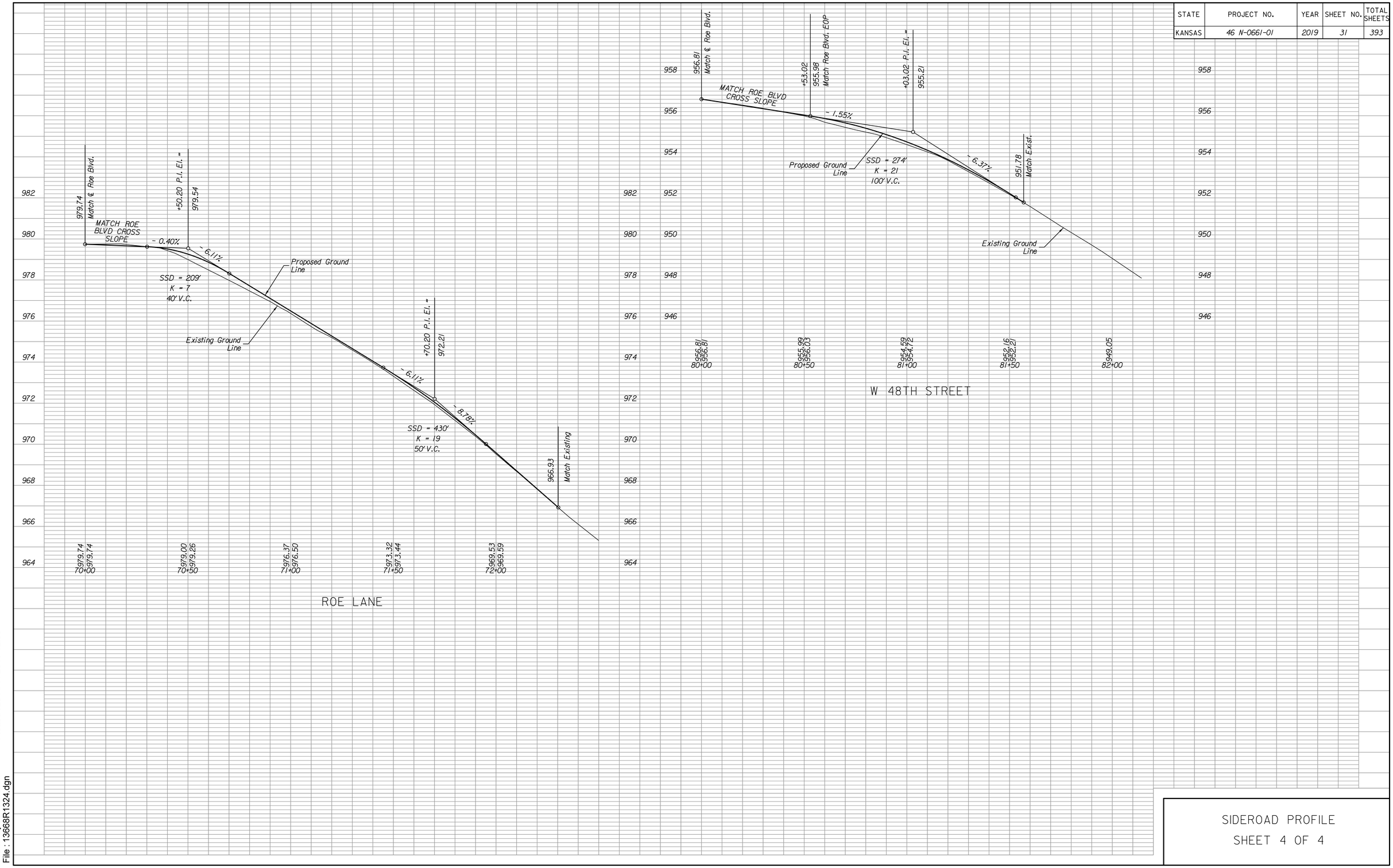
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 30 | 393 |




SIDEROAD PROFILE
SHEET 3 OF 4

Plotted :25-APR-2019 12:53
Drawn By : lrosenbaum
File : 13668R1323.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 31 | 393 |

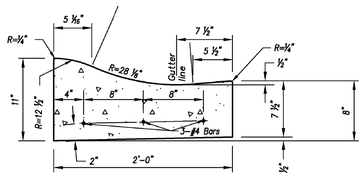



SIDEROAD PROFILE
SHEET 4 OF 4

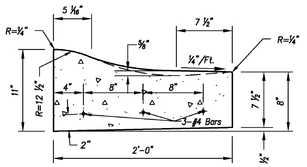
Plotted : 25-APR-2019 12:53
Drawn By : lrosenbaum
File : 13668R1324.dgn

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 32 | 393 |

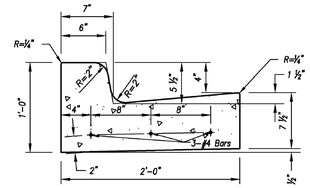



Standard Type "A" Curb

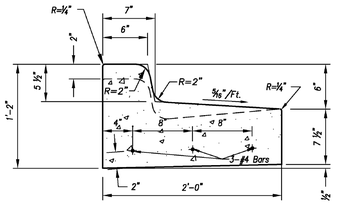



Type "A – Dry" Curb

NOTE: in transitions, water shall flow from the gutter of Type "A" curb to the lip of Type "A–Dry" curb at 0.5% min. slope.

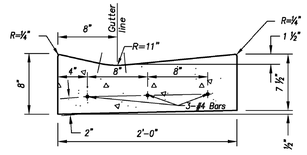



Standard Type "B" Curb

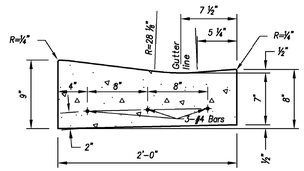



Type "B – Dry" Curb

NOTE: in transitions, water shall flow from the gutter of Type "B" curb to the lip of Type "B–Dry" curb at 0.5% min. slope.

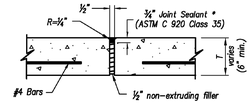



Standard Type "C" Curb*



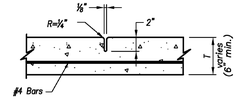

Type "C–1" Curb *
(Use w/ type "A" curb)

* Use for commercial entrances




* – Joint Sealant shall be installed within 48 Hours of curb placement

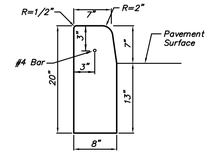
Expansion Joint




Contraction Joint

JOINT DETAILS

Not to Scale




Type "E" Curb

CURB, PROTECTION (KCMMB4K) (SPECIAL)

Curb & Gutter Notes:

1. 1/2" premolded expansion joints shall be placed at points of curvature, curb returns, curb inlets, and at 250' centers. The expansion joints shall be sealed in accordance with the Overland Park Design and Construction Standards Manual (OPDCSM).

2. All concrete used in this work shall meet the requirements of the Overland Park Municipal Code (OPMC). KCMMB 4K Concrete shall be used throughout.

3. For hand-formed curb all reinforcing steel shall be supported on fabricated steel bar supports @ 3'-0" maximum spacing or as directed by the City Engineer.

4. See sidewalk ramp details for typical sidewalk ramp curb & gutter sections.

CURB & GUTTER, COMBINED (KCMMB4K) (SPECIAL)

Not to Scale

Curb & Gutter Notes:

1. 1/2" premolded expansion joints shall be placed at points of curvature, curb returns, curb inlets, and at 250' centers. The expansion joints shall be sealed in accordance with the Overland Park Design and Construction Standards Manual (OPDCSM).

2. All concrete used in this work shall meet the requirements of the Overland Park Municipal Code (OPMC). KCMMB 4K Concrete shall be used throughout.

3. For hand-formed curb all reinforcing steel shall be supported on fabricated steel bar supports @ 3'-0" maximum spacing or as directed by the City Engineer.

4. See sidewalk ramp details for typical sidewalk ramp curb & gutter sections.

CURB & GUTTER, COMBINED (KCMMB4K) (SPECIAL)

Not to Scale

Curb & Gutter Notes:

1. 1/2" premolded expansion joints shall be placed at points of curvature, curb returns, curb inlets, and at 250' centers. The expansion joints shall be sealed in accordance with the Overland Park Design and Construction Standards Manual (OPDCSM).

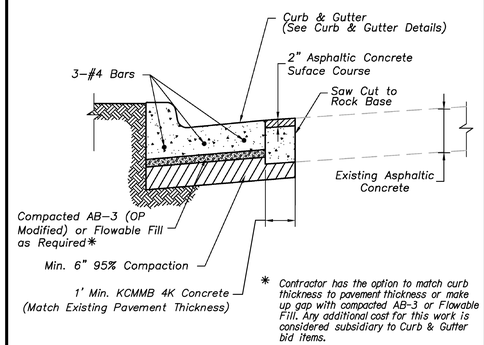
2. All concrete used in this work shall meet the requirements of the Overland Park Municipal Code (OPMC). KCMMB 4K Concrete shall be used throughout.

3. For hand-formed curb all reinforcing steel shall be supported on fabricated steel bar supports @ 3'-0" maximum spacing or as directed by the City Engineer.

4. See sidewalk ramp details for typical sidewalk ramp curb & gutter sections.

CURB & GUTTER, COMBINED (KCMMB4K) (SPECIAL)

Not to Scale




* Contractor has the option to match curb thickness to pavement thickness or make up gap with compacted AB-3 or Flowable Fill. Any additional cost for this work is considered subsidiary to Curb & Gutter bid items.

ASPHALT ROADWAY
CURB REPLACEMENT DETAIL

Year 2018 Edition

REVISIONS:
07/01/03 Concrete Mix Designation;
Jan. 2006 Notes
Feb. 2008 OPMC Reference

RELATED ORDINANCES:
OPMC Title 13

OVERLAND PARK
KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

CONCRETE CURB WITH ASPHALT PAVEMENT
(COLLECTOR AND RESIDENTIAL STREETS)

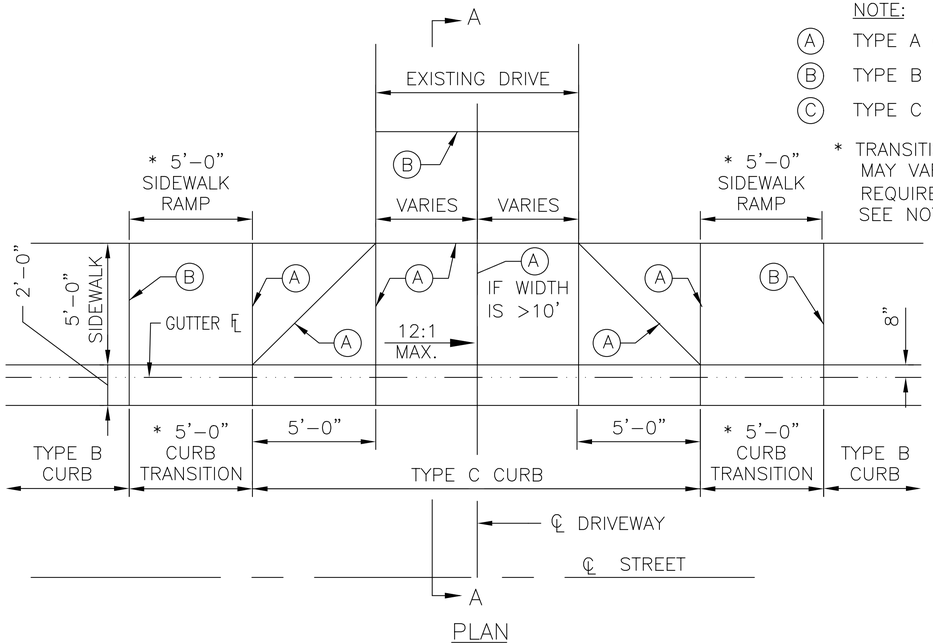
DATE: 09/28/99 SHEET: 10

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WEB SITE ADDRESS: http://www.opkansas.org/Doing-Business/Construction-Details

CURB AND GUTTER DETAILS

Plotted : 25-APR-2019 12:53
Drawn By : lrosenbaum
File : 13668R2101.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 33 | 393 |




PLAN

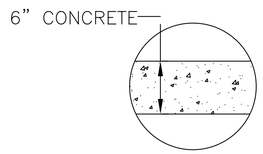
NOTE:

(A) TYPE A (CONTRACTION JOINT)

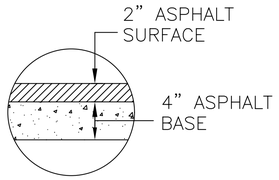
(B) TYPE B (ISOLATION JOINT)

(C) TYPE C (CONSTRUCTION JOINT)

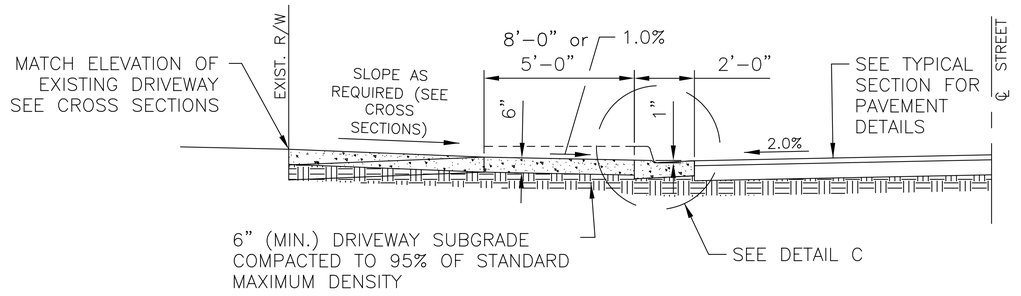
* TRANSITION AND RAMP LENGTH MAY VARY TO MEET ADA REQUIREMENTS UP TO 15' SEE NOTE 8.




CONCRETE DRIVE DETAIL

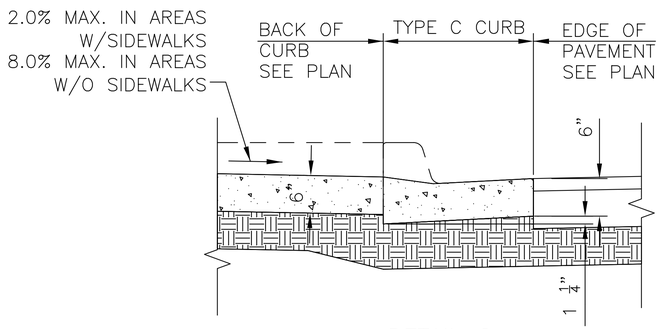



ASPHALT DRIVE DETAIL




SECTION A–A

RESIDENTIAL DRIVEWAY




DETAIL C

DRIVEWAY NOTES:

1. DRIVEWAYS APRONS SHALL BE 6" THICK KCMMB 4K CONCRETE. MATCH EXISTING DRIVEWAY TYPE BEYOND SIDEWALK. SEE SCHEDULE. ALL SIDEWALK THROUGH DRIVES AND SIDEWALK RAMPS SHALL BE 6" THICK KCMMB 4K CONCRETE AND PAID AS 6" DRIVEWAY.
2. ALL JOINTS SHALL BE AT RIGHT ANGLES TO THE ALIGNMENT OF THE CURBING AND SIDEWALK UNLESS OTHERWISE NOTED.
3. THE CONCRETE SURFACES OF CURB AND GUTTER, SIDEWALK AND DRIVEWAYS SHALL BE FINISHED WITH A FLOAT AND BROOMED. ALL EDGES SHALL BE FINISHED WITH A SMOOTH EDGING TOOL TO GIVE "PICTURE FRAME" APPEARANCE. SIDEWALK THROUGH A DRIVEWAY SHALL BE BROOMED AS SIDEWALK, NOT DRIVEWAY.
4. EXPANSION JOINT FILLER AND JOINT SEALING COMPOUND SHALL CONFORM TO STANDARD SPECIFICATIONS.
5. CONTRACTION JOINTS SHALL BE SPACED AT 12' MAX., AND AS DIRECTED BY THE ENGINEER, IN BOTH DIRECTIONS.
6. CURB TRANSITIONS ON DRIVEWAY FLARES ARE CONSIDERED PART OF DRIVEWAY AND ARE TO BE REPLACED FROM END OF RAMP TO END OF RAMP.
7. SIDEWALK RAMPS ON THE HIGH SIDE OF THE DRIVEWAY ARE TO NOT EXCEED 8.3%. IF RAMPS EXCEED 8.3% A MAXIMUM OF 15.0 LF OF RAMP NEEDS TO BE REPLACED TO MEET ADA REQUIREMENTS.

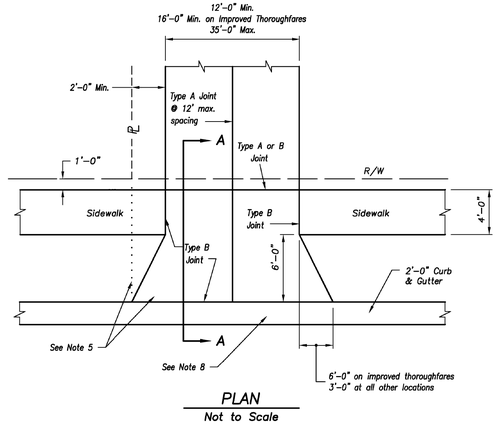
RESIDENTIAL DRIVEWAY DETAILS

Plotted : 25-APR-2019 12:54

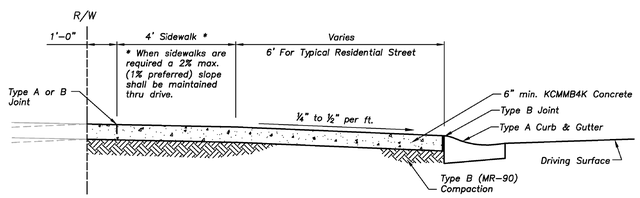
Drawn By : lrosenbaum
File : 13668R2101.dgn

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 34 | 393 |




PLAN
Not to Scale

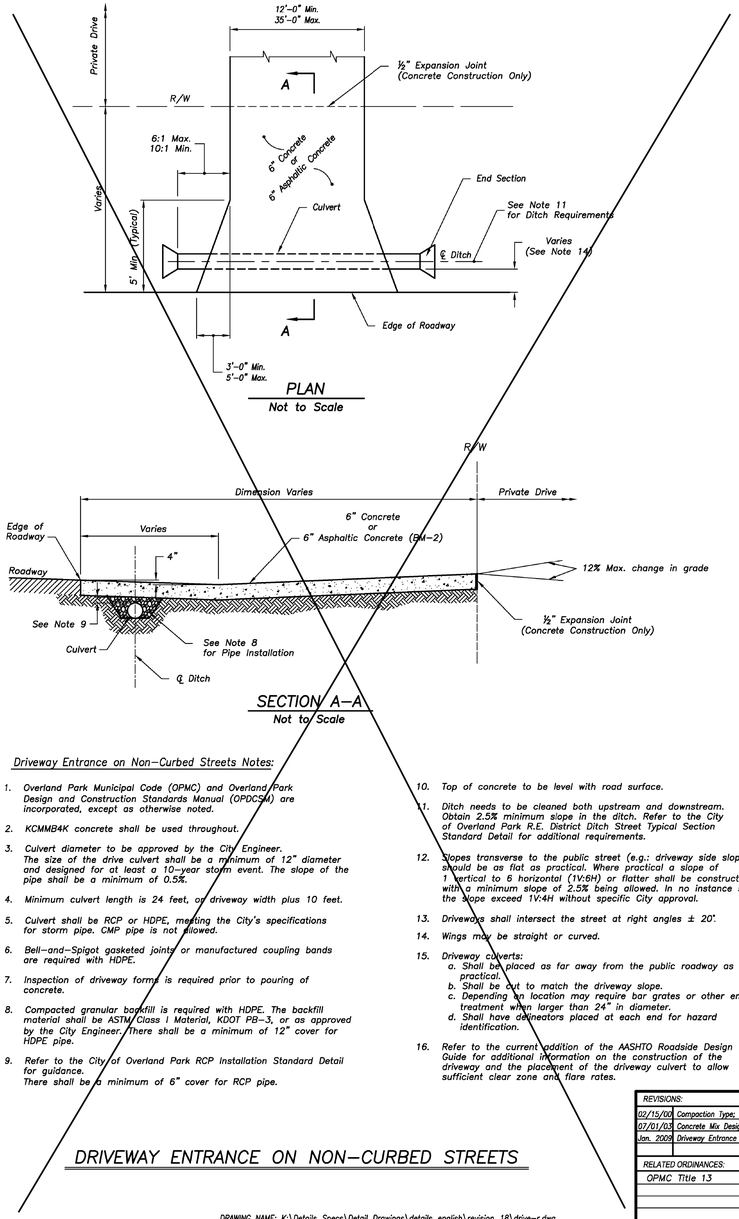



SECTION A–A
Not to Scale

Residential Driveway Notes:

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. KCMMB4K Concrete shall be used throughout.
3. Sidewalk is located one foot from the right-of-way line, therefore position of sidewalk in relation to the 3'-0" x6'-0" transition may vary.
4. Grading within the right-of-way to be as per the Typical Section and Plans.
5. Driveway wing shall not extend past side property line extension. Driveway wing dimensions may require modification to ensure encroachment on adjacent property does not occur.
6. Concrete pavement shall be jointed with Type A joints. No jointed slab shall exceed 12' x 12'.
7. Sidewalk, abutting driveway entrance, must be replaced if the elevation of new driveway entrance does not match that of existing sidewalk.
8. On thoroughfares with Type B curb, the depressed driveway curb may extend into the wing for the maximum of 4' or as approved by the City Engineer.
9. Driveways shall intersect the street at right angles ± 20'.
10. Wings may be straight or curved.

RESIDENTIAL DRIVEWAY



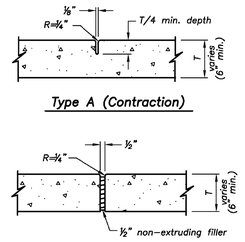

PLAN
Not to Scale

SECTION A–A
Not to Scale

Driveway Entrance on Non-Curbed Streets Notes:

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. KCMMB4K concrete shall be used throughout.
3. Culvert diameter to be approved by the City Engineer. The size of the drive culvert shall be a minimum of 12" diameter and designed for at least a 10-year storm event. The slope of the pipe shall be a minimum of 0.5%.
4. Minimum culvert length is 24 feet, or driveway width plus 10 feet.
5. Culvert shall be RCP or HDPE, meeting the City's specifications for storm pipe. CMP pipe is not allowed.
6. Bell-and-Spigot gasketed joints or manufactured coupling bands are required with HDPE.
7. Inspection of driveway forms is required prior to pouring of concrete.
8. Compacted granular backfill is required with HDPE. The backfill material shall be ASTM Class I Material, KDOT PB-3, or as approved by the City Engineer. There shall be a minimum of 12" cover for HDPE pipe.
9. Refer to the City of Overland Park RCP Installation Standard Detail for guidance. There shall be a minimum of 6" cover for RCP pipe.
10. Top of concrete to be level with road surface.
11. Ditch needs to be cleaned both upstream and downstream. Obtain 2.5% minimum slope in the ditch. Refer to the City of Overland Park R.E. District Ditch Street Typical Section Standard Detail for additional requirements.
12. Slopes transverse to the public street (e.g.: driveway side slopes) should be as flat as practical. Where practical a slope of 1 vertical to 6 horizontal (1V:6H) or flatter shall be constructed with a minimum slope of 2.5% being allowed. In no instance shall the slope exceed 1V:4H without specific City approval.
13. Driveways shall intersect the street at right angles ± 20'.
14. Wings may be straight or curved.
15. Driveway culverts:
    a. Shall be placed as far away from the public roadway as practical.
    b. Shall be cut to match the driveway slope.
    c. Depending on location may require bar grates or other end treatment when larger than 24" in diameter.
    d. Shall have delineators placed at each end for hazard identification.
16. Refer to the current addition of the AASHTO Roadside Design Guide for additional information on the construction of the driveway and the placement of the driveway culvert to allow sufficient clear zone and flare rates.

DRIVEWAY ENTRANCE ON NON-CURBED STREETS




JOINT DETAILS
Not to Scale

DRAWING NAME: K:\Details_Specs\Detail_Drawings\details_english\revision_18\drive-r.dwg
WEB SITE ADDRESS: http://www.opkansas.org/Doing-Business/Construction-Details

Year 2018 Edition

| REVISIONS: | |
|---|---|
| 02/15/00 | Compaction Type; Notes; |
| 07/01/03 | Concrete Mix Designation; |
| Jan. 2009 | Driveway Entrance on Non-Curbed Streets; |
| | |
| RELATED ORDINANCES: | |
| OPMC Title 13 | |

OVERLAND PARK KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

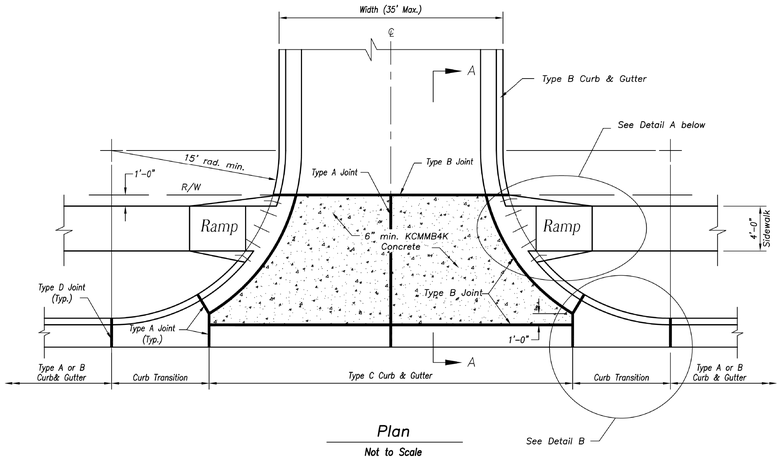
RESIDENTIAL DRIVE DETAIL

DATE: 09/28/99 SHEET: 18

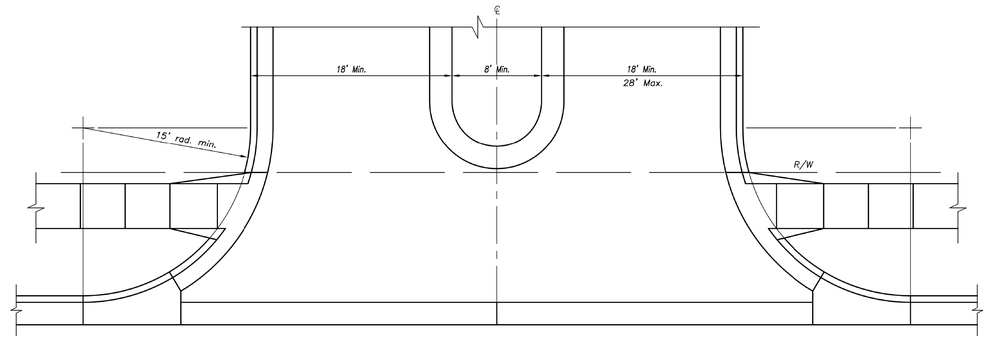
RESIDENTIAL DRIVEWAY DETAILS

Plotted : 25-APR-2019 12:54
Drawn By : lrosenbaum
File : 13668R2101.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 35 | 393 |

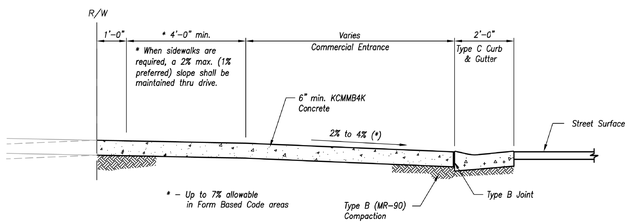



Plan
Not to Scale

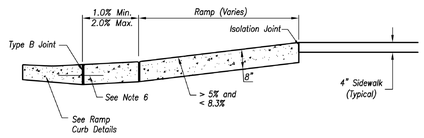



Plan
Not to Scale

## COMMERCIAL ENTRANCE WITH MEDIAN




Section A–A
Not to Scale




Section B–B (*)
* – See Note 4 for application of Detectable Warning Surface
Not to Scale



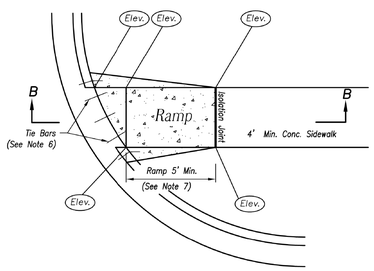

Type A (Contraction)

Type B (Isolation)

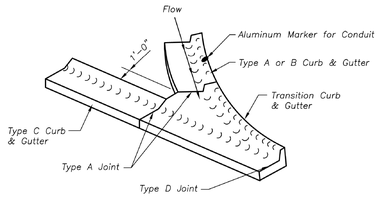
Type C (Construction)

Type D (Expansion)

## JOINT DETAILS
Not to Scale




Detail A
Not to Scale




Detail B
Not To Scale

## COMMERCIAL ENTRANCE DETAIL

Commercial Drive Notes:

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. KCMMB4K Concrete shall be used throughout.
3. Concrete pavement shall be jointed with Type A joints. No jointed slab shall exceed 12' x 12'.
4. Detectable warning surfaces are not required at non-signalized entrances.
5. ADA compliance will be measured at points labeled (Elev.) .
6. Install 18" tie bars #4 epoxy coated @ 18" o.c. and through wings as shown.
7. Sidewalk Ramp shall be lengthened to provide ADA compliant slope, but need not exceed 15'.
8. ADA maximum ramp slope = 1"/Ft. ADA maximum cross slope = 2%.
9. Top of curb elevations shall be shown at quarter points and curb returns.
10. Any additional steel reinforcement shall be approved by the City Engineer.
11. See Curb Replacement Detail for additional requirements.

DRAWING NAME: K:\Details_Specs\Detail_Drawings\details_english\revision_18\drive-c.dwg
WEB SITE ADDRESS: http://www.opkansas.org/Doing-Business/Construction-Details

Year 2018 Edition

| REVISIONS: | |
|---|---|
| Jan. 2005 | ADA Compliance; |
| Jan. 2009 | Joint Locations; Miscellaneous; |
| Jan. 2017 | Updated ADA Compliance; |
| | |
| RELATED ORDINANCES: | |
| OPMC Title 13 | |

OVERLAND PARK KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

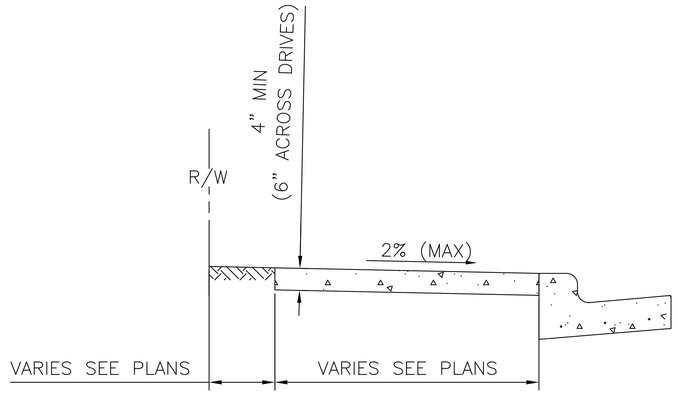
COMMERCIAL ENTRANCE DETAIL

DATE: 08/10/98 SHEET: 17

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Drawn By : lrosenbaum
File : 13668R2101.dgn

COMMERCIAL ENTRANCE DETAILS

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 36 | 393 |

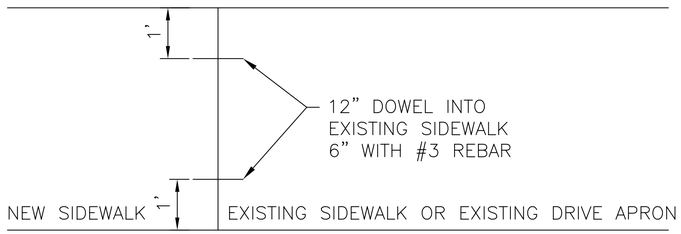



## STANDARD SIDEWALK

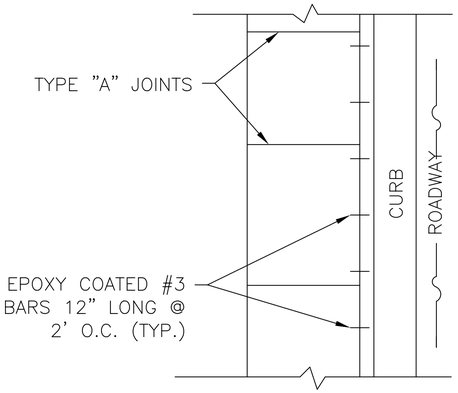
NOTES:

1. TYPE "A" JOINT SPACING 4'–0" CENTER TO CENTER ON WIDTH ALONG SIDEWALK. 5'–0" ON 5' WIDE SIDEWALKS.

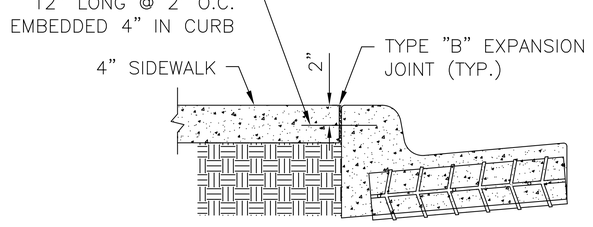
2. TYPE "B" JOINTS WHERE WALK ABUTS JUNCTION OF EXISTING WALK, CONCRETE CURBS, DRIVEWAYS, AND SIMILAR STRUCTURES, AND 250' CENTERS MAXIMUM.




## NEW TO EXISTING SIDEWALK




PLAN




PROFILE

TYP. WHERE SIDEWALK IS NEXT TO CURB.

## CURB ADJACENT TO SIDEWALK DETAIL

SIDEWALK
DETAILS

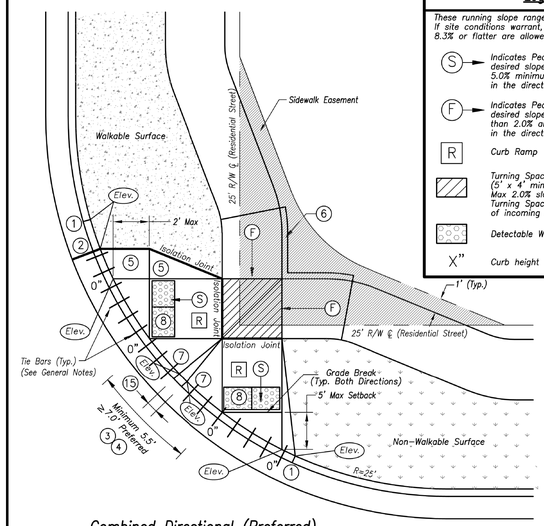
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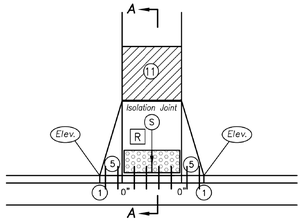
## Legend

*These running slope ranges shall be the starting point. If site conditions warrant, running slopes up to 8.3% or flatter are allowed.*

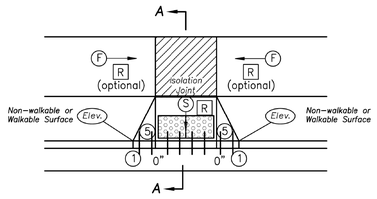
- (S) → *Indicates Pedestrian Ramp – desired slope between 5.0% minimum and 8.3% maximum in the direction shown.*
- (F) → *Indicates Pedestrian Ramp – desired slope greater than 2.0% and less than 5.0% in the direction shown.*
- R — *Curb Ramp*
- *Turning Space – 4' x 4' min. (5' x 4' min. when constrained). Max 2.0% slope in all directions. Turning Spaces shall be full width of incoming PARs*
- *Detectable Warning Plates*
- X" — *Curb height*



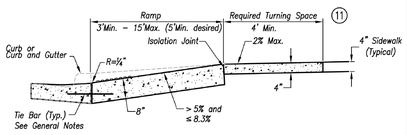

### Combined Directional (Preferred)



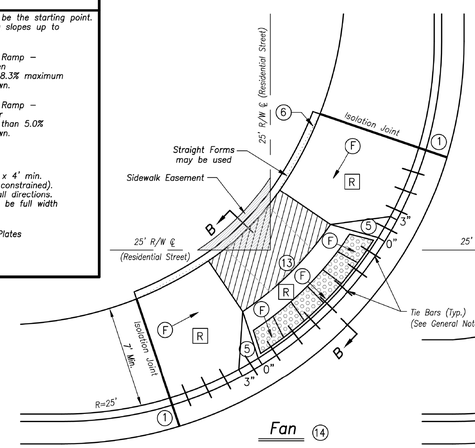

### Perpendicular



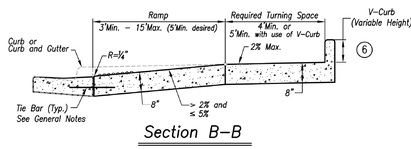

### Mid-Block



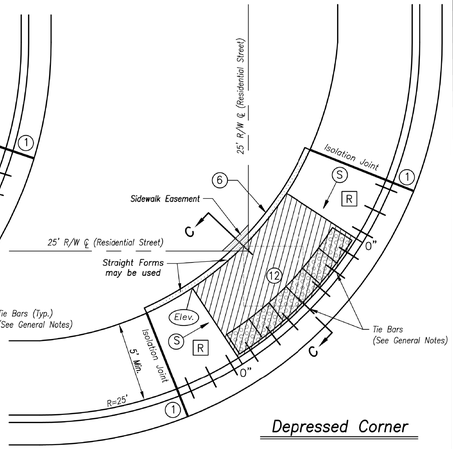

### Section A–A
### Perpendicular/Mid-Block



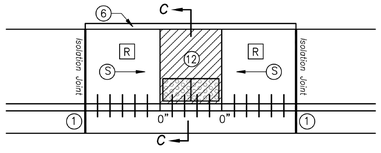

### Fan (14)



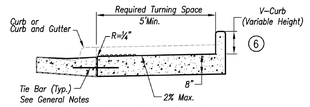

### Section B–B
### Fan



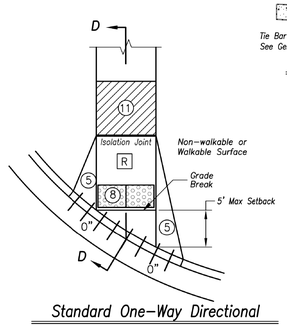

### Depressed Corner



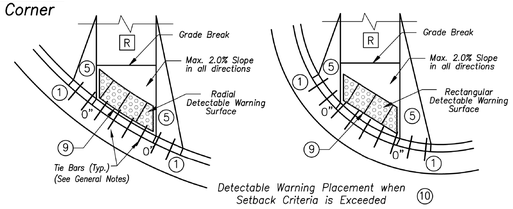

### Parallel




### Section C–C
### Parallel/Depressed Corner

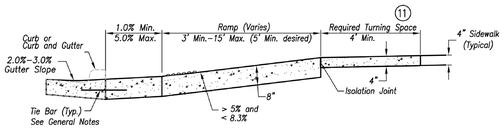



### Standard One-Way Directional




Detectable Warning Placement when Setback Criteria is Exceeded (10)

### One-Way Directional with Detectable Warning at Back of Curb




### Section D–D

## Ramp Element Notes:

1. *Match full curb height.*
2. *3" high curb when using a 3' long ramp. 4" high curb when using a 4' or longer ramp.*
3. *3" minimum curb height (5.5' min. distance required between domes); 4" preferred (7' min. distance required between domes).*
4. *The divider between the ramps should not be in the path of travel for combined directional ramps. If this occurs, modify the ramp location or switch ramp to a fan/depressed corner.*
5. *See Sht. 32_b for flare details.*
6. *When adjacent to grass, grading shall always be used when feasible. V-curb, if used, shall be placed outside the sidewalk limits when right of way allows. When grading exceeds 4:1 within right of way, use V-curb. When adjacent to parking lots, tapers should be used over V-curb to reduce tripping hazard and facilitate snow and ice removal.*
7. *8% to 10% walkable flare. If area between ramps is greater than 15 s.f., grass may be installed.*
8. *Place domes at the back of curb when allowable setback criteria is exceeded.*
9. *Rectangular detectable warnings may be setback up to 9" from the back of curb with corners set 2" from back of curb. If 9" setback is exceeded, use radial detectable warnings. Radial detectable warnings shall be setback up to 6" maximum from the back of curb.*
10. *For directional ramps with the detectable warnings placed at the back of curb, the detectable warnings shall cover the entire width of the walk/path.*
11. *A turning space is not required at the top of a Perpendicular or Standard One-Way Directional curb ramp if there is no change in direction at the top of the ramp.*
12. *Detectable warnings may be part of the 4' x 4' min. landing area if it is not feasible to construct the landing outside of the detectable warning area.*
13. *A 7' min top radius grade break required to be constructible.*
14. *"S" slopes on fans shall only be used when "F" slopes have been evaluated and deemed impractical.*
15. *6" minimum length. See Detectable Edge with Curb and Gutter detail.*

## General Sidewalk & Sidewalk Ramp Notes:

1. *Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted. KCMMB4K Concrete shall be used throughout.*
2. *Sidewalk ramp location determined from the intersection of the extension of back of sidewalk and back of curb & gutter.*
3. *Positive flow line drainage shall be maintained through the Pedestrian Access Route (PAR). No ponding shall be present in the PAR. Any vertical lip that occurs at the flow line shall not be greater than ¼ inch.*
4. *Turning Spaces shall be located anywhere the PAR changes direction, and if the approaching walk is inverse grade.*
5. *The maximum cross slope requirements for perpendicular curb ramps and blended transitions adjacent to pedestrian street crossings are as follows: At Yield or Stop Control – 2%; Without Yield or Stop Control, or with Traffic Signals – 5%; At Midblock – no greater than the street grade.*
6. *When not adjacent to pedestrian street crossings, PAR and and ramp cross-slope 1% desired, 2% maximum.*
7. *Contraction joints shall be constructed along all grade breaks and at the tops of concrete flares adjacent to walkable surfaces.*
8. *All grade breaks within the PAR shall be perpendicular to the path of travel.*
9. *All ramp types should have a minimum of 3' ramp length.*
10. *Detectable warnings shall continuously extend for a minimum of 24" in the path of travel. Detectable warning to cover the entire width of sidewalk and shared-use paths. Arc length of radial detectable warnings should not be greater than 20 feet.*
11. *Rectangular detectable warnings shall be setback 2" minimum to 9"maximum from the back of curb. See (9) for information regarding rectangular detectable warning placement. Radial detectable warnings shall be setback 2" minimum to 6" maximum from the back of curb.*
12. *Elevations shall be provided at all corners of sidewalk slabs which compose the landings or ramps and at all corners of one additional sidewalk panel along the sidewalk in addition to the points labeled (Elev.) on these details. Slope between these points shall be calculated and shown on the plans. Chord distance from PC & PT to fully depressed curb section of curb return shall be shown on the plans. Slope shall be shown for the existing or proposed edge of pavement where ramps connect.*
13. *Longitudinal joint spacing and Landing length to match width of sidewalk (4' Min.).*
14. *Isolation joints shall be placed where walk abuts driveways and similar structures, and 250' centers max.*
15. *Install 18" tie bars #4 epoxy cooted @ 18" o.c. and through wings as shown.*
16. *Sidewalk Ramp shall be lengthened as needed to provide compliant slope (8.3% Max.) but need not exceed 15' regardless of resulting slope.*
17. *Curb depression at ramp opening shall be staked prior to curb construction.*
18. *See Curb Replacement Details for additional requirements.*
19. *No casting or utility boxes shall be allowed in ramps or turning spaces. Contractor shall be responsible for adjusting utility boxes and coordinating with utilities to obtain ramp and sidewalk compliance.*
20. *Do not scale these drawings for dimensions.*

DRAWING NAME: K:\Details_Specs\Detail_Drawings\details_english\revision_18\sw-ramp_page 1.dwg
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OVERLAND PARK KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

# SIDEWALK & SIDEWALK RAMP DETAILS

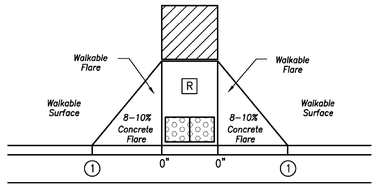
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SIDEWALK AND SIDEWALK RAMP DETAILS

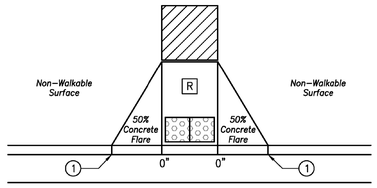
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Drawn By : lrosenbaum
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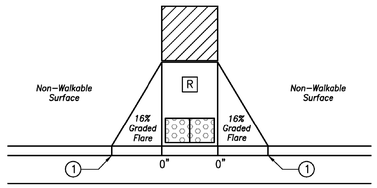
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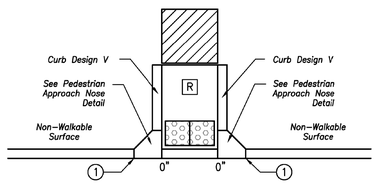

Paved Flares Adjacent to Walkable Surface




Paved Flares Adjacent to Non–Walkable Surface

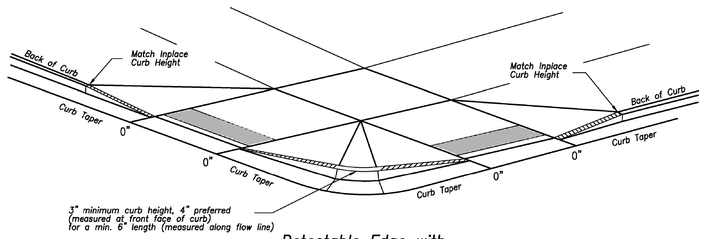



Graded Flares

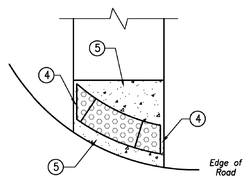



Returned Curb ③

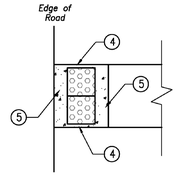
Typical Side Treatment Options ② ⑧




Detectable Edge with Curb and Gutter ⑥

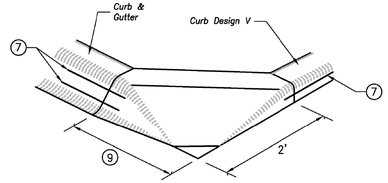


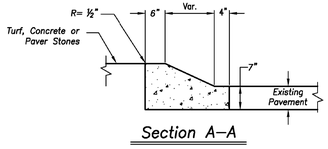

Radial Detectable Warning



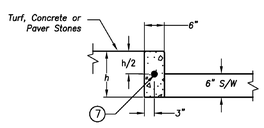

Rectangular Detectable Warning

Detectable Edge without Curb and Gutter

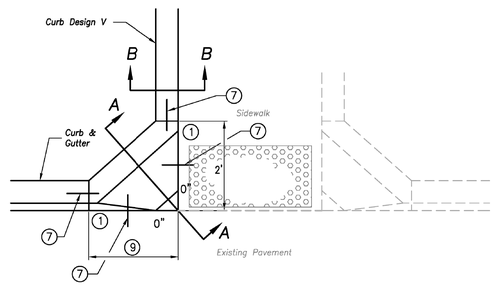



Section A–A




Section B–B




Pedestrian Approach Nose Detail

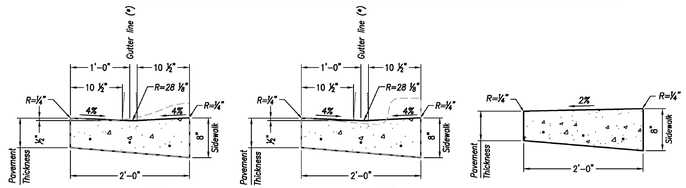
(For Returned Curb Side Treatment)

## Ramp Element Notes

A walkable surface is defined as a paved surface adjacent to a curb ramp without raised obstacles that could mistakenly be traversed by a user who is visually impaired.

Concrete flare lengths adjacent to non–walkable surfaces should be less than 8' long measured along the ramps from the back of curb.

1. Full curb height.
2. Side treatments are applicable to all ramp types and should be implemented as needed as field conditions dictate. The engineer shall determine the ramp side treatments based on maintenance of both roadway and sidewalk, adjacent property considerations, and mitigating construction impacts.
3. Typically used for medians and islands.
4. When no concrete flares are proposed, maintain 2" between edge of domes and edge of concrete.
5. If no curb and gutter is placed in rural sections, detectable warnings shall be placed 1' from the edge of bituminous roadway and/or bituminous shared–use path to provide visual contrast.
6. All constructed curbs must have a continuous detectable edge for the visually impaired. This detectable edge requires detectable warnings wherever there is zero–inch high curb. Curb tapers are considered a detectable edge when the taper starts within 2" of the edge of the detectable warnings and uniformly rises to a 3–inch minimum curb height. Any curb not part of a curb taper and less than 3 inches in height is not considered a detectable edge and therefore is not compliant with accessibility standards.
7. Drill and epoxy 1 – #4 12" long reinforcement bar (epoxy coated) with 3" min. cover. Reinforcement bars are not needed if the approach nose is poured integral with the curb. Use 2 – #4 bars when curb height exceeds 6".
8. Side treatment examples shown are when the initial landing is approximately level with the full height curb (i.e. 6' long ramp for 6" high curb). When the initial landing is more than 1" below full height curb refer to sheets 1 & 2 to modify the curb height tapers and maintain positive boulevard drainage.
9. 3' for medians and splitter islands. Nose can be reduced to 2' on free right islands.




Use With Type "A" Curb

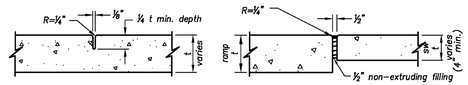
Use With Type "B" Curb

Use with Type "A – Dry" or Type "B – Dry" Curb

* – 0.5% minimum positive slope in gutter line shall be maintained through transition from standard curb to ramp curb

Street Curb Detail at Ramp

Note: See Standard Curb Detail for additional requirements




Contraction Joint

Isolation Joint

Joint Details

### Legend

- R — Curb Ramp
- Turning Space – 4' x 4' min. (5' x 4' min. when constrained). Max 2.0% slope in all directions. Turning Spaces shall be full width of incoming PARs
- Detectable Warning Plates
- X" — Curb height

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SIDEWALK & SIDEWALK RAMP DETAILS

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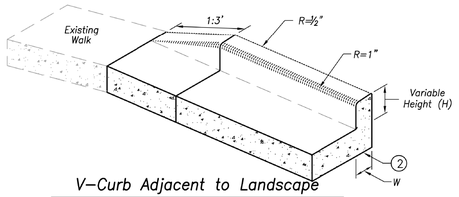
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SIDEWALK AND SIDEWALK RAMP DETAILS

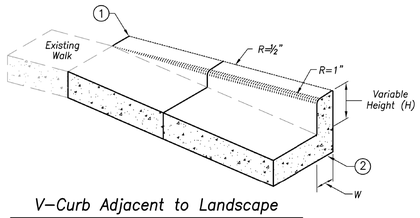
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V–Curb Adjacent to Landscape

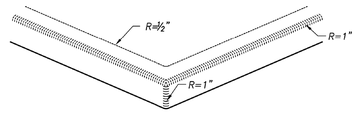
Curb within Sidewalk Limits



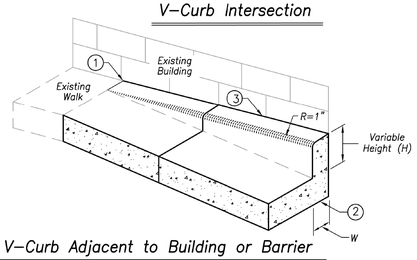

V–Curb Adjacent to Landscape

Curb outside Sidewalk Limits

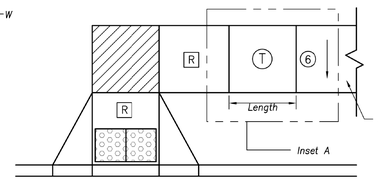
| Concrete Curb Design V | |
|---|---|
| Curb Height H | Curb Width W |
| <6" | 4'' |
| 6" – 9" | 6'' |
| 9" – 12" | 6'' w/ reinforcement |

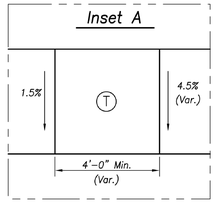



V–Curb Intersection

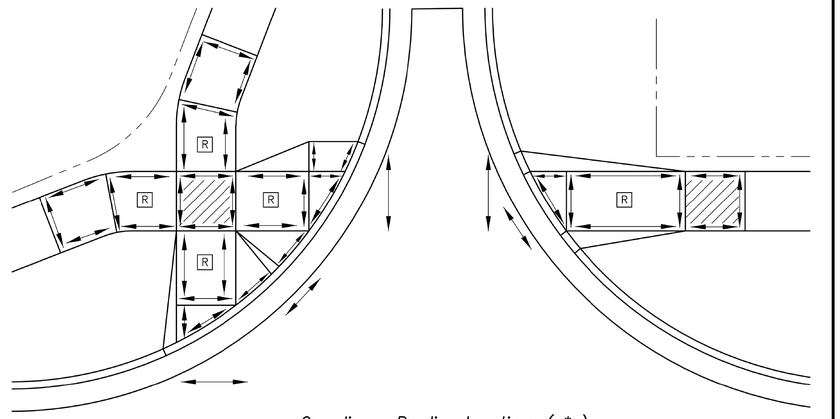



V–Curb Adjacent to Building or Barrier



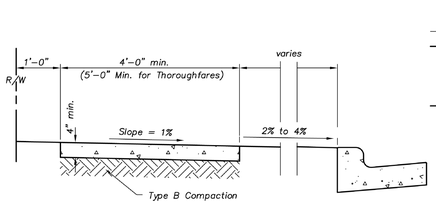




Transition Panel ④⑤

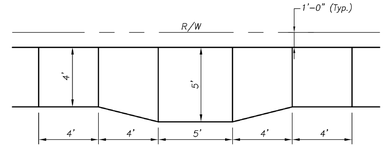



Compliance Reading Locations ( * )

* – Measurements shall be taken in accordance with current ADA requirements.

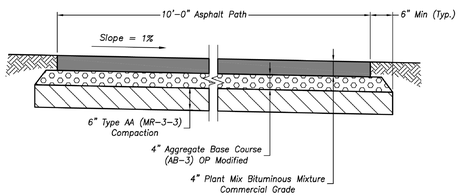



Standard Sidewalk

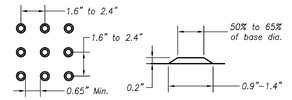



Wheelchair Passing Space

Wheelchair Passing Space to be Constructed where Length of 4' Wide Sidewalk Exceeds 200'.




Standard Asphalt Bike/Hike Path




Truncated Dome Dimensions

## Ramp Element Notes:

A walkable flare is an 8–10% concrete flare that is required when the flare is adjacent to a walkable surface, or when the pedestrian path of travel of a push button traverses the flare.

Where right–of–way allows, use of V curb should be minimized. Grading adjacent turf or sloping adjacent pavement is preferred. 6:1 grading preferred, 4:1 maximum. On rehabilitation projects if 4:1 is exceeded within right of way, V–curb should be used.

V–curb shall be placed outside the sidewalk limits when right of way allows.

V–curb next to building shall be a 4" width and shall match previous top of sidewalk elevations.

All V–curb contraction joints shall match concrete walk joints.

Some detectable warning products require a concrete border for proper installation. The concrete border should not exceed 2 inches.

1. End tapers at transition section shall match inplace sidewalk grades
2. All V curb shall match bottom of adjacent walk.
3. Edge between new V–curb and inplace structure shall be sealed and bond breaker shall be used between existing structure and placed V–curb.
4. The max. rate of cross slope transitioning is 1 linear foot of sidewalk per half percent cross slope. When PAR width is greater than 6' or the running slope is greater than 5%, double the calculated transition length.
5. Transition panels are to only be used after the ramp,.
6. Existing cross slope.

## Cast Iron Detectable Warning Plate Notes:

1. See approved Material List for pre–approved products.
2. Detectable Warning Plates placed radially behind the curb shall be Radius Plates.
3. Detectable Warning Plates shall be installed per manufacturer's recommendations.
4. Detectable Warning Surface to extend a minimum of 2' in direction of travel.

## Sidewalk Ramp Elements General Requirements:

RAMP (Required to transition elevation): Max Running Slope – 8.33%
Max Cross Slope – 2% (1% preferred)
Min Width – 4'

TURNING SPACE (Required to change direction of travel): Max Running Slope – 2%
Max Cross Slope – 2% (1% preferred)
Min Width – 4'

DETECTABLE WARNING SURFACE: Width equals Ramp Opening Width @ Curb
Min Length – 2'
Domes should be aligned with direction of travel.

## Legend

- R — Curb Ramp
- T — Transition panel(s) – to be used for transitioning the cross–slope of a ramp to the existing walk cross–slope. Rate of transition should be 0.5% per 1 linear foot of walk. See this sheet for additional information.
- Turning Space – 4' x 4' min. (5' x 4' min. when constrained). Max 2.0% slope in all directions. Turning Spaces shall be full width of incoming PARs
- Detectable Warning Plates

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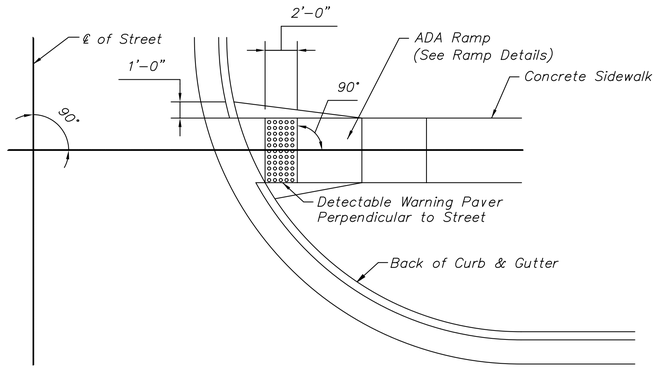
SIDEWALK & SIDEWALK RAMP DETAILS

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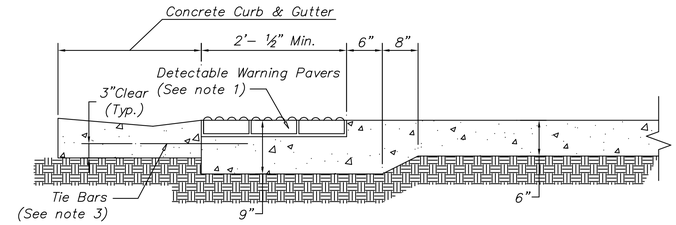
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SIDEWALK AND
SIDEWALK RAMP DETAILS

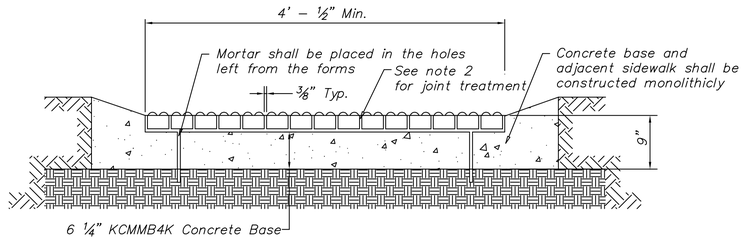
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TYPICAL PAVER PLACEMENT
ON CURB RETURN




RAMP PROFILE




RAMP SECTION
DETECTABLE WARNING PAVER INSTALLATION

ADA RAMP GENERAL NOTES:

| TYPE | LEGEND | RUNNING SLOPE | CROSS SLOPE | RUNNING LENGTH | WIDTH (PERPENDICULAR TO TRAVEL) |
|---|---|---|---|---|---|
| RAMP | R | 1" / Ft. Max. (1:12 Max.) | 2% Max. | 15' Max. | 36" Min. or Width of Existing Sidewalk. Whichever is Greater. |
| LANDING | L | 2% Max. | 2% Max. | 48" Min. | 48" Min. |
| TRANSITION | T | 1" / Ft. Max. (1:12 Max.) | 2% Max. | Varies | 48" Min. |
| DETECTABLE WARNING PAVER | P | 1" / Ft. Max. (1:12 Max.) | 2% Max. | 24" | 48" Min. |

1. All Sidewalk Ramp Layouts Shall be Approved by the City Before Construction
2. Location of Ramp May Vary and must be Approved in field by City.
3. Location of Landing May Vary based on Pedestrian Button location and must be Approved in field by City.
4. Gratings, Access Covers, and Other Appurtenances shall not be located on Curb Ramps, Landings, Transitions, and Gutter areas.
5. All Landings, Transitions, and Detectable Warning Paver areas shall be Perpendicular to Street Curb.
6. See Sidewalk ADA Ramp Details.
7. See Detectable Warning Paver Details.
8. See Curb Details.

All concrete shall be KCMMB 4k concrete.

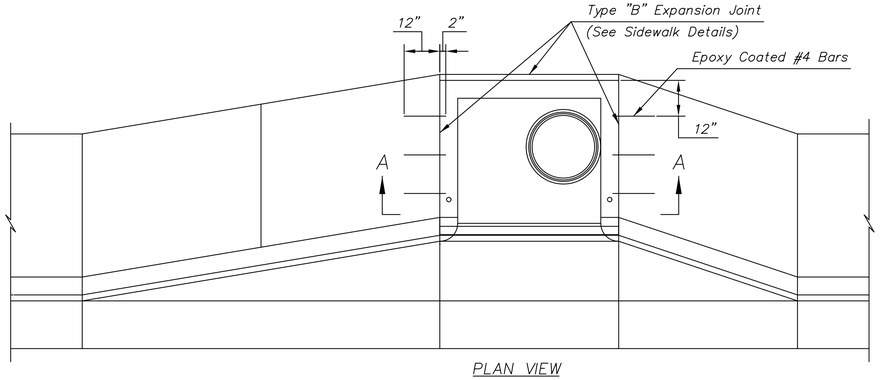
PAVER NOTES:

1. Endacott Detectable Warning Pavers 2 ¼" X 3 ⅝" X 7 ⅝" Soldier Centers Manganese Ironspot.
2. Block out Detectable Warning Area. Set bricks with Type M–Mortar, Type S–Lime, and Masonry Sand. 1 part Portland Cement, ¼ part Lime, 3 ¾ parts Sand. Grout joints tool flush main brick surface to be flush with concrete walk.
3. Install 18" Tie Bars, #4 Epoxy coated at 12" O.C.
4. The bricks shall be saw cut only and any brick shall not be less than 25% of a full brick. Any partial truncated dome shall be removed.
5. Detectable warning surface to extend a minimum of 2 ft. in direction of travel.

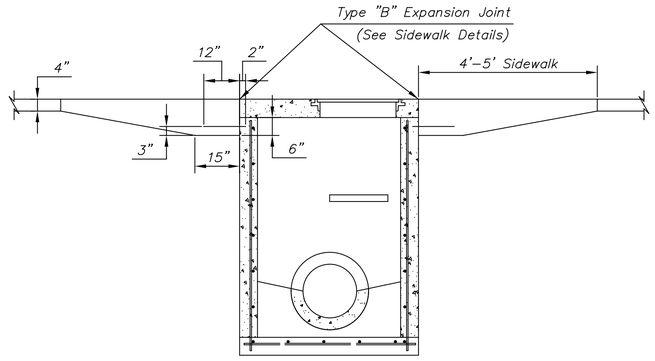
DETECTABLE WARNING
SURFACE DETAILS

Plotted : 25-APR-2019 12:55
Drawn By : lrosenbaum
File : 13668R2101.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 41 | 393 |

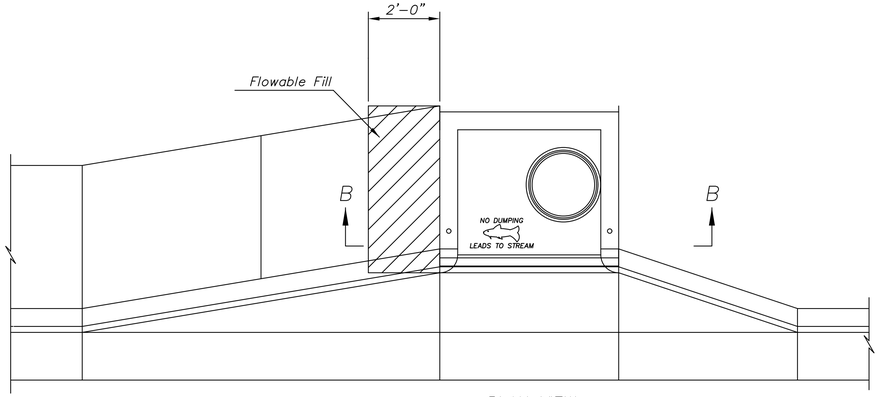



PLAN VIEW

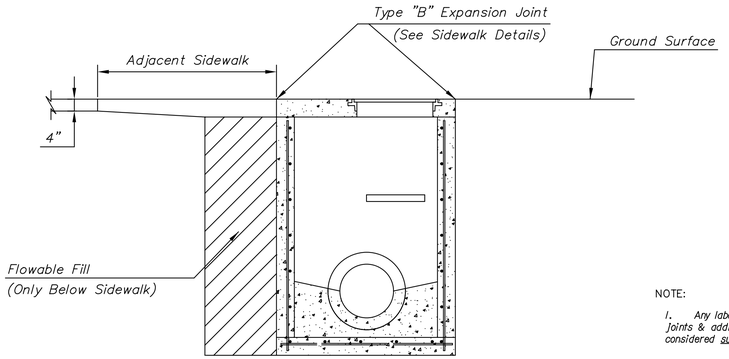



SECTION A-A

SIDEWALK AT EXISTING DRAINAGE STRUCTURE




PLAN VIEW




SECTION B-B

SIDEWALK ADJACENT TO NEW DRAINAGE STRUCTURE

NOTE:

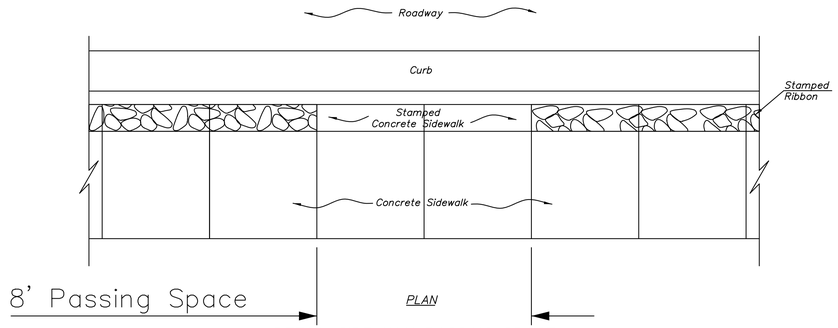
1. Any labor or material costs for installation of flowable fill, rebar, expansion joints & additional sidewalk concrete around drainage structures shall be considered subsidiary to drainage structure bid items.

SIDEWALK ADJACENT TO INLET DETAILS

Plotted : 25-APR-2019 12:55

Drawn By : lrosenbaum
File : 13668R2101.dgn

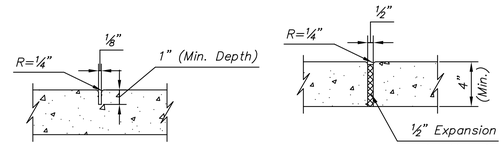
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 42 | 393 |




DETAIL SIDEWALK PASSING SPACE

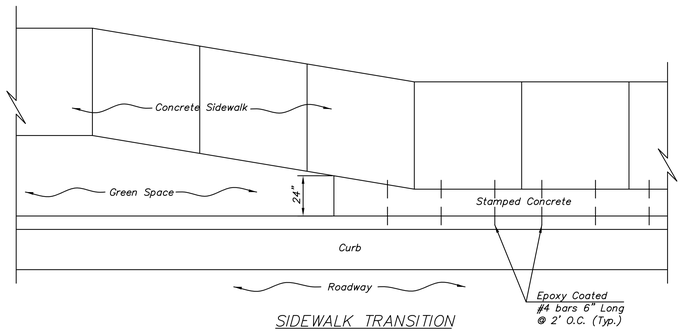
NOTES:

1. Type "A" Joint spacing 5'-0" center to center on 5' wide sidewalks and 8'-0" on 8' wide sidewalks.
2. Type "B" Joints where walk abuts junction of manholes, poles, and other similar structures.
3. Type "B" Joint with 2-6" smooth epoxy coated #4 bars at 250' centers maximum. Set 1' in from out side edges of sidewalk.
4. All concrete sidewalks shall be KCMMB 4k and 4" in depth.
5. The concrete surface of sidewalk shall be finished with a float and broomed. All edges shall be finished with a smooth edging tool to give a "picture frome" appearance.
6. The stamped ribbon shall be an XXXXXXXXX pattern with less than 1/4" of texture relief. A XXXXXXXX colored release agent shall be used during stamping. The pattern and color shall be approved by the City prior to placement. All labor and material needed to complete stamped concrete ribbon shall be subsidiary to the bid item Sidewalk Construction (4") (KCMMB4K).

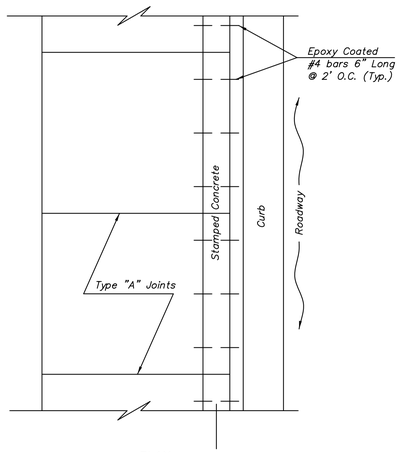



TYPE A — TYPE B

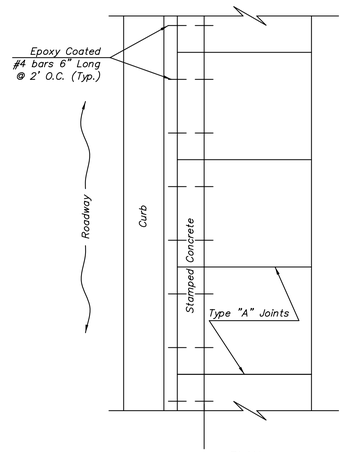
JOINT DETAILS
Not to Scale



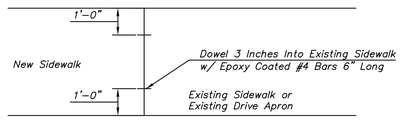

SIDEWALK TRANSITION



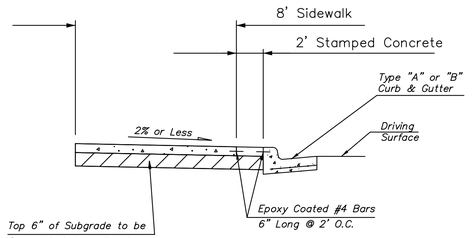

PLAN



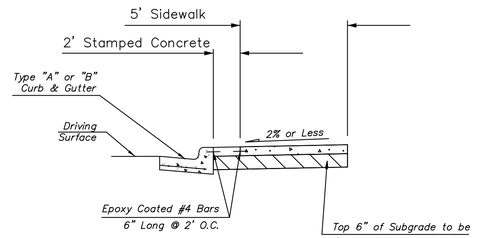

PLAN




NEW TO EXISTING SIDEWALK DOWEL CONNECTION




STANDARD WEST SIDEWALK



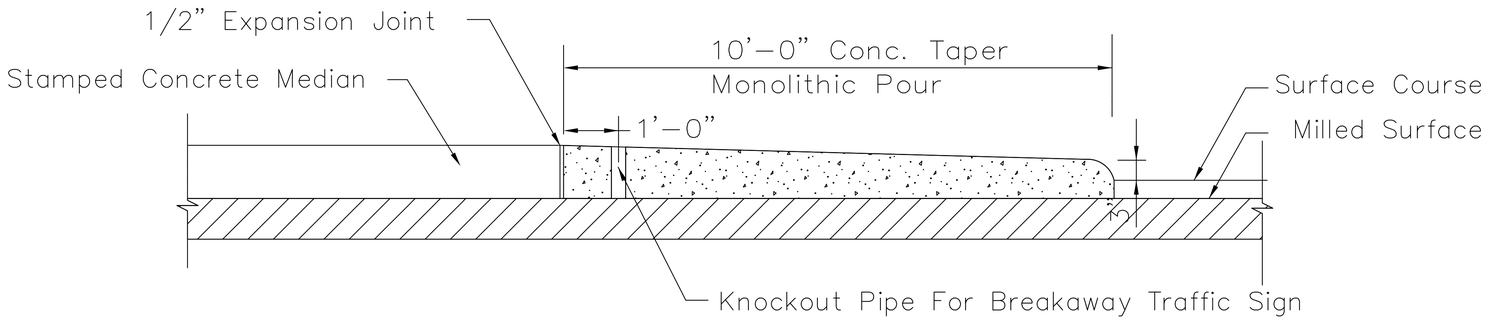

STANDARD EAST SIDEWALK

All concrete shall be KCMMB 4k concrete.

SIDEWALK DETAILS

Drawn By : lrosenbaum
File : 13668R2101.dgn
Plotted : 25-APR-2019 12:55

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 43 | 393 |




MEDIAN NOSE DETAIL

Note: Additional Concrete (KCMMB 4K) needed to complete median nose shall be subsidiary to the bid item Curb, Protection (KCMMB4K) (Special).

MEDIAN NOSE DETAILS

Drawn By : lrosenbaum
File : 13668R2101.dgn
Plotted :25-APR-2019 12:55

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 44 | 393 |

† Construct concrete approach to Right-Of-Way line. Match existing surface material beyond Right-Of-Way unless otherwise detailed in the plans.

✳ Where proposed edge of pavement is located inside existing edge of pavement, sawcut line shall be one foot inside proposed edge of pavement. Curb shall be constructed in the manner as shown on the Curb Replacement Detail located on sheet 32

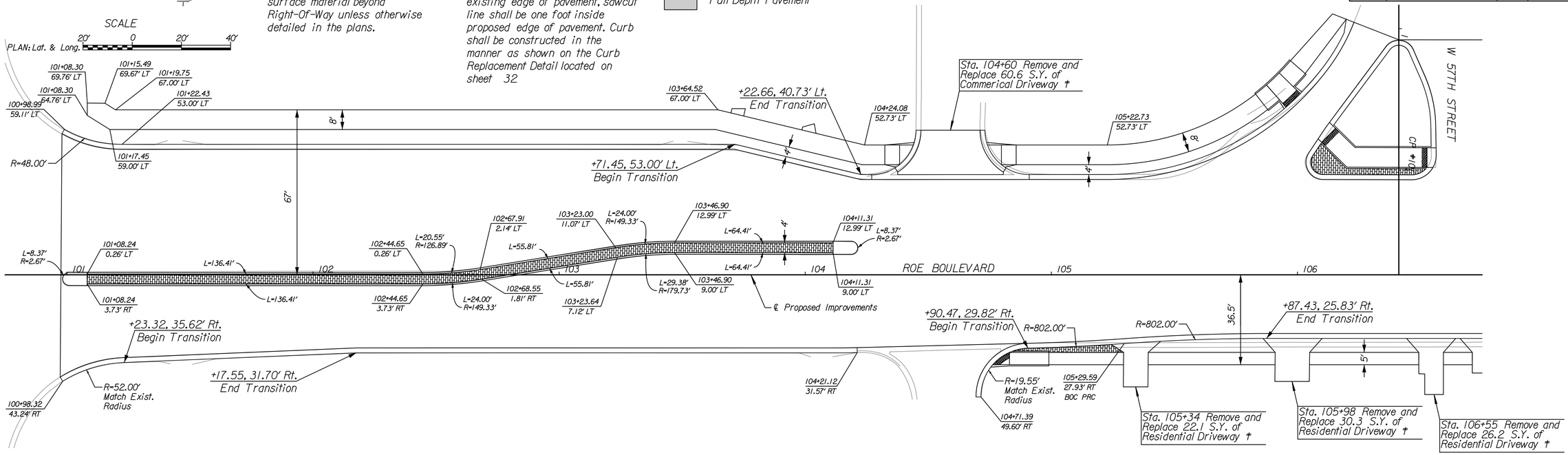
LEGEND

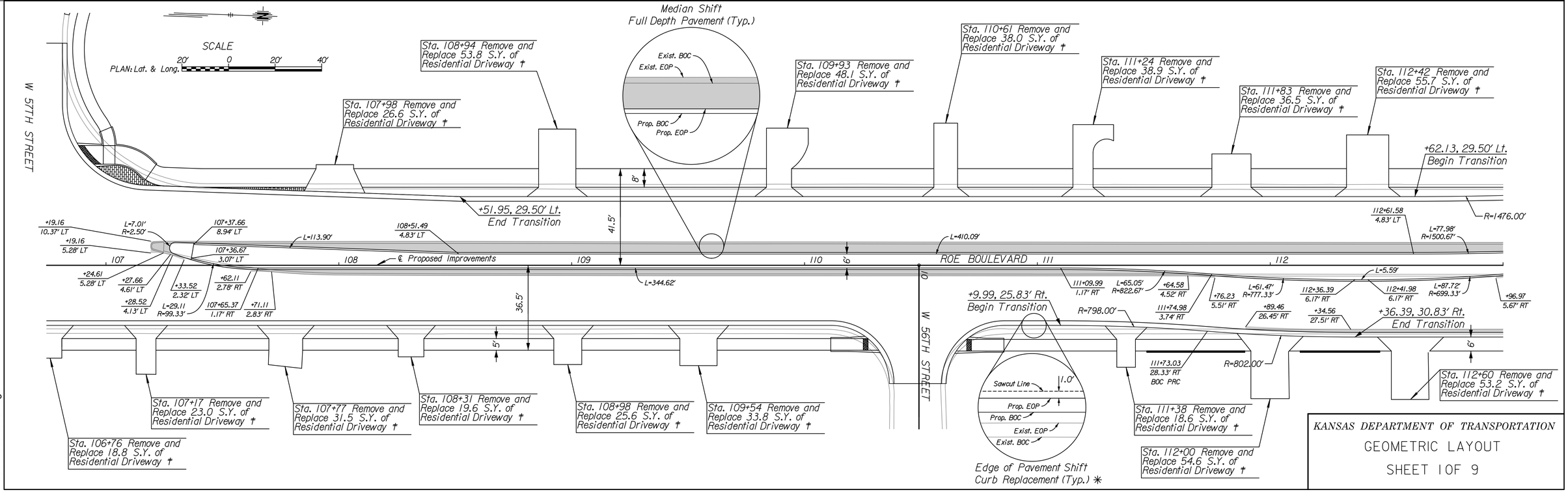
Full Depth Pavement

SCALE

20′ 0 20′ 40′

PLAN: Lat. & Long.




KANSAS DEPARTMENT OF TRANSPORTATION

GEOMETRIC LAYOUT

SHEET 10F 9

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted : 25-APR-2019 12:56

Drawn By : lrosenbaum

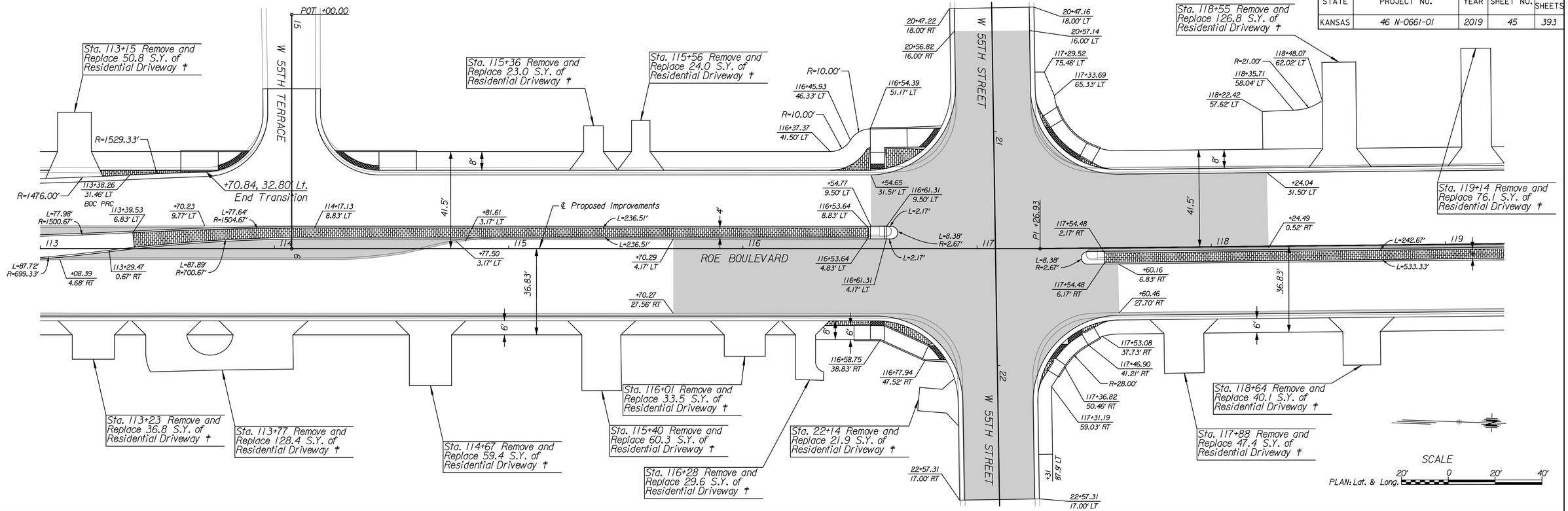
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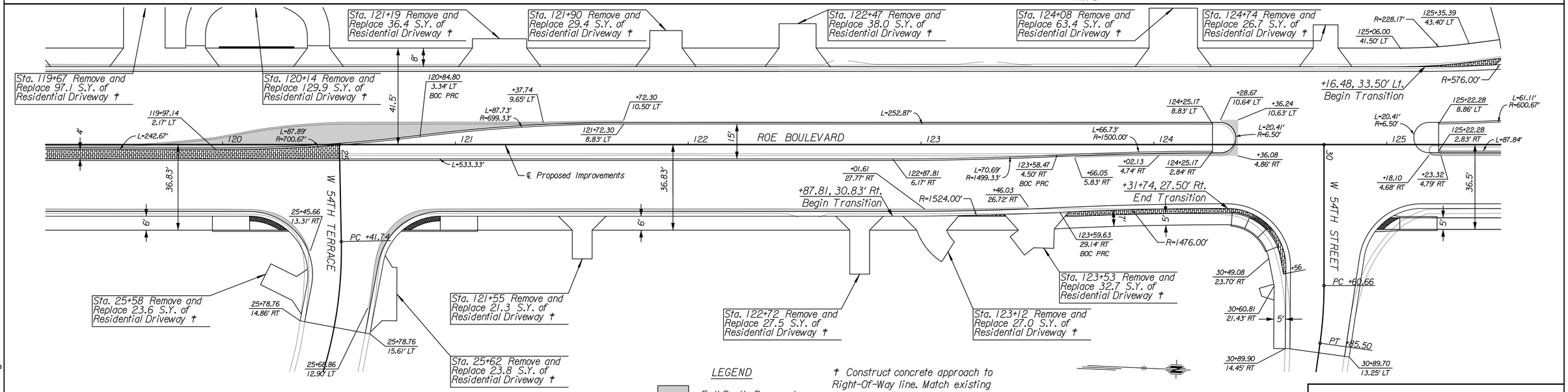
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 45 | 393 |

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |

Plotted : 25-APR-2019 12:56

Drawn By : lrosenbaum
File : 13668R0802.dgn




KANSAS DEPARTMENT OF TRANSPORTATION

GEOMETRIC LAYOUT

SHEET 2 OF 9

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 46 | 393 |

LEGEND

Full Depth Pavement

† Construct concrete approach to Right-Of-Way line. Match existing surface material beyond Right-Of-Way unless otherwise detailed in the plans.

SCALE
PLAN: Lat. & Long. 10' 0 10' 20'

Sta. 35+66 Remove and Replace 10.2 S.Y. of Residential Driveway †

Sta. 36+31 Remove and Replace 32.5 S.Y. of Residential Driveway †

Sta. 35+89 Remove and Replace 64.1 S.Y. of Residential Driveway †

Sta. 126+08 Remove and Replace 94.8 S.Y. of Residential Driveway †

Sta. 125+51 Remove and Replace 71.7 S.Y. of Residential Driveway †

Sta. 128+84 Remove and Replace 36.8 S.Y. of Residential Driveway †

Sta. 129+63 Remove and Replace 24.1 S.Y. of Residential Driveway †

Sta. 130+21 Remove and Replace 24.8 S.Y. of Residential Driveway †

Sta. 130+80 Remove and Replace 33.3 S.Y. of Residential Driveway †

Sta. 131+40 Remove and Replace 40.7 S.Y. of Residential Driveway †

Sta. 126+26 Remove and Replace 19.5 S.Y. of Residential Driveway †

Sta. 129+29 Remove and Replace 31.8 S.Y. of Residential Driveway †

Sta. 130+15 Remove and Replace 25.7 S.Y. of Residential Driveway †

Sta. 129+02 Remove and Replace 46.4 S.Y. of Residential Driveway †

Sta. 130+92 Remove and Replace 31.1 S.Y. of Residential Driveway †

Sta. 131+43 Remove and Replace 23.5 S.Y. of Residential Driveway †

ROSEWOOD DRIVE

ROE BOULEVARD

W 53RD TERRACE

℄ Proposed Improvements

35+56.93 15.00' RT
35+70.46 21.00' RT
35+93.49 15.00' RT
35+62.04 15.00' LT
35+93.49 15.00' LT
R=128.00'
PC +93.49
36'
R=98.00'
PT +66.35
36+68.48 56.17' RT
36+76.12 14.61' RT BOC PRC
36+85.48 16.93' LT BOC PCC
R=50.00'
36+95.89 59.08' RT
36+95.83 60.01' RT
R=6.50'
37+01.83 52.99' RT
37+03.45 65.90' RT
37+02.20 52.96' RT
125+80.51 37.07' LT BOC PRC
R=576.00'
R=574.00'
+17.53 37.00' LT
+21.98 37.19' LT
+63.30 36.64' LT
+50.70 29.69' LT
R=537.00'
128+17.80 27.50' LT
125+83.25 12.56' LT BOC PRC
L=61.11' R=600.67'
126+35.83 11.97' LT
126+35.88 15.90' LT
126+42.21 15.96' LT
126+65.18 15.51' LT
L=52.75' R=549.33'
L=22.98 R=549.33'
L=30.59' R=9.86'
126+10.12 7.11' LT
126+42.11 6.71' LT
L=87.84'
126
127
128
129
130
131
+70.55 4.68' RT
+83.50 4.50' RT
126+10.12 2.83' RT
126+16.45 1.86' LT
126+16.45 2.83' RT
L=48.73'
126+65.18 2.83' RT
127+67.69 5.32' LT
L=16.08' R=4.98'
L=61.66' R=754.17'
128+29.29 2.83' LT
127+67.69 2.83' RT
+73.17 4.50' RT
+78.46 4.92' RT
+51.47 4.50' LT
+45.94 4.50' LT
L=478.96'
L=540.55'
41.5'
5.67'
36.5'
40'
5'
PC +51.08
R=15.00'
PT +73.88
40+42.50 28.47' LT
40+52.65 24.70' LT
40+60.82 21.00' LT
40+70.04 19.34' LT
40+89.50 13.00' RT
40+89.50 13.00' LT
POT +00.00
8'
12'

DATE
BY
REFERENCES NOTED
REFERENCES CHECKED

Plotted :25-APR-2019 12:56

Drawn By : lrosenbaum
File : 13668R0803.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

GEOMETRIC LAYOUT

SHEET 3 OF 9

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 47 | 393 |

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Sta. 132+02 Remove and Replace 47.6 S.Y. of Residential Driveway †

Sta. 132+63 Remove and Replace 52.8 S.Y. of Residential Driveway †

Sta. 133+22 Remove and Replace 45.0 S.Y. of Residential Driveway †

Sta. 133+81 Remove and Replace 20.8 S.Y. of Residential Driveway †

Sta. 134+42 Remove and Replace 20.8 S.Y. of Residential Driveway †

Sta. 135+03 Remove and Replace 21.8 S.Y. of Residential Driveway †

Sta. 135+63 Remove and Replace 39.9 S.Y. of Residential Driveway †

Sta. 136+21 Remove and Replace 16.8 S.Y. of Residential Driveway †

Sta. 136+79 Remove and Replace 90.5 S.Y. of Commercial Driveway †

+14.71, 27.50' Lt. Begin Transition

+84.47, 29.50' Lt. End Transition

132+87.76 4.50' LT; 132+80.56 4.50' LT; 133+08.24 2.83' LT; L=11.00' R=3.50'; 132+19.59 0.83' RT; 132+19.55 4.69' RT; 132+17.97 4.67' RT; 133+08.24 2.83' RT; L=478.96'; L=540.55'; 5.66'; 36.5'; 41.5'; 8'

132 133 134 135 136 137

ROE BOULEVARD

℄ Proposed Improvements

136+54.24 66.86' LT; 136+54.30 62.28' LT; R=4.50'; R=35.00'; 136+58.80 56.79' LT; 136+24.66 29.50' LT; R=1.00'; 137+03.96 41.50' LT; 137+03.36 39.70' LT; R=50.00'; 137+33.63 29.50' LT

+15.71, 29.00' Rt. Begin Transition

PC +31.20; PT +42.74; W 52ND TERRACE; 45; 46

45+35.68 39.55' LT; 45+43.53 35.48' LT; 45+73.17 16.21' LT; 45+78.04 14.87' RT; PC +89.32; PT +00.51

+89.14 35.16' RT; +04.73 37.11' RT; +07.64, 40.50' Rt. End Transition; 6.5'; +53.02 37.57' RT; 135+53.73 40.50' RT; +60.88 36.69' RT; R=35.00'; R=6.00'; 135+82.86 58.04' RT; 135+82.85 63.20' RT; 135+81.65 54.40' RT BOC PCC; 136+27.73 41.37' RT BOC PCC; 136+26.05 45.54' RT; R=35.00'; R=15.00'; R=6.00'; 136+26.05 63.34' RT; 136+54.00 29.50' RT

Sta. 131+86 Remove and Replace 35.3 S.Y. of Residential Driveway †

Sta. 132+30 Remove and Replace 24.6 S.Y. of Residential Driveway †

Sta. 132+71 Remove and Replace 45.0 S.Y. of Residential Driveway †

Sta. 136+04 Remove and Replace 147.7 S.Y. of Commercial Driveway †

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

138+49.38 76.05' LT; 138+11.05 67.27' LT; 138+52.79 65.68' LT; 138+52.79 70.57' LT; R=4.00'; R=20.00'; R=4.50'; 138+17.63 60.68' LT; 138+48.29 61.18' LT; +25.56 60.68' LT; +25.56 43.50' LT; R=35.00'; 138+54.12 45.45' LT BOC PRC; 138+74.45 49.15' LT BOC PCC; R=4.00'; 138+77.96 45.43' LT BOC PCC; 138+37.96 41.50' LT; R=35.00'; +79.87 42.50' LT; R=15.00'; 138+62.99 29.50' LT; +07.58 42.50' LT; 139+28.86 68.08' LT BOC PCC; 139+34.86 74.13' LT; R=4.00'; 139+32.86 64.08' LT; 139+10.64 39.82' LT; 139+32.86 49.09' LT; 139+11.33 38.30' LT; 139+24.99 29.50' LT; 8'; 41.5'

Sta. 138+93 Remove and Replace 48.8 S.Y. of Commercial Driveway †

138 139 140 141 142

CONSTRUCTION NOTE:

1 Contractor shall use Residential Collector/Commercial Parking Full Depth Asphalt Pavement Section.

36.5'; 5'; +56.33 26.64' RT; +62.85 28.09' RT; 55+46.84 13.65' RT; SYCAMORE DRIVE; 55+54.50 12.58' RT; POT +00.00; 55'

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

† Construct concrete approach to Right-Of-Way line. Match existing surface material beyond Right-Of-Way unless otherwise detailed in the plans.

LEGEND

Full Depth Pavement

+64.04 1.89' RT; +64.35 27.50' RT; ROE BOULEVARD; ℄ Proposed Improvements; PC +68.97

141+98.53 63.18' LT; 142+24.41 65.66' LT; 142+43.34 66.63' LT; R=10.00'; 142+01.81 55.67' LT; 142+02.17 41.98' LT; 142+44.05 53.58' LT; +19.70 42.72' LT; +13.62 10.66' LT; +03.54 10.26' LT; +12.60 35.16' LT; L=13.07'; L=15.71' R=5.00'; 136+85.80 147.90' RT; L=8.09'; 142+53.60 54.19' RT; 137+05.79 148.01' RT; +91.91 32.97' LT; 5'; 8'; 50'; +91.55 1.57' LT; +99.26 1.47' LT; 143+11.20 3.33' RT; L=52.50'; +99.15 5.32' RT; L=8.38' R=2.67'; +90.97 29.93' RT; 143+11.20 7.33' RT; L=52.50'; +23.35 27.37' RT; +03.70; 39'; R=1168.00'; 137+25.32 246.43' RT; 137+28.23 246.75' RT; 60+57.32 25.45' LT; R=15.00'; 60+64.14 25.86' LT; R=15.00'; 60+68.47 26.49' LT; 60+82.30 26.45' LT; 60+85.61 26.10' RT; 60+83.08 19.00' RT; 60+83.08 19.00' LT; 2.5'; W 51ST STREET

KANSAS DEPARTMENT OF TRANSPORTATION
GEOMETRIC LAYOUT
SHEET 4 OF 9

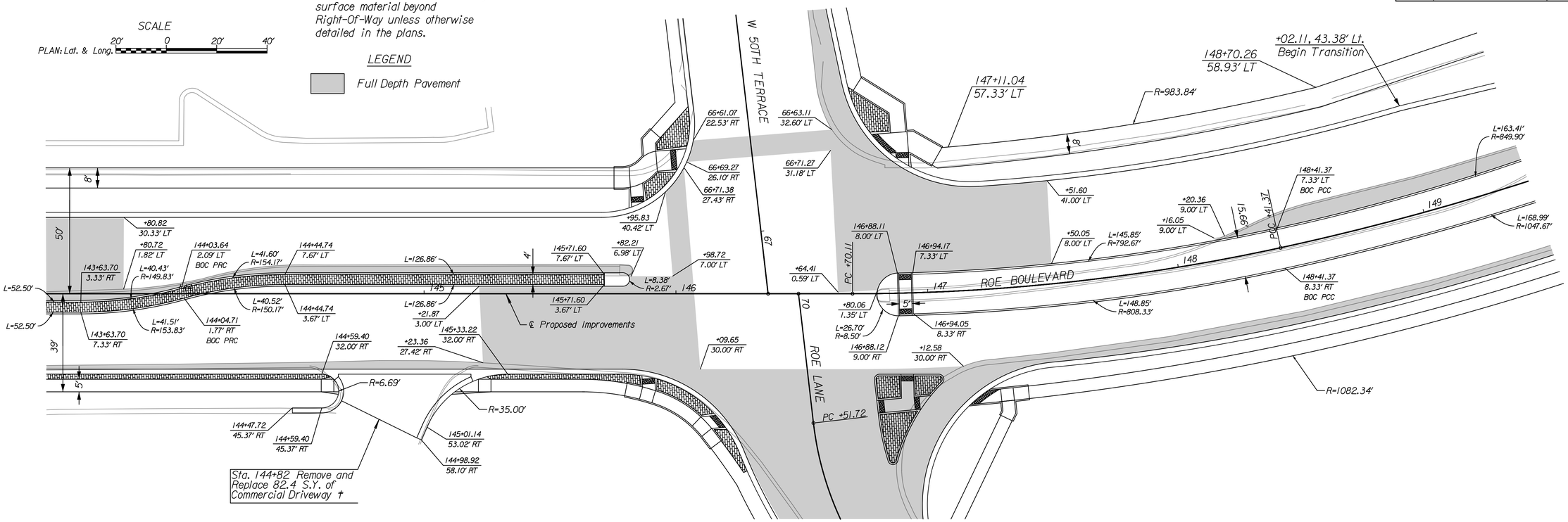
Plotted : 25-APR-2019 12:56
Drawn By : lrosenbaum
File : 13668R0804.dgn

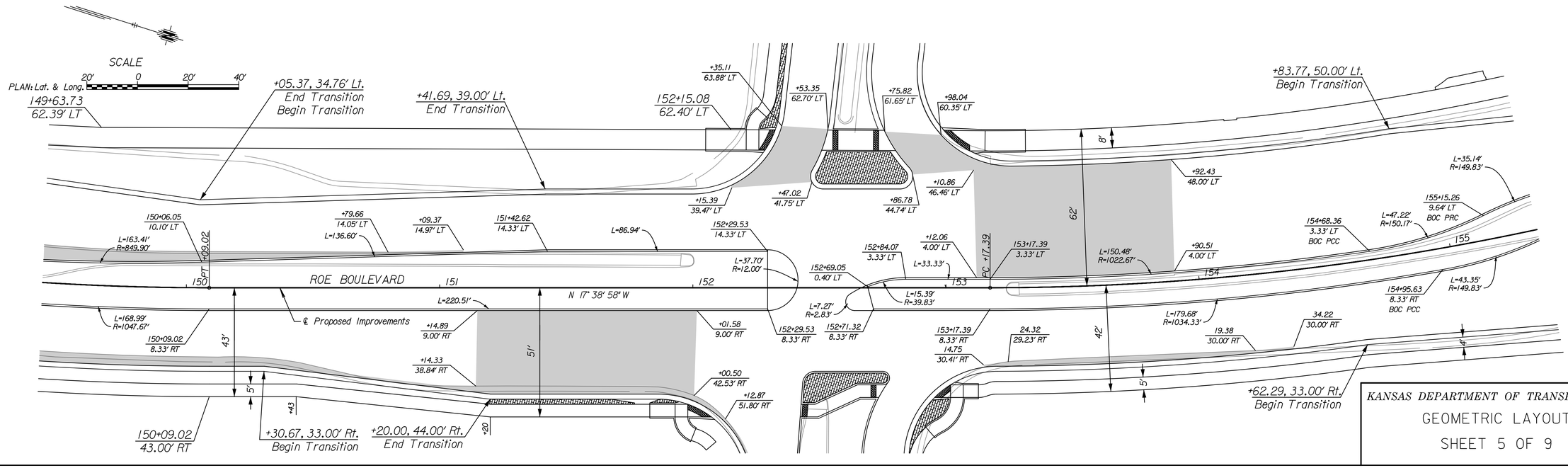
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 48 | 393 |

† Construct concrete approach to Right-Of-Way line. Match existing surface material beyond Right-Of-Way unless otherwise detailed in the plans.

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

LEGEND
Full Depth Pavement




KANSAS DEPARTMENT OF TRANSPORTATION
GEOMETRIC LAYOUT
SHEET 5 OF 9

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted :25-APR-2019 12:56
Drawn By: Irosenbaum
File : 13668R0805.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 49 | 393 |

* Construct concrete approach to Right-Of-Way line. Match existing surface material beyond Right-Of-Way unless otherwise detailed in the plans.

LEGEND

Full Depth Pavement

SCALE

PLAN: Lat. & Long. 20' 0 20' 40'

SKYLINE DRIVE

ROE BOULEVARD

W48TH STREET

℄ Proposed Improvements

+87.64, 39.00' Lt. End Transition

+15.00, 44.00' Rt. End Transition

Sta. 160.79 Remove and Replace 148.4 S.Y. of Residential Driveway *

KANSAS DEPARTMENT OF TRANSPORTATION

GEOMETRIC LAYOUT

SHEET 6 OF 9

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted : 25-APR-2019 12:56

Drawn By : Irosenbaum

File : 13668R0806.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 50 | 393 |

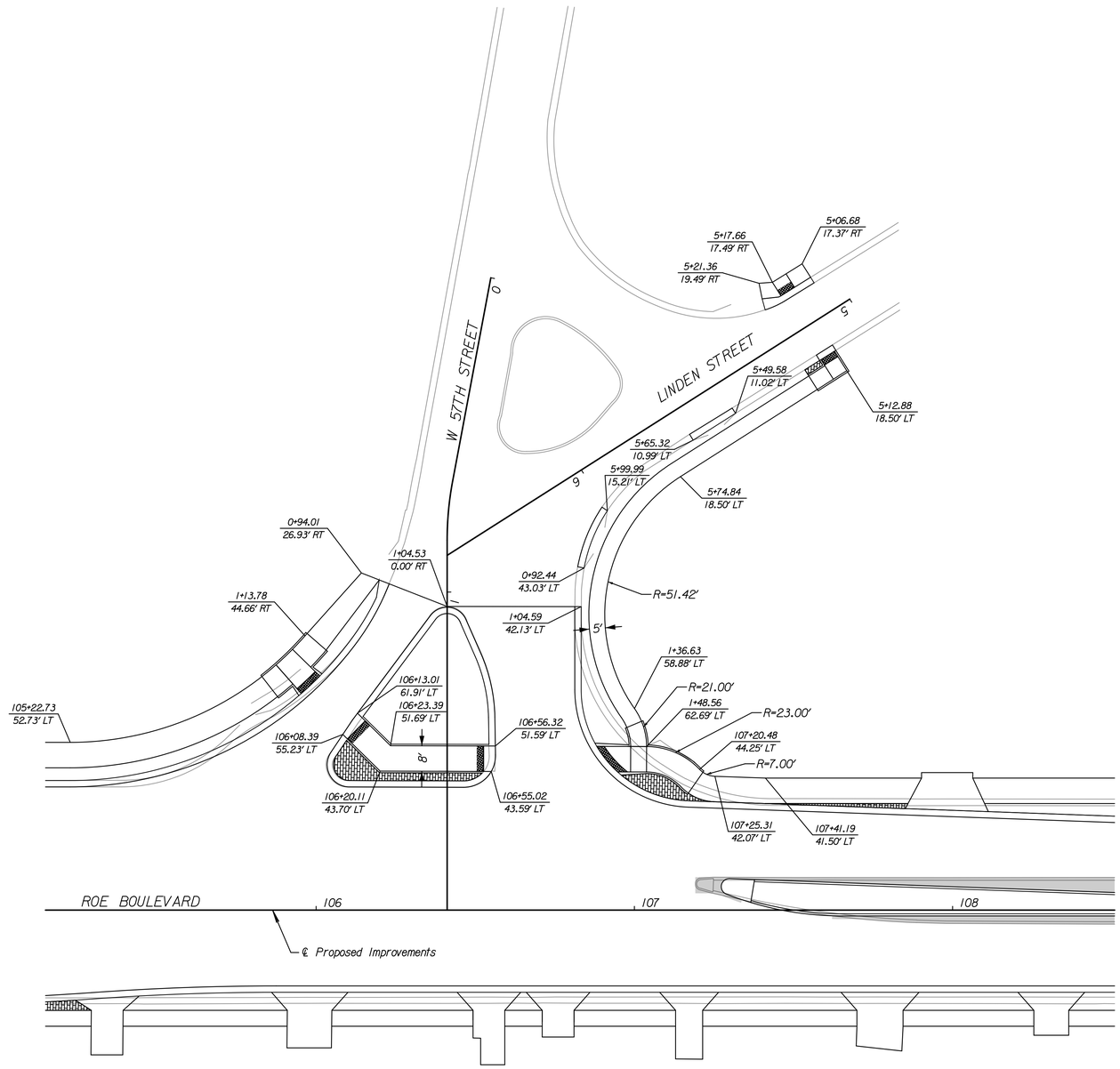
SCALE

20' 0 20' 40'

PLAN: Lat. & Long.

LEGEND

Full Depth Pavement




| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:56

Drawn By : Irosenbaum

File : 13668R0808.dgn

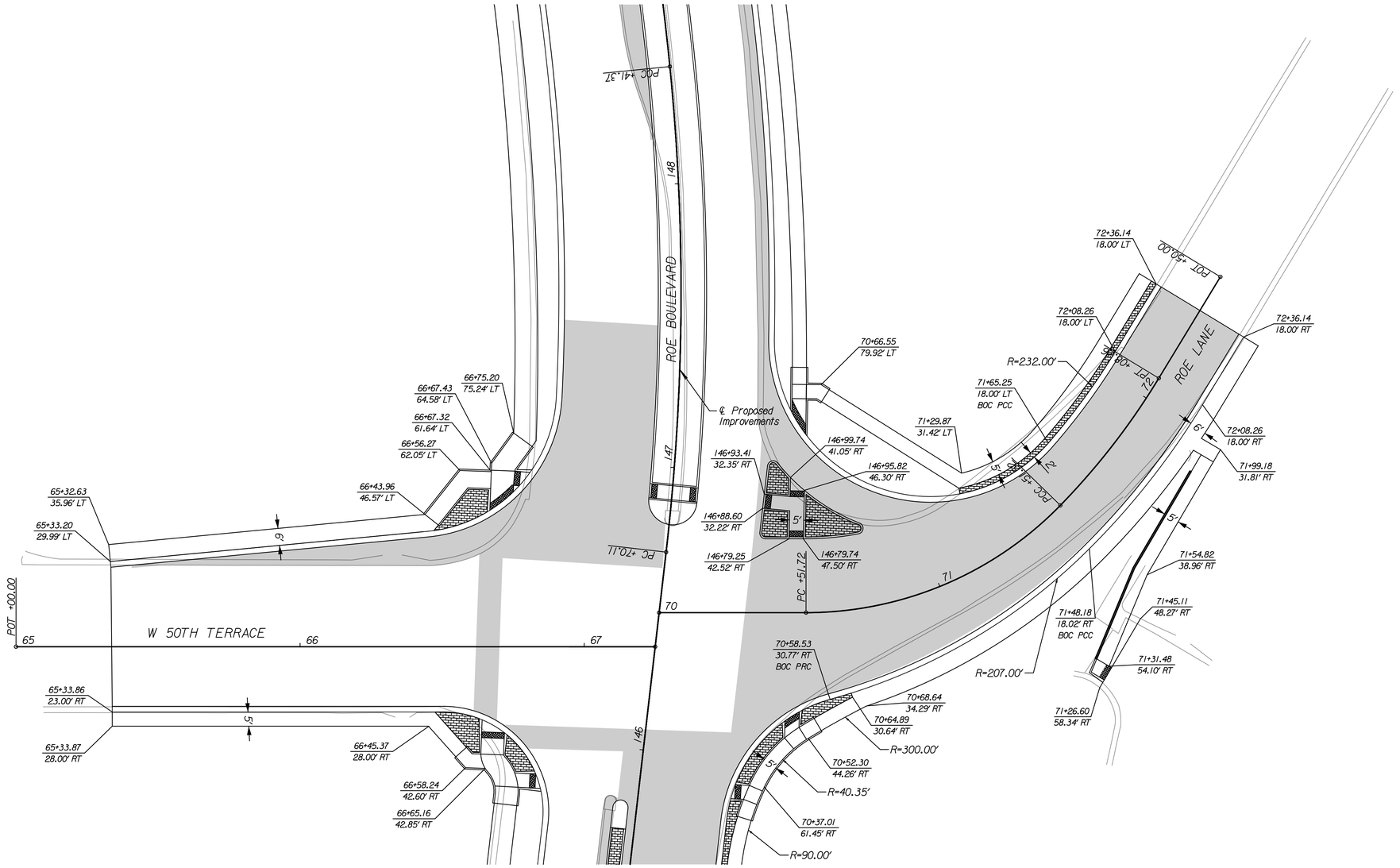
*KANSAS DEPARTMENT OF TRANSPORTATION*

GEOMETRIC LAYOUT

SHEET 7 OF 9

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 51 | 393 |

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |




LEGEND

Full Depth Pavement

KANSAS DEPARTMENT OF TRANSPORTATION

GEOMETRIC LAYOUT

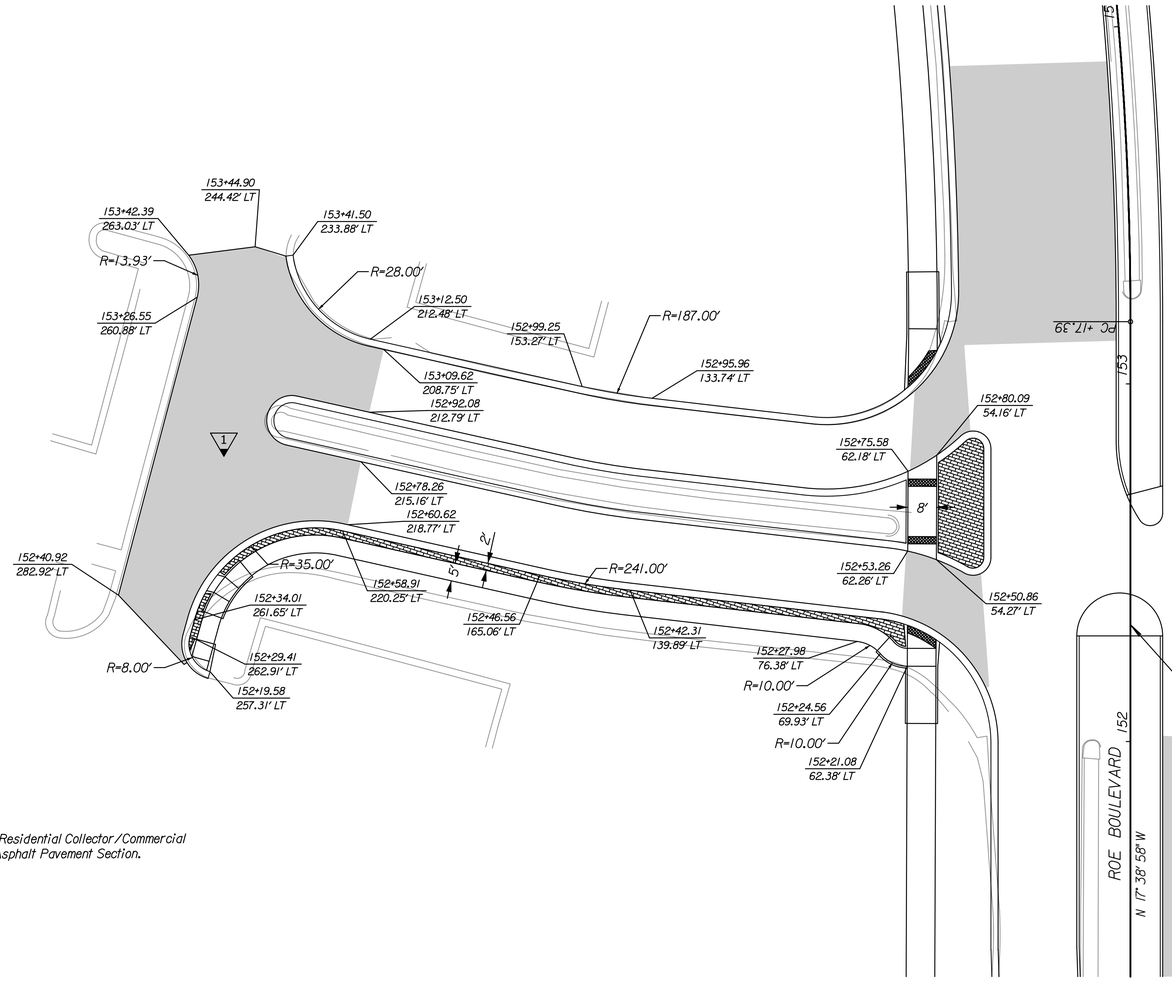
SHEET 8 OF 9

Plotted : 25-APR-2019 12:56

Drawn By : lrosenbaum
File : 13668R0809.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 52 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




CONSTRUCTION NOTE:

1 Contractor shall use Residential Collector/Commercial Parking Full Depth Asphalt Pavement Section.

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

LEGEND
Full Depth Pavement

KANSAS DEPARTMENT OF TRANSPORTATION
GEOMETRIC LAYOUT
SHEET 9 OF 9

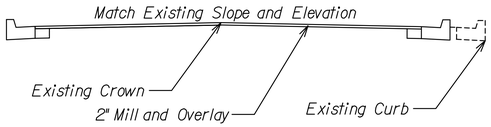
Plotted :25-APR-2019 12:56
Drawn By : lrosenbaum
File : 13668R0810.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 53 | 393 |

| | | LIP OF CURB ELEVATION |
|---|---|---|
| CURB RETURN SW | PC | 933.18 |
| Δ = 53°29'41.35" | 1/4 | 933.80 |
| R = 112.00' | 1/2 | 934.37 |
| L = 104.57' | 3/4 | 934.76 |
| | PT | 935.05 |

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 104+27.01 | 38.73' | LT | 931.57 |
| 2 | 104+37.54 | 41.73' | LT | 931.73 |
| 3 | 104+80.47 | 41.73' | LT | 932.46 * |
| 4 | 104+91.01 | 34.73' | LT | 932.58 * |
| 5 | 106+49.09 | 91.33' | LT | 935.96 |
| 6 | 106+51.80 | 80.57' | LT | 936.98 |
| 7 | 106+56.16 | 60.66' | LT | 936.99 |
| 8 | 106+56.37 | 48.80' | LT | 937.07 |
| 9 | 106+46.34 | 38.62' | LT | 936.98 |
| 10 | 106+10.45 | 38.73' | LT | 935.60 * |
| 11 | 106+04.64 | 49.61' | LT | 935.42 * |
| 12 | 106+11.36 | 59.70' | LT | 936.41 * |
| 13 | 106+35.93 | 92.61' | LT | 935.71 * |

Typical A-A




CURB RETURN SW
112' RADIUS POINT
105+22.73, 150.73' LT

PC
1/4
1/2
3/4
PT

106+22.96
102.58' LT
L=21.17'
R=79.92'
PT 106+12.75
84.11' LT
106+41.16
95.47' LT
L=13.57'
R=6.50'
106+81.30
95.41' LT

LINDEN DR

Scale 1" = 10'

| | | LIP OF CURB ELEVATION |
|---|---|---|
| CURB RETURN NW | PC | 939.58 |
| Δ = 87°58'27.08" | 1/4 | 939.06 |
| R = 37.00' | 1/2 | 938.36 |
| L = 56.79' | 3/4 | 937.42 |
| | PT | 936.85 |

PT 106+81.30
69.34' LT

CURB RETURN NW
37' RADIUS POINT
107+18.30, 69.34' LT

104+47.01
58.73' LT
104+71.01
58.73' LT
PC 105+22.73
38.73' LT
L=20.32'
R=20.00'
L=20.32'
R=20.00'
L=20.51'
R=52.00'
L=15.08'
R=7.00'
L=15.92'
R=10.00'
PC 107+16.96
32.37' LT

Existing Crown

N 88°01'33"E

W 57TH ST

MATCH CROSS SLOPE AND ELEVATION OF ROE BLVD EDGE OF PAVEMENT

105 106 ROE BOULEVARD 107

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

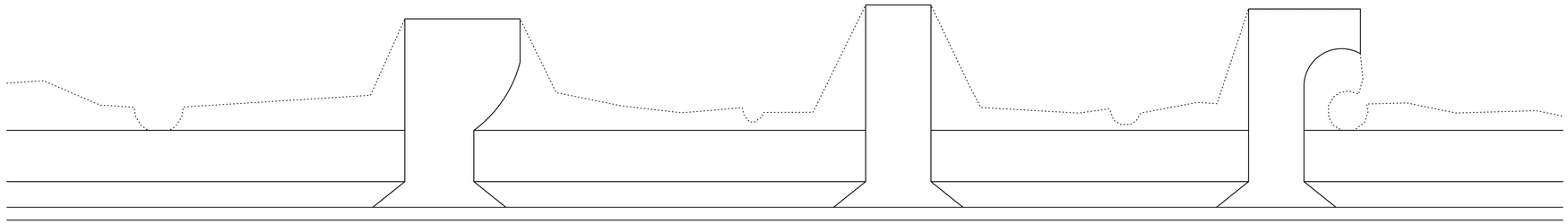
INTERSECTION/ENTRANCE DETAILS
W 57TH STREET

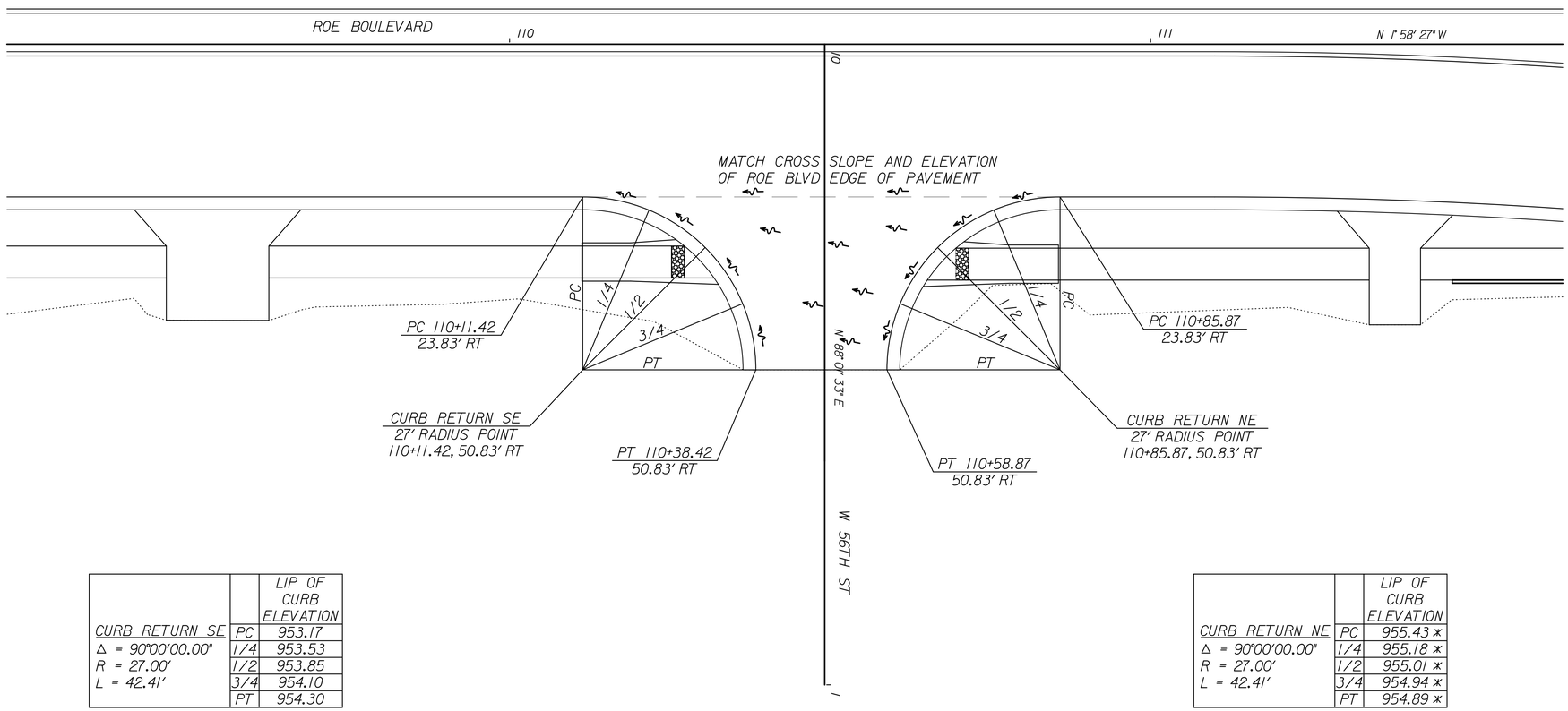
| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 12:56
Drawn By : lrosenbaum
File : 13668R1701_W57th.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 54 | 393 |

Scale 1" = 10'






| | | LIP OF CURB ELEVATION |
|---|---|---|
| CURB RETURN SE | PC | 953.17 |
| Δ = 90°00'00.00" | 1/4 | 953.53 |
| R = 27.00' | 1/2 | 953.85 |
| L = 42.41' | 3/4 | 954.10 |
| | PT | 954.30 |

| | | LIP OF CURB ELEVATION |
|---|---|---|
| CURB RETURN NE | PC | 955.43 * |
| Δ = 90°00'00.00" | 1/4 | 955.18 * |
| R = 27.00' | 1/2 | 955.01 * |
| L = 42.41' | 3/4 | 954.94 * |
| | PT | 954.89 * |

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION/ENTRANCE DETAILS

W 56TH STREET

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

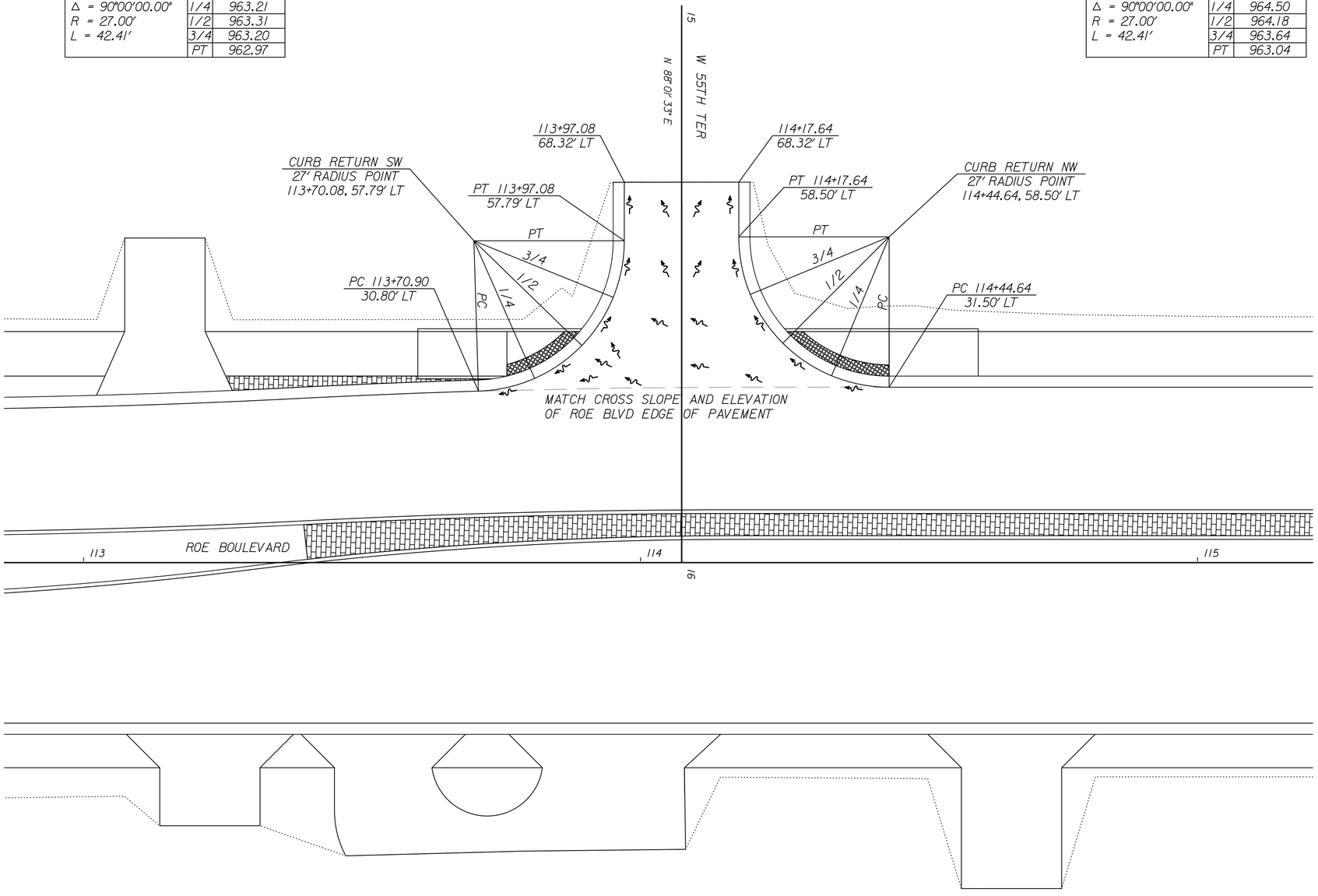
Drawn By : lrosenbaum
File : 13668R1702_W56th.dgn
Plotted :25-APR-2019 12:56

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 55 | 393 |

| CURB RETURN SW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 90°00'00.00" | PC | 962.94 |
| R = 27.00' | 1/4 | 963.21 |
| L = 42.41' | 1/2 | 963.31 |
| | 3/4 | 963.20 |
| | PT | 962.97 |

| CURB RETURN NW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 90°00'00.00" | PC | 964.85 |
| R = 27.00' | 1/4 | 964.50 |
| L = 42.41' | 1/2 | 964.18 |
| | 3/4 | 963.64 |
| | PT | 963.04 |

Scale 1" = 10'




NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION/ENTRANCE DETAILS

W 55TH TERRACE

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Drawn By : lrosenbaum Plotted : 25-APR-2019 12:56
File : 13668R1703_W55thTer.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 56 | 393 |

Scale 1" = 10'

| CURB RETURN SW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 90°54'29.39" | PC | 966.23 |
| R = 37.00' | 1/4 | 966.15 |
| L = 58.71' | 1/2 | 966.08 |
| | 3/4 | 966.01 |
| | PT | 965.93 |

| CURB RETURN NW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 89°41'31.42" | PC | 964.09 |
| R = 37.00' | 1/4 | 964.59 |
| L = 57.92' | 1/2 | 965.08 |
| | 3/4 | 965.46 |
| | PT | 965.53 |

| CURB RETURN SE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 89°05'30.61" | PC | 966.13 |
| R = 37.00' | 1/4 | 965.53 |
| L = 57.53' | 1/2 | 964.76 |
| | 3/4 | 964.18 |
| | PT | 962.71 |

| CURB RETURN NE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 90°18'28.58" | PC | 963.90 |
| R = 37.00' | 1/4 | 964.21 |
| L = 58.32' | 1/2 | 964.16 |
| | 3/4 | 963.70 |
| | PT | 962.82 |

ROE BOULEVARD

W 55TH ST

N 87°07'04" E

117

116+90.27
102.62' LT

117+22.26
103.19' LT

2.00% 0.50% 4.00%

CURB RETURN SW
37' RADIUS POINT
116+53.77, 68.50' LT

PT 116+90.77
69.09' LT

PT 117+22.79
68.26' LT

CURB RETURN NW
37' RADIUS POINT
117+60.50, 68.50' LT

PT 3/4 1/2 1/4 PC

0.50% 2.00%

PC 116+53.77
31.50' LT

PC 117+60.50
31.50' LT

2.00% 2.00% 2.50%

MATCH CROSS SLOPE AND ELEVATION
OF ROE BLVD EDGE OF PAVEMENT

PC 116+56.90
28.83' RT

MATCH CROSS SLOPE AND ELEVATION
OF ROE BLVD EDGE OF PAVEMENT

1.50% 2.00% 2.75%

PC 1/4 1/2 3/4 PT

2.00% 2.00% 2.00%

PC 117+60.22
28.83' RT

CURB RETURN NE
37' RADIUS POINT
117+60.22, 65.83' RT

PT 117+23.91
66.07' RT

CURB RETURN SE
37' RADIUS POINT
116+56.90, 65.83' RT

PT 116+93.90
65.25' RT

116+94.57
107.42' RT

117+24.56
106.95' RT

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION/ENTRANCE DETAILS

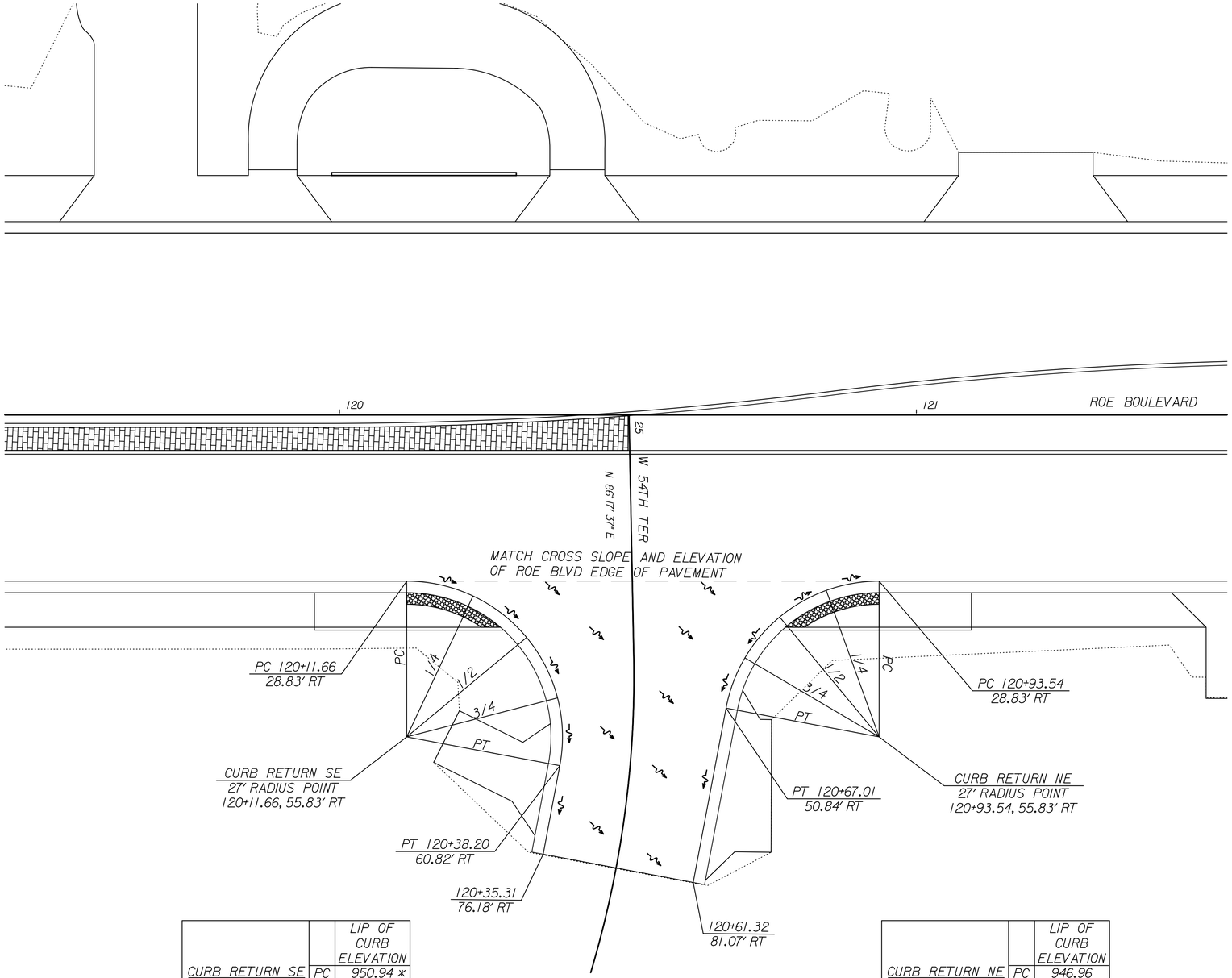
W 55TH STREET

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 12:56
Drawn By : lrosenbaum
File : 13668R1704_W55th.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 57 | 393 |

Scale 1" = 10'




| CURB RETURN SE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 100°39'01.06" | PC | 950.94 * |
| R = 27.00' | 1/4 | 950.16 * |
| L = 47.43' | 1/2 | 949.38 * |
| | 3/4 | 948.60 * |
| | PT | 947.83 * |

| CURB RETURN NE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 79°20'58.94" | PC | 946.96 |
| R = 27.00' | 1/4 | 947.27 |
| L = 37.39' | 1/2 | 947.51 |
| | 3/4 | 947.21 |
| | PT | 946.77 |

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION/ENTRANCE DETAILS

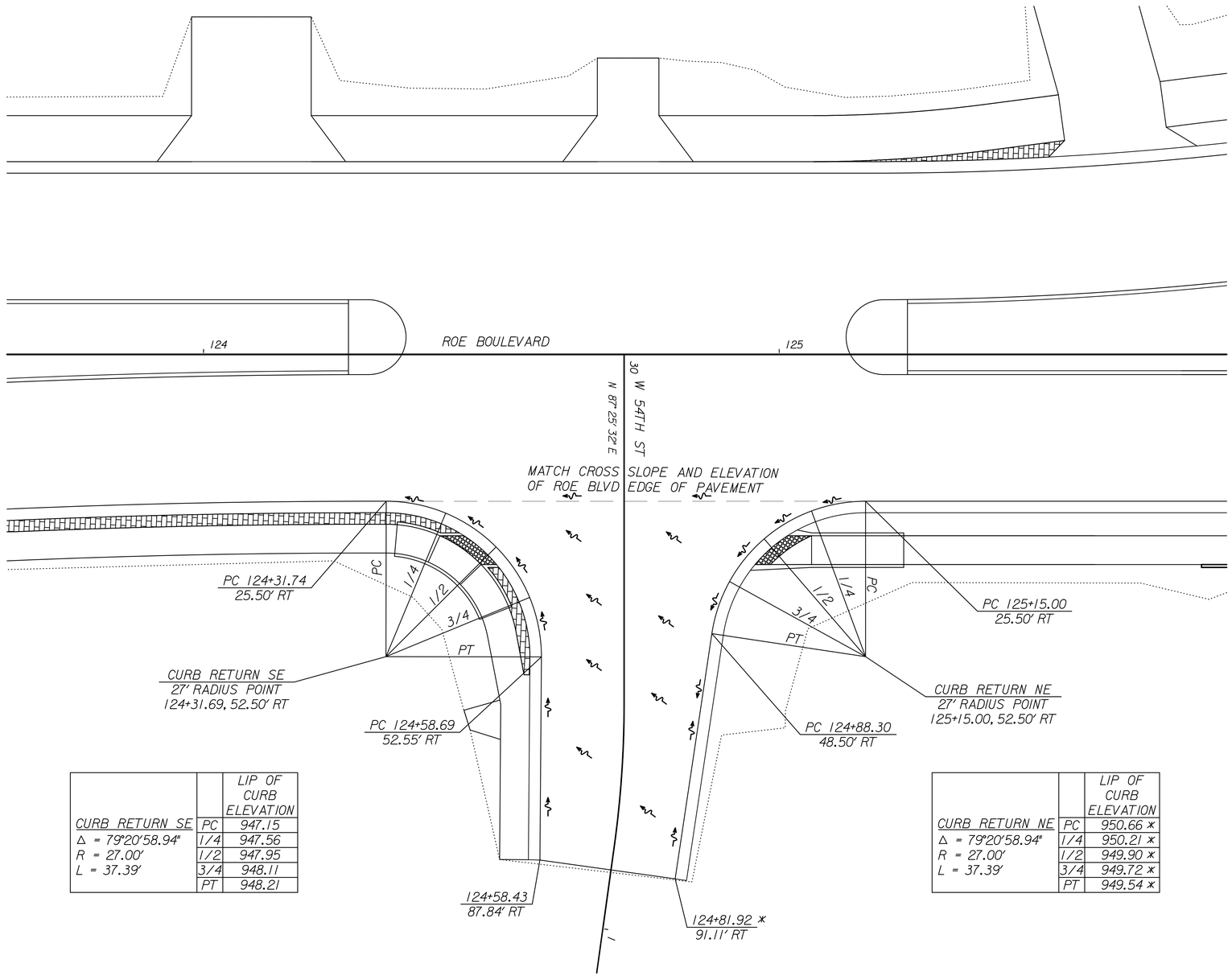
W 54TH TERRACE

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Drawn By : lrosenbaum Plotted :25-APR-2019 12:56
File : 13668R1705_W54thTer.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 58 | 393 |

Scale 1" = 10'




| CURB RETURN SE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 79°20'58.94" | PC | 947.15 |
| R = 27.00' | 1/4 | 947.56 |
| L = 37.39' | 1/2 | 947.95 |
| | 3/4 | 948.11 |
| | PT | 948.21 |

| CURB RETURN NE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 79°20'58.94" | PC | 950.66 * |
| R = 27.00' | 1/4 | 950.21 * |
| L = 37.39' | 1/2 | 949.90 * |
| | 3/4 | 949.72 * |
| | PT | 949.54 * |

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION/ENTRANCE DETAILS

W 54TH STREET

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Drawn By : lrosenbaum Plotted : 25-APR-2019 12:56
File : 13668R1706_W54th.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 59 | 393 |

| | | LIP OF CURB ELEVATION |
|---|---|---|
| CURB RETURN NW | PC | 961.51 x |
| Δ = 76°49'05.04" | 1/4 | 960.82 x |
| R = 37.00' | 1/2 | 959.93 x |
| L = 49.61' | 3/4 | 958.86 x |
| | PT | 957.72 x |

| | | LIP OF CURB ELEVATION |
|---|---|---|
| CURB RETURN NE | PC | 962.22 |
| Δ = 97°15'27.42" | 1/4 | 961.72 |
| R = 27.00' | 1/2 | 961.48 |
| L = 45.83' | 3/4 | 961.28 x |
| | PT | 961.34 x |

| | | LIP OF CURB ELEVATION |
|---|---|---|
| CURB RETURN SW | PC | 957.33 |
| Δ = 90°07'11.45" | 1/4 | 957.82 |
| R = 37.00' | 1/2 | 957.86 |
| L = 58.20' | 3/4 | 957.43 |
| | PT | 956.60 |

| | | LIP OF CURB ELEVATION |
|---|---|---|
| CURB RETURN SE | PC | 958.83 |
| Δ = 82°44'32.58" | 1/4 | 959.27 |
| R = 27.00' | 1/2 | 9959.70 |
| L = 38.99' | 3/4 | 960.13 |
| | PT | 960.78 |

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 127+43.86 | 140.18' | LT | 955.10 x |
| 2 | 127+24.60 | 157.64' | LT | 954.30 |
| 3 | 127+01.67 | 121.53' | LT | 954.13 |

127+64.98
163.48' LT

127+45.79
180.88' LT

127+49.15
184.73' LT

S 50°23'09" E

0.50%

6.00%

2.00%

2.00%

1

2

3

36

37

L=42.99'
R=126.00'

L=47.85'
R=126.00'

L=84.16'
R=100.00'

PC 127+50.70
29.69' LT

CURB RETURN NW
37' RADIUS POINT
127+55.31, 66.41' LT

PC
1/4
1/2
3/4
PT

PT 127+18.51
62.52' LT

PT 126+91.97
74.96' LT

CURB RETURN SW
37' RADIUS POINT
126+54.98, 75.53' LT

PC 126+54.33
38.54' LT

S 87°12'48" E

ROSEWOOD DRIVE

MATCH CROSS SLOPE AND ELEVATION OF ROE BLVD EDGE OF PAVEMENT

128

ROE BOULEVARD

127

126

40 N 87°25'32" E

W 53RD TER

MATCH CROSS SLOPE AND ELEVATION OF ROE BLVD EDGE OF PAVEMENT

PC 127+68.83
25.50' RT

CURB RETURN NE
27' RADIUS POINT
127+68.83, 52.50' RT

PC
1/4
1/2
3/4
PT

PT 127+42.04
55.91' RT

127+46.12
87.92' RT

N 80°10'05" E

127+24.30
90.70' RT

PT 127+19.00
49.09' RT

PC
1/4
1/2
3/4
PT

PC 126+92.21
25.50' RT

CURB RETURN SE
27' RADIUS POINT
126+92.21, 52.50' RT

Scale 1" = 10'

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

x = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

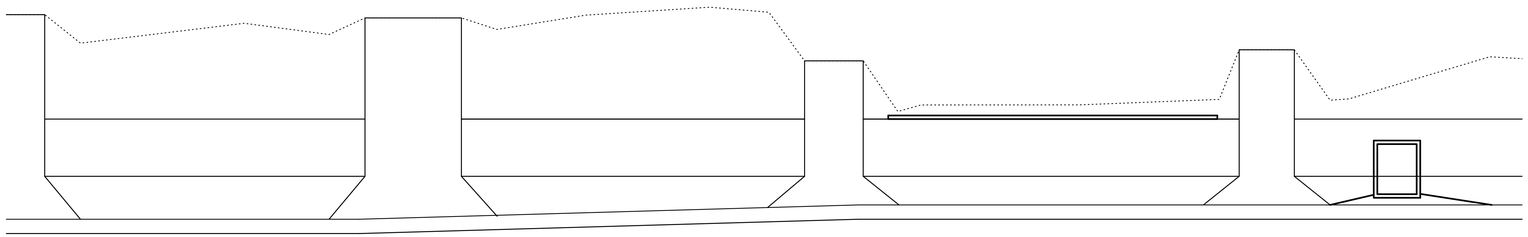
# INTERSECTION/ENTRANCE DETAILS
# ROSEWOOD DRIVE &
# W 53RD TERRACE

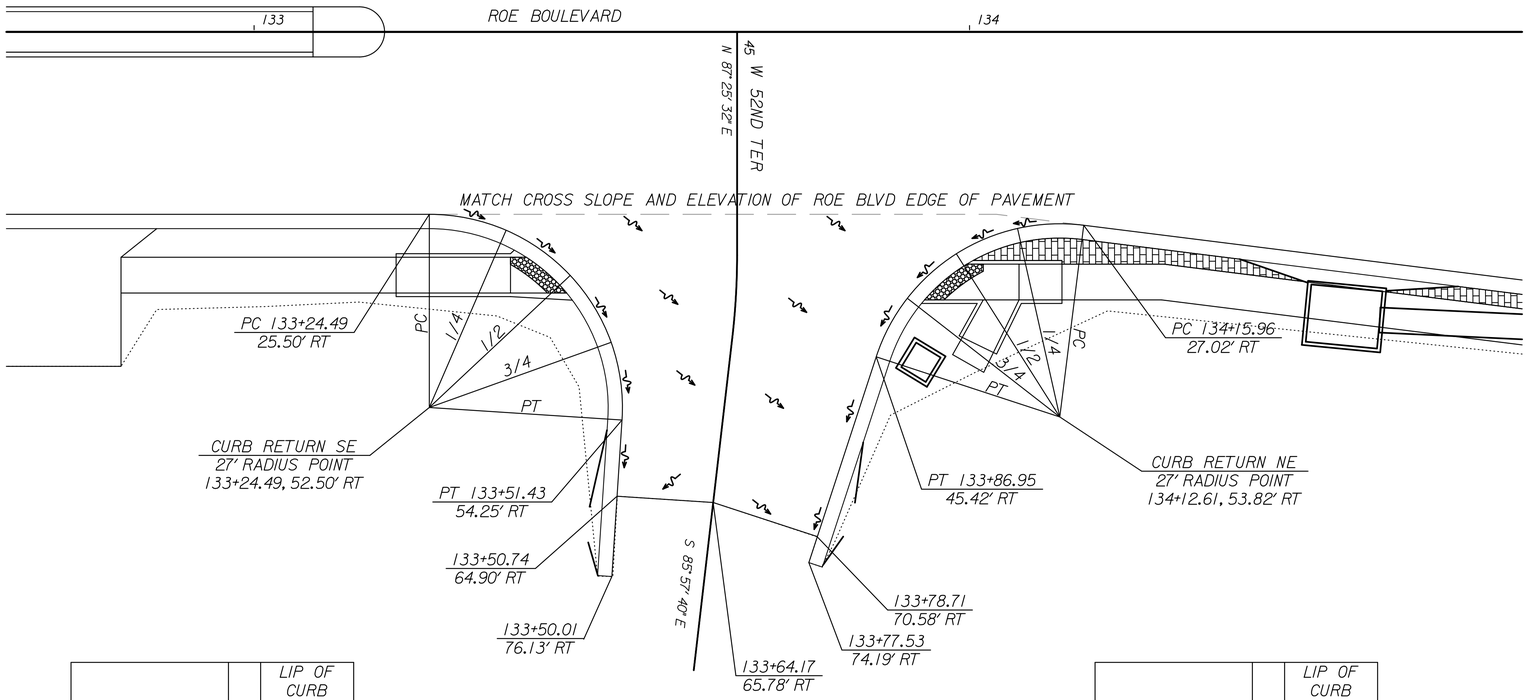
| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

Drawn By : lrosenbaum Plotted :25-APR-2019 12:56
File : 13668R1707_Rosewood&53rd.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 60 | 393 |

Scale 1" = 10'






| CURB RETURN SE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 93°43'30.56" | PC | 969.89 |
| R = 27.00' | 1/4 | 969.68 |
| L = 44.17' | 1/2 | 969.41 |
| | 3/4 | 968.78 |
| | PT | 967.66 |

| CURB RETURN NE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 78°59'58.18" | PC | 968.67 |
| R = 27.00' | 1/4 | 968.66 |
| L = 37.23' | 1/2 | 968.64 |
| | 3/4 | 968.55 |
| | PT | 967.83 |

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION/ENTRANCE DETAILS

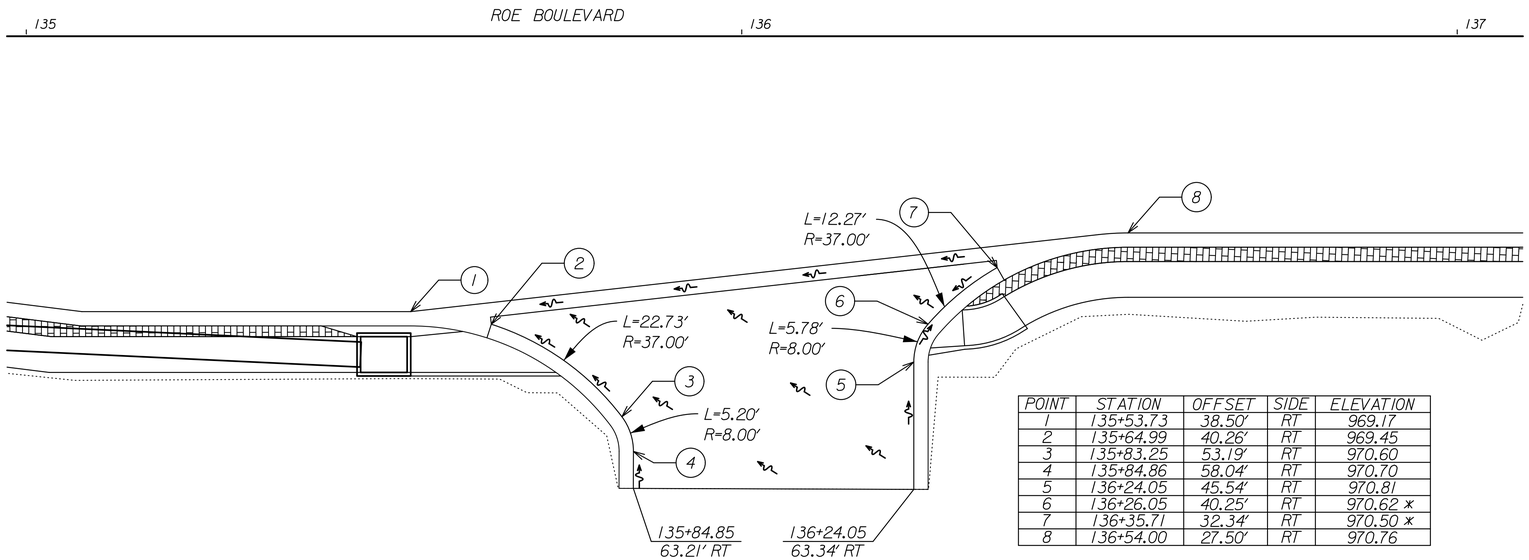
W 52ND TERRACE

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Drawn By : lrosenbaum Plotted : 25-APR-2019 12:56
File : 13668R1708_W52ndTer.dgn

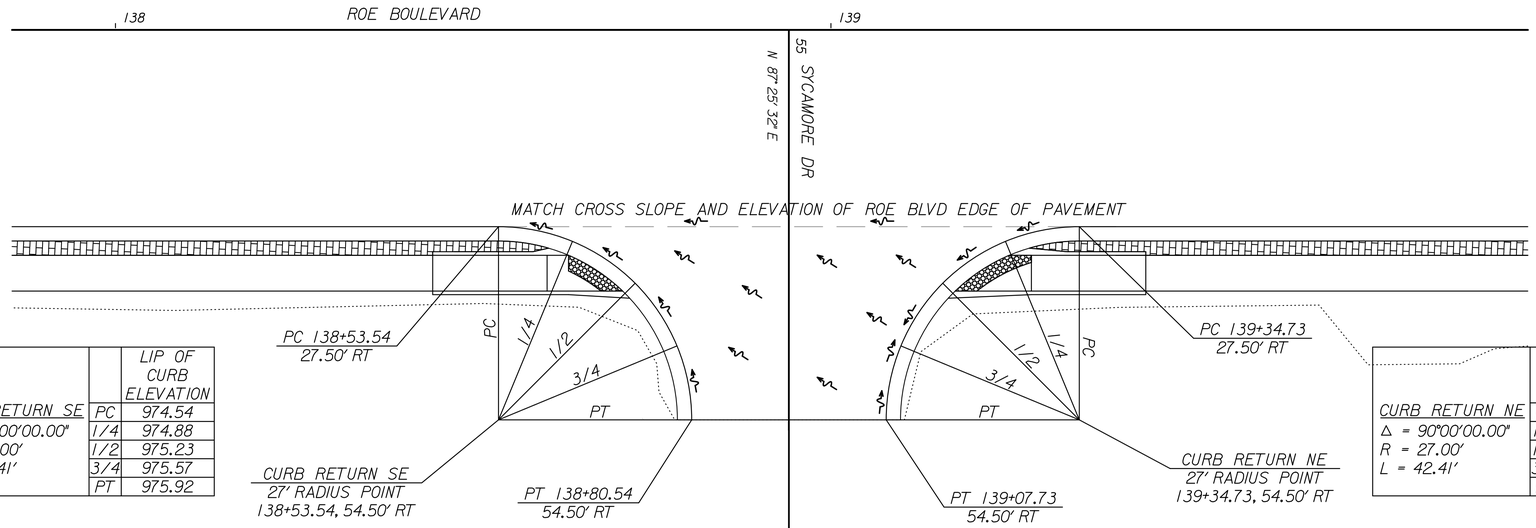
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 61 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




Scale 1" = 10'

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 135+53.73 | 38.50′ | RT | 969.17 |
| 2 | 135+64.99 | 40.26′ | RT | 969.45 |
| 3 | 135+83.25 | 53.19′ | RT | 970.60 |
| 4 | 135+84.86 | 58.04′ | RT | 970.70 |
| 5 | 136+24.05 | 45.54′ | RT | 970.81 |
| 6 | 136+26.05 | 40.25′ | RT | 970.62 * |
| 7 | 136+35.71 | 32.34′ | RT | 970.50 * |
| 8 | 136+54.00 | 27.50′ | RT | 970.76 |




| CURB RETURN SE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 90°00′00.00" | PC | 974.54 |
| R = 27.00′ | 1/4 | 974.88 |
| L = 42.41′ | 1/2 | 975.23 |
| | 3/4 | 975.57 |
| | PT | 975.92 |

| CURB RETURN NE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 90°00′00.00" | PC | 977.51 |
| R = 27.00′ | 1/4 | 977.02 |
| L = 42.41′ | 1/2 | 976.73 * |
| | 3/4 | 976.68 * |
| | PT | 976.71 * |

Scale 1" = 10'

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

*KANSAS DEPARTMENT OF TRANSPORTATION*

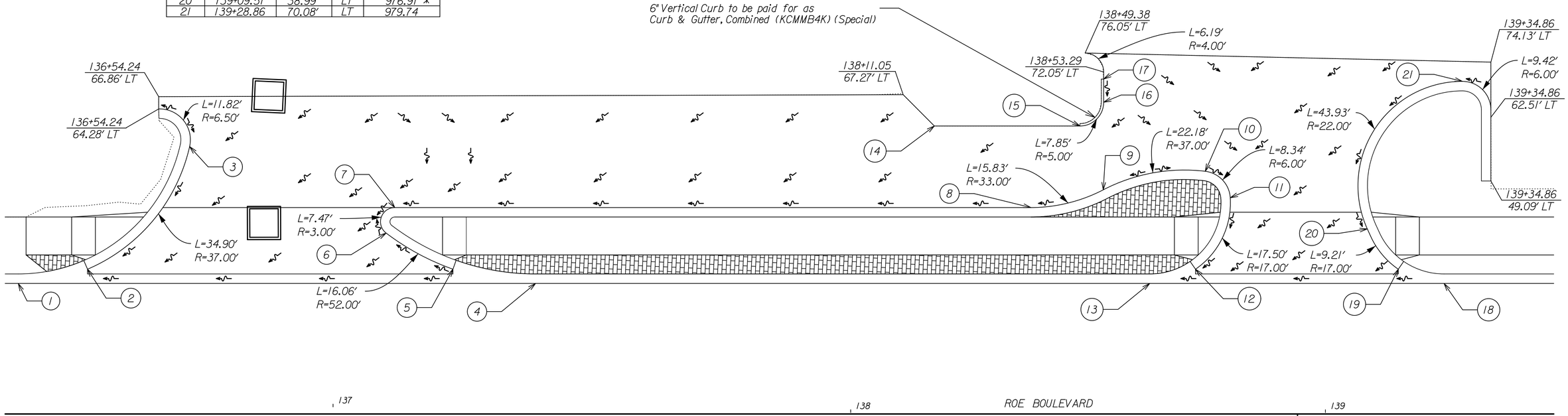
INTERSECTION/ENTRANCE DETAILS
BANK ENTRANCE &
SYCAMORE DRIVE

Drawn By : lrosenbaum Plotted : 25-APR-2019 12:56
File : 13668R1709_Sycamore.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 62 | 393 |

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 136+24.66 | 27.50' | LT | 970.34 |
| 2 | 136+39.26 | 30.50' | LT | 970.56 |
| 3 | 136+60.75 | 56.35' | LT | 971.97 |
| 4 | 137+33.63 | 27.50' | LT | 971.93 |
| 5 | 137+16.22 | 30.50' | LT | 971.72 * |
| 6 | 137+02.15 | 38.11' | LT | 971.66 * |
| 7 | 137+03.96 | 43.50' | LT | 971.66 * |
| 8 | 138+39.96 | 43.50' | LT | 974.18 |
| 9 | 138+53.19 | 47.22' | LT | 976.35 |
| 10 | 138+74.69 | 49.81' | LT | 976.97 |
| 11 | 138+79.96 | 45.47' | LT | 976.23 |
| 12 | 138+72.64 | 30.50' | LT | 975.42 |
| 13 | 138+62.99 | 27.50' | LT | 974.82 |
| 14 | 138+17.63 | 60.68' | LT | 974.00 |
| 15 | 138+48.29 | 60.68' | LT | 977.41 |
| 16 | 138+53.29 | 65.68' | LT | 978.77 |
| 17 | 138+53.29 | 70.57' | LT | 979.57 |
| 18 | 139+24.99 | 27.50' | LT | 977.20 |
| 19 | 139+15.35 | 30.50' | LT | 976.89 * |
| 20 | 139+09.51 | 38.99' | LT | 976.91 * |
| 21 | 139+28.86 | 70.08' | LT | 979.74 |

Scale 1" = 10'




NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

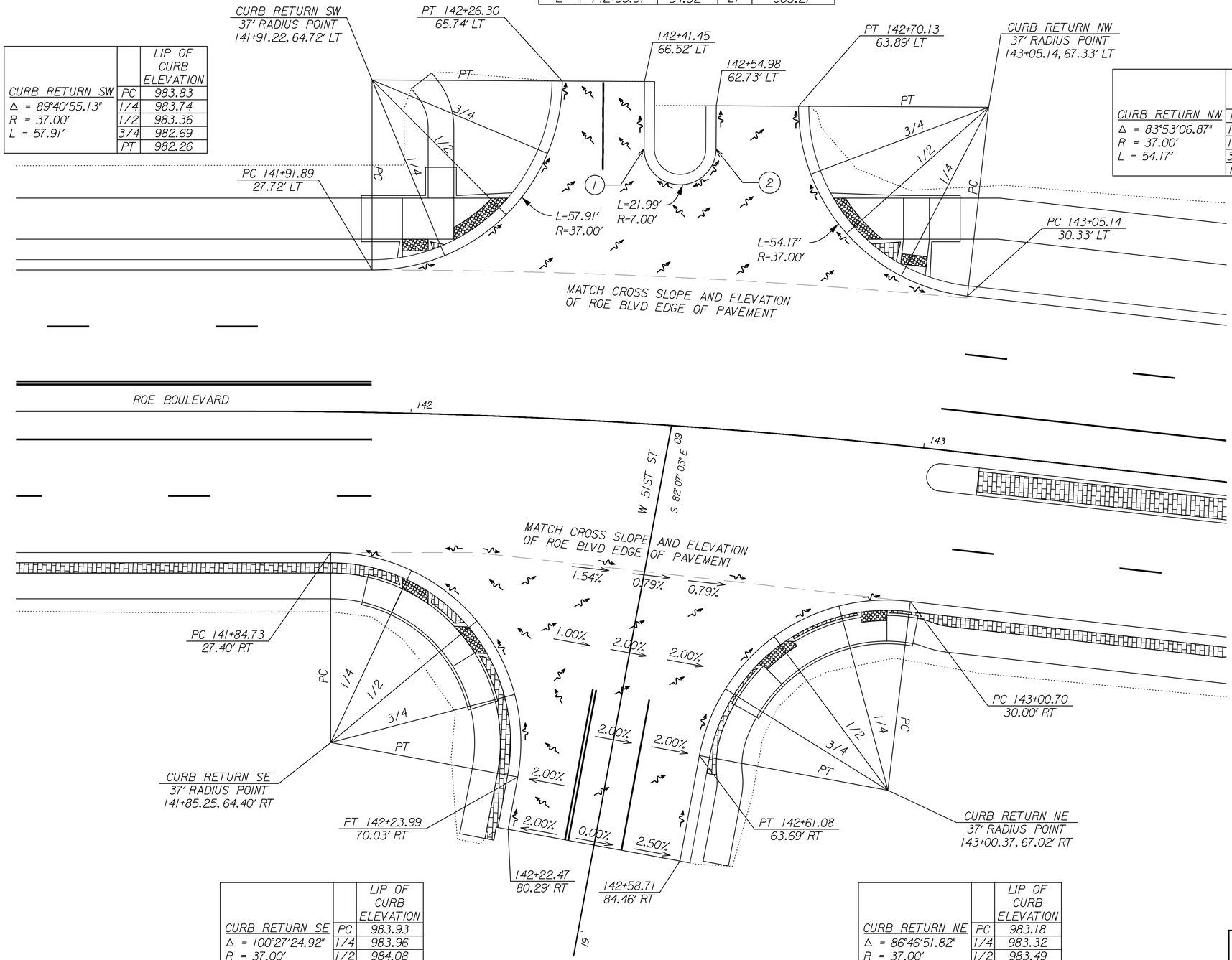
# INTERSECTION/ENTRANCE DETAILS
# CVS ENTRANCE

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:56
Drawn By : lrosenbaum
File : 13668R1709A_CVS.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 63 | 393 |

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 142+42.15 | 53.31' | LT | 982.86 |
| 2 | 142+55.51 | 54.32' | LT | 983.27 |




Scale 1" = 10'

| CURB RETURN SW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 89°40'55.13" | PC | 983.83 |
| R = 37.00' | 1/4 | 983.74 |
| L = 57.91' | 1/2 | 983.36 |
| | 3/4 | 982.69 |
| | PT | 982.26 |

| CURB RETURN NW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 83°53'06.87" | PC | 983.00 |
| R = 37.00' | 1/4 | 983.08 |
| L = 54.17' | 1/2 | 983.05 |
| | 3/4 | 982.89 |
| | PT | 982.79 |

| CURB RETURN SE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 100°27'24.92" | PC | 983.93 |
| R = 37.00' | 1/4 | 983.96 |
| L = 64.87' | 1/2 | 984.08 |
| | 3/4 | 984.37 |
| | PT | 984.76 |

| CURB RETURN NE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 86°46'51.82" | PC | 983.18 |
| R = 37.00' | 1/4 | 983.32 |
| L = 56.04' | 1/2 | 983.49 |
| | 3/4 | 983.78 |
| | PT | 984.22 |

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

# INTERSECTION/ENTRANCE DETAILS
# W 51ST STREET

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

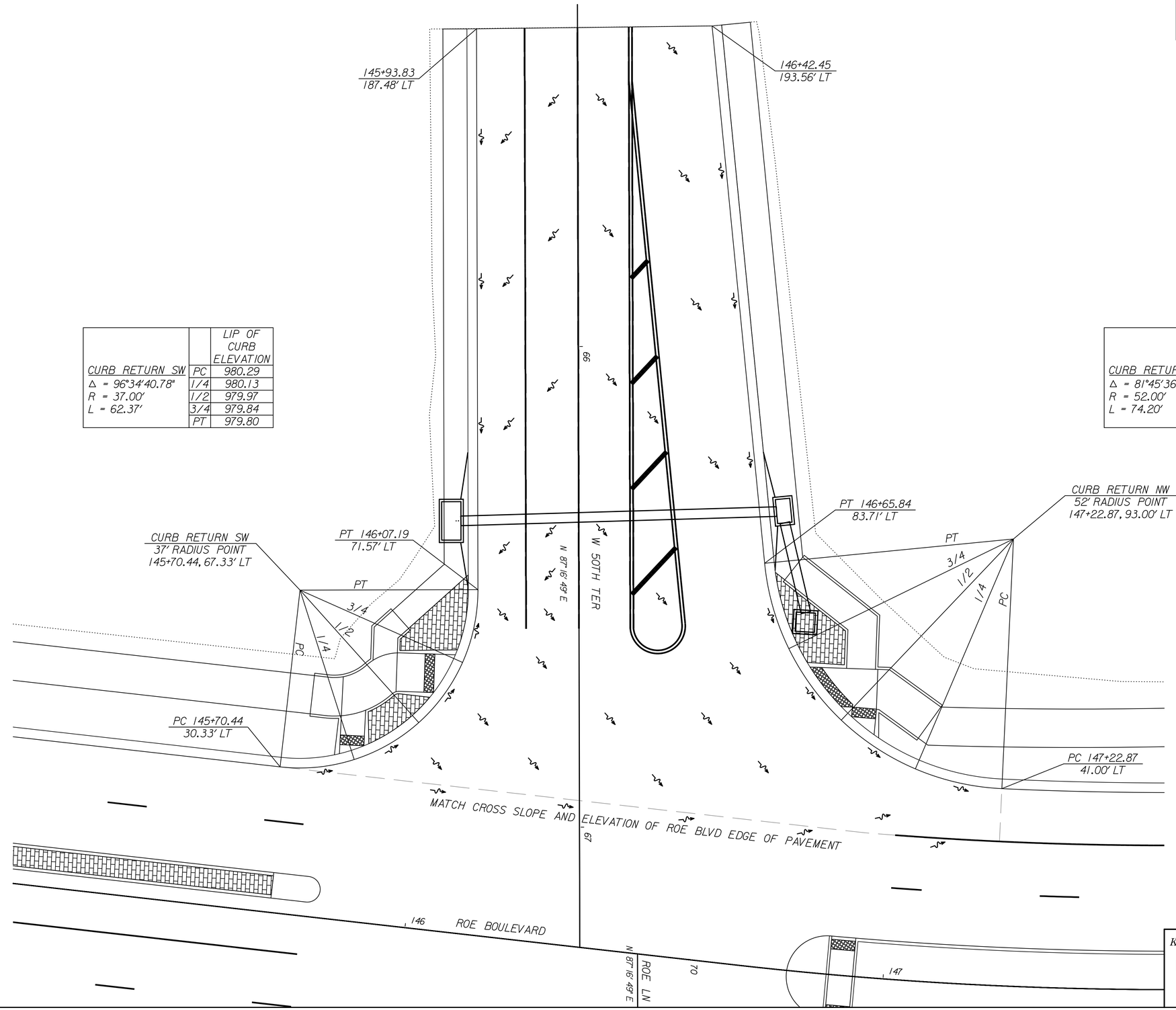
Drawn By: : Irosenbaum Plotted :25-APR-2019 12:56
File : 13668R1710_W51st.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 64 | 393 |

Scale 1" = 10'

| CURB RETURN SW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 96°34'40.78" | PC | 980.29 |
| R = 37.00' | 1/4 | 980.13 |
| L = 62.37' | 1/2 | 979.97 |
| | 3/4 | 979.84 |
| | PT | 979.80 |

| CURB RETURN NW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 81°45'36.91" | PC | 978.46 |
| R = 52.00' | 1/4 | 978.73 |
| L = 74.20' | 1/2 | 979.00 |
| | 3/4 | 979.27 |
| | PT | 979.54 |




NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

# INTERSECTION/ENTRANCE DETAILS
# W 50TH TERRACE

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Drawn By : lrosenbaum Plotted :25-APR-2019 12:56
File : 13668R1711_W50thTer.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 65 | 393 |

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 146+86.58 | 146.52′ | RT | 973.23 |
| 2 | 147+30.42 | 182.63′ | RT | 968.55 |
| 3 | 147+43.42 | 154.77′ | RT | 968.55 |
| 4 | 146+80.36 | 32.07′ | RT | 979.55 |
| 5 | 147+03.04 | 32.71′ | RT | 979.54 |
| 6 | 147+04.27 | 36.17′ | RT | 979.08 |
| 7 | 146+86.72 | 66.60′ | RT | 977.15 * |
| 8 | 146+83.17 | 66.64′ | RT | 977.51 * |
| 9 | 146+80.38 | 48.47′ | RT | 978.69 |
| 10 | 146+78.43 | 34.27′ | RT | 979.03 |

| CURB RETURN NE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 139°59′32.02″ | PC | 979.35 |
| R = 57.00′ | 1/4 | 979.04 |
| L = 139.27′ | 1/2 | 976.93 |
| | 3/4 | 974.53 |
| | PT | 972.08 |

| CURB RETURN SE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 68°02′31.55″ | PC | 979.96 |
| R = 52.00′ | 1/4 | 979.76 |
| L = 61.75′ | 1/2 | 979.35 |
| | 3/4 | 978.86 |
| | PT | 978.37 |

PC 147+46.56
31.00′ RT

CURB RETURN NE
57′ RADIUS POINT
147+46.56, 88.00′ RT

PC

1/4

1/2

3/4

PT

147+63.38
168.99′ RT

147+50.01
196.45′ RT

PT 147+15.11
132.38′ RT

N 28° 32′ 06″ E

L=40.25′
R=234.00′

L=64.16′
R=266.00′

L=105.69′
R=205.00′

L=4.70′
R=2.00′

L=36.14′
R=69.00′

L=5.17′
R=2.00′

L=18.55′
R=99.00′

L=3.37′
R=2.00′

71

70 N 87° 16′ 49″ E
ROE LN

67 W 50TH TER

146

ROE BOULEVARD

MATCH CROSS SLOPE AND ELEVATION OF ROE BLVD EDGE OF PAVEMENT

PT 146+27.08
62.55′ RT

PC 145+78.86
30.00′ RT

CURB RETURN SE
57′ RADIUS POINT
145+78.86, 82.00′ RT

Scale 1″ = 10′

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

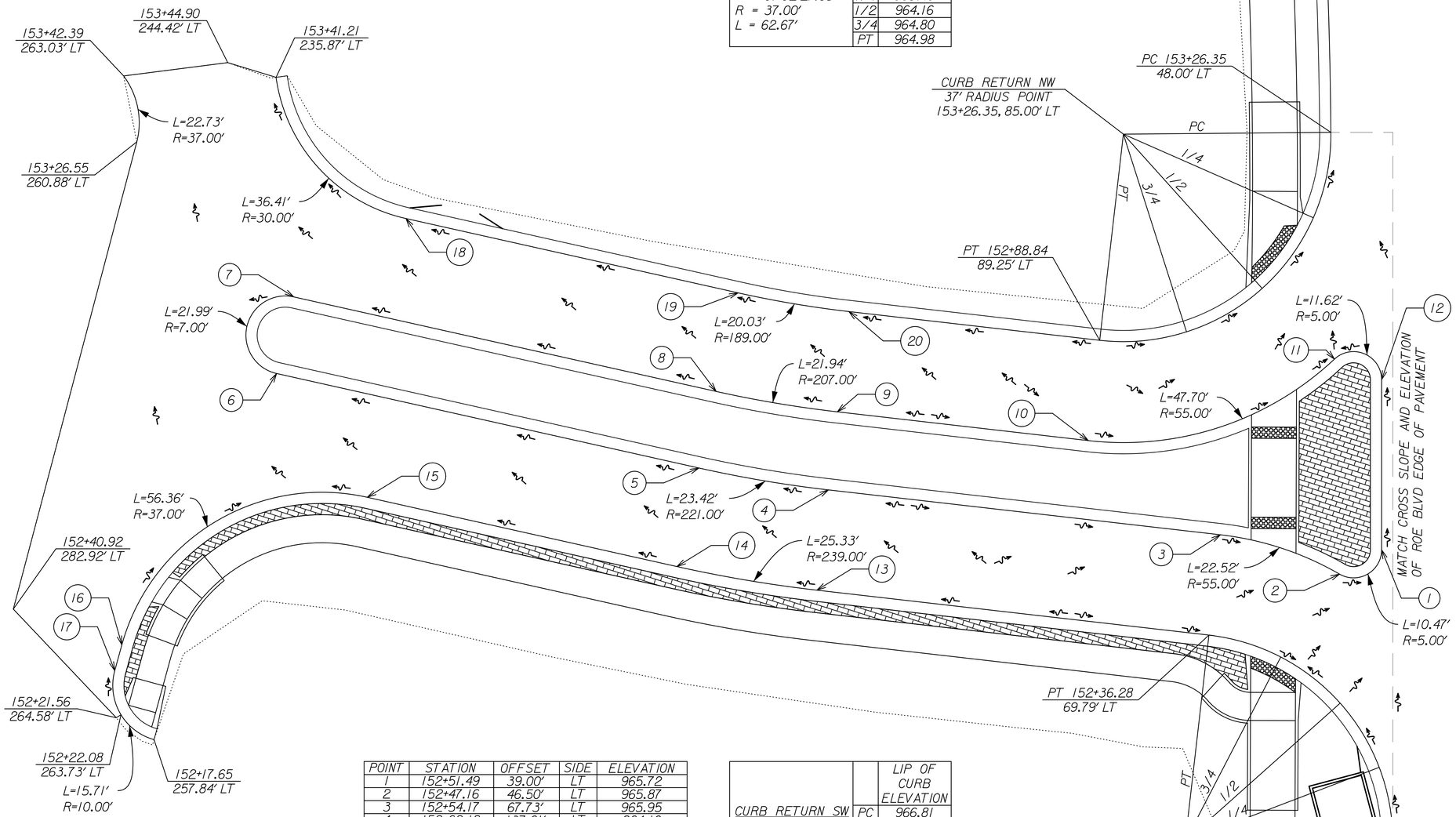
# INTERSECTION/ENTRANCE DETAILS
# ROE LANE

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

Drawn By : lrosenbaum Plotted : 25-APR-2019 12:56
File : 13668R1712_RoeLn.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 66 | 393 |

| CURB RETURN NW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 97°02'27.65" | PC | 962.84 |
| R = 37.00' | 1/4 | 963.49 |
| L = 62.67' | 1/2 | 964.16 |
| | 3/4 | 964.80 |
| | PT | 964.98 |




| CURB RETURN SW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 83°27'32.42" | PC | 966.81 |
| R = 37.00' | 1/4 | 966.44 |
| L = 53.90' | 1/2 | 966.12 * |
| | 3/4 | 966.06 * |
| | PT | 966.19 |

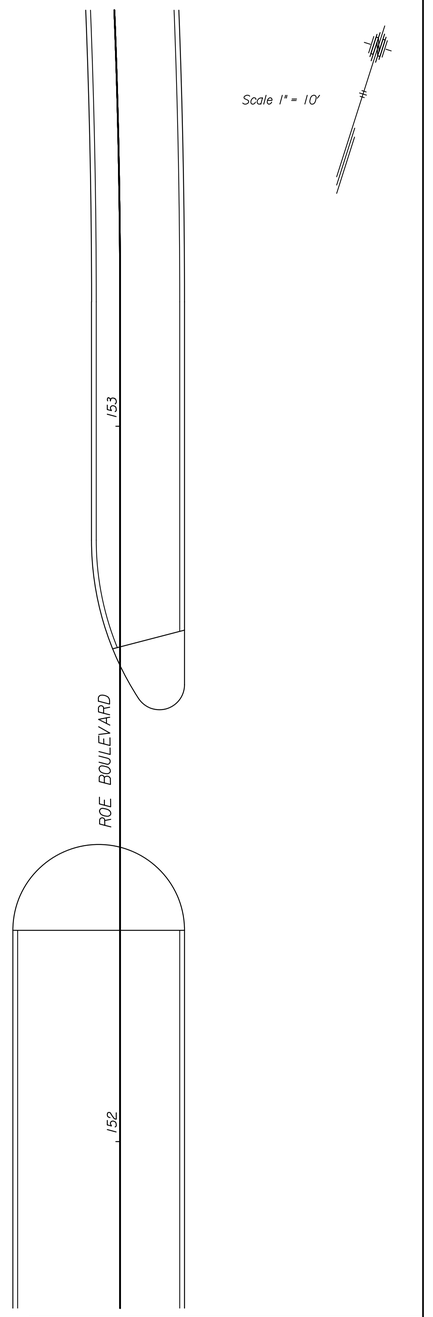
| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 152+51.49 | 39.00' | LT | 965.72 |
| 2 | 152+47.16 | 46.50' | LT | 965.87 |
| 3 | 152+54.17 | 67.73' | LT | 965.95 |
| 4 | 152+62.18 | 137.61' | LT | 964.16 |
| 5 | 152+66.07 | 160.70' | LT | 964.16 |
| 6 | 152+82.92 | 235.97' | LT | 964.74 * |
| 7 | 152+96.58 | 232.93' | LT | 964.16 * |
| 8 | 152+79.74 | 157.64' | LT | 965.20 |
| 9 | 152+76.09 | 136.02' | LT | 965.52 |
| 10 | 152+70.96 | 91.30' | LT | 965.62 |
| 11 | 152+85.42 | 47.36' | LT | 964.16 * |
| 12 | 152+81.83 | 39.00' | LT | 964.96 * |
| 13 | 152+44.30 | 139.66' | LT | 965.85 |
| 14 | 152+48.51 | 164.63' | LT | 965.26 |
| 15 | 152+60.68 | 219.00' | LT | 964.44 * |
| 16 | 152+34.54 | 263.68' | LT | 964.80 * |
| 17 | 152+29.94 | 264.84' | LT | 964.90 |
| 18 | 153+10.55 | 212.92' | LT | 963.75 |
| 19 | 152+97.30 | 153.71' | LT | 964.29 |
| 20 | 152+93.97 | 133.97' | LT | 964.50 |

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB




KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION/ENTRANCE DETAILS

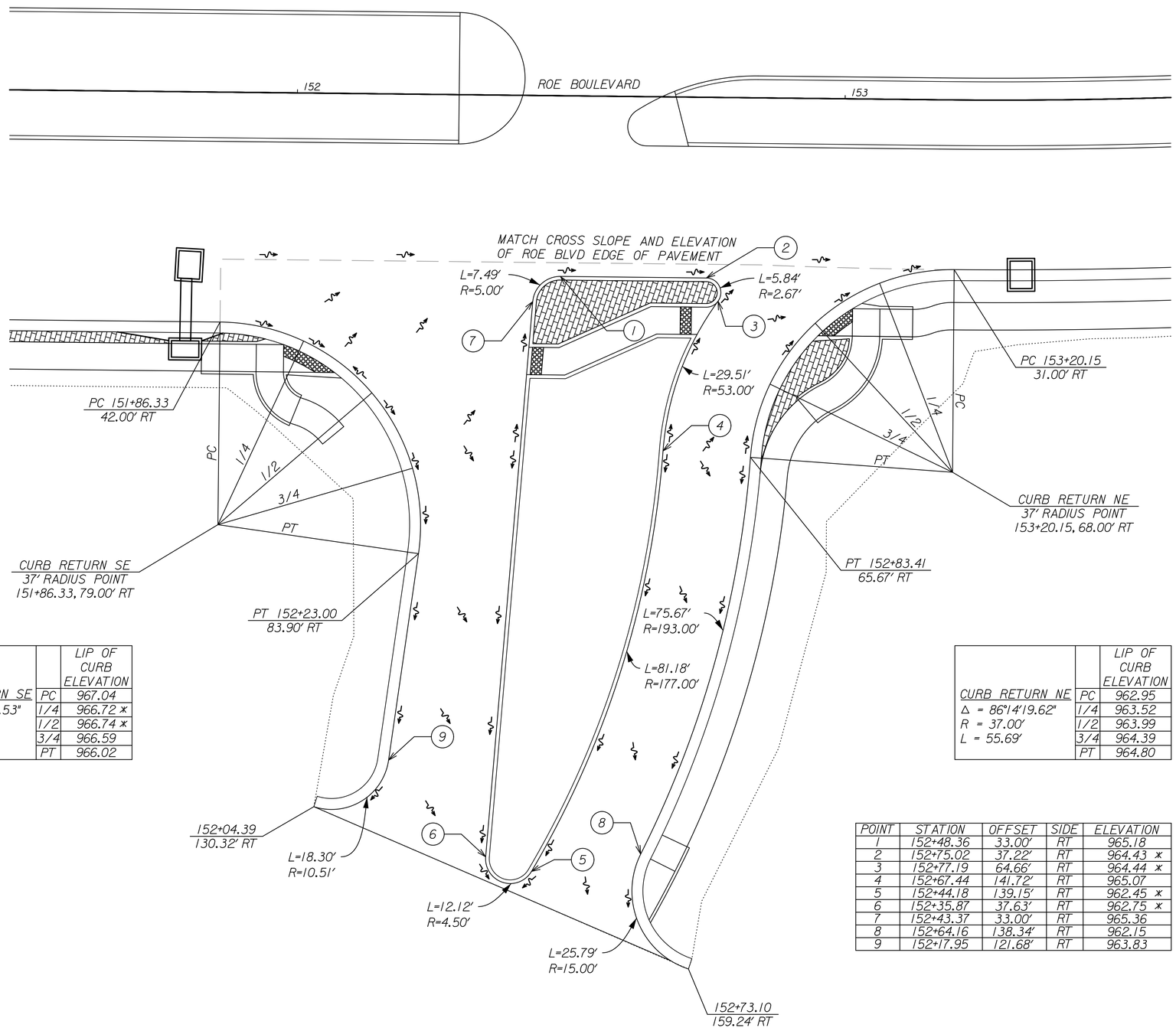
LOWE'S ENTRANCE

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Drawn By : lrosenbaum Plotted :25-APR-2019 12:56
File : 13668R1712A_Lowes.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 67 | 393 |

Scale 1" = 10'




| CURB RETURN SE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 97°36'49.53" | PC | 967.04 |
| R = 37.00' | 1/4 | 966.72 * |
| L = 63.04' | 1/2 | 966.74 * |
| | 3/4 | 966.59 |
| | PT | 966.02 |

| CURB RETURN NE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 86°14'19.62" | PC | 962.95 |
| R = 37.00' | 1/4 | 963.52 |
| L = 55.69' | 1/2 | 963.99 |
| | 3/4 | 964.39 |
| | PT | 964.80 |

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 152+48.36 | 33.00' | RT | 965.18 |
| 2 | 152+75.02 | 37.22' | RT | 964.43 * |
| 3 | 152+77.19 | 64.66' | RT | 964.44 * |
| 4 | 152+67.44 | 141.72' | RT | 965.07 |
| 5 | 152+44.18 | 139.15' | RT | 962.45 * |
| 6 | 152+35.87 | 37.63' | RT | 962.75 * |
| 7 | 152+43.37 | 33.00' | RT | 965.36 |
| 8 | 152+64.16 | 138.34' | RT | 962.15 |
| 9 | 152+17.95 | 121.68' | RT | 963.83 |

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

# INTERSECTION/ENTRANCE DETAILS
# WALGREENS/PHILLIPS 66 ENTRANCE

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

Drawn By : lrosenbaum Plotted : 25-APR-2019 12:56
File : 13668R1712B_Walgreens.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 68 | 393 |

Scale 1" = 10'

| CURB RETURN SW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 60°11'34.98" | PC | 956.34 |
| R = 52.00' | 1/4 | 956.41 |
| L = 54.63' | 1/2 | 956.45 |
| | 3/4 | 956.50 |
| | PT | 956.58 |

| CURB RETURN NW | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 119°48'25.02" | PC | 957.32 |
| R = 52.00' | 1/4 | 956.66 |
| L = 108.73' | 1/2 | 956.10 |
| | 3/4 | 957.45 |
| | PT | 958.61 |

158+52.58
173.35' LT

158+81.22
156.95' LT

PT 158+63.40
125.85' LT

CURB RETURN SW
52' RADIUS POINT
157+44.33, 89.00' LT

CURB RETURN NW
52' RADIUS POINT
159+08.52, 100.00' LT

PT 157+89.45
63.15' LT

PC 157+44.33
37.00' LT

PC 159+08.52
48.00' LT

2.00%
0.00%
0.50%
2.00%
2.00%
2.00%
2.00%
2.00%
0.43%
0.17%

N 87° 17' 08" W 360.76'

L=6.14'
R=2.67'

L=41.23'
R=70.00'

L=5.58'
R=2.67'

L=6.73'
R=2.67'

SKYLINE DR

MATCH CROSS SLOPE AND ELEVATION OF ROE BLVD EDGE OF PAVEMENT

ROE BOULEVARD

W 48TH ST

N 32° 31' 16" W

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 158+20.55 | 39.00' | LT | 956.47 * |
| 2 | 158+18.24 | 42.99' | LT | 956.65 * |
| 3 | 158+37.71 | 76.98' | LT | 957.21 |
| 4 | 158+42.57 | 76.52' | LT | 956.88 * |
| 5 | 158+66.73 | 43.84' | LT | 957.36 * |
| 6 | 158+65.19 | 39.00' | LT | 957.01 |

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION/ENTRANCE DETAILS

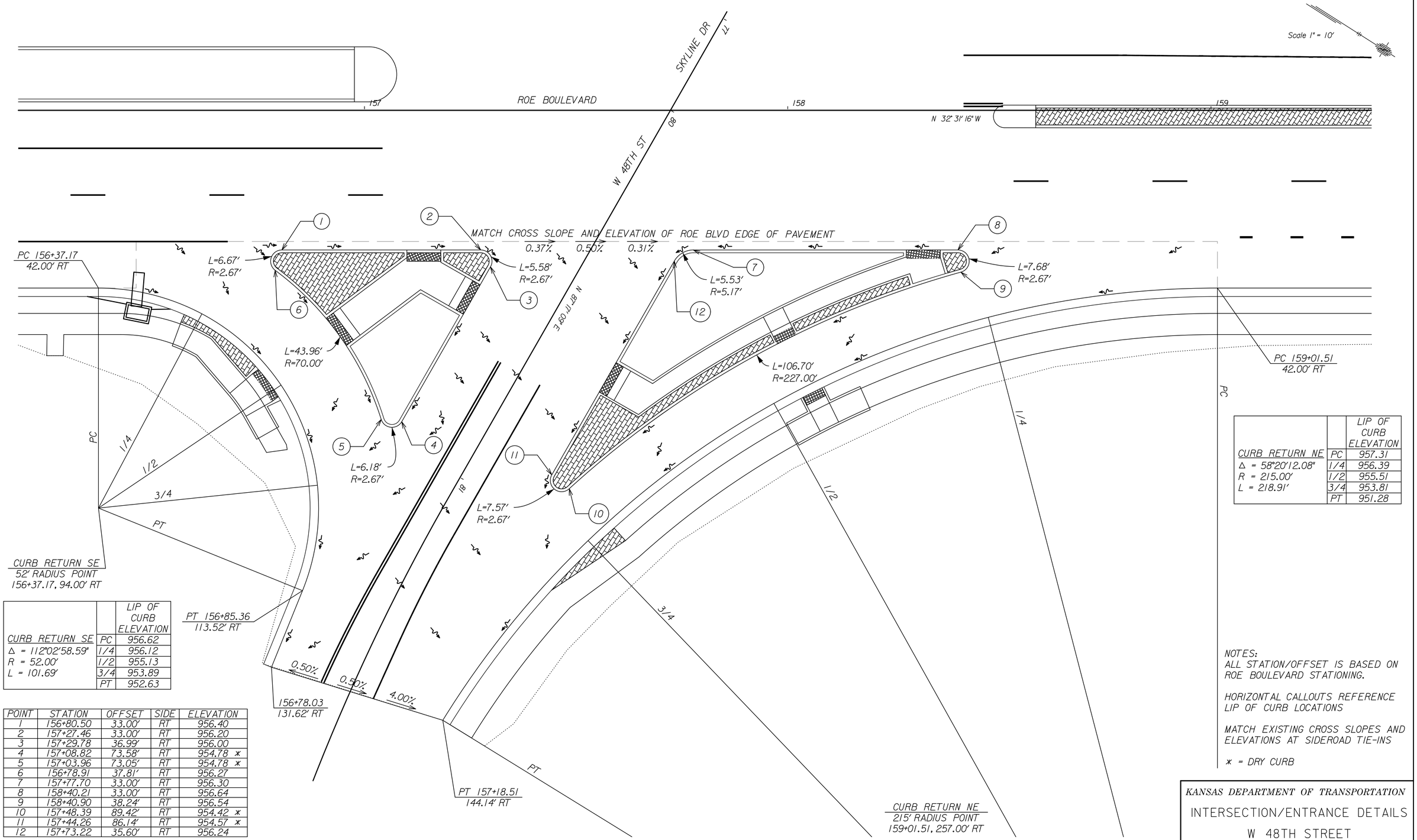
SKYLINE DRIVE

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Drawn By : lrosenbaum
File : 13668R1713_Skyline.dgn
Plotted : 25-APR-2019 12:56

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 69 | 393 |

Scale 1" = 10'




| CURB RETURN SE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 112°02'58.59" | PC | 956.62 |
| R = 52.00' | 1/4 | 956.12 |
| L = 101.69' | 1/2 | 955.13 |
| | 3/4 | 953.89 |
| | PT | 952.63 |

| CURB RETURN NE | | LIP OF CURB ELEVATION |
|---|---|---|
| Δ = 58°20'12.08" | PC | 957.31 |
| R = 215.00' | 1/4 | 956.39 |
| L = 218.91' | 1/2 | 955.51 |
| | 3/4 | 953.81 |
| | PT | 951.28 |

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 156+80.50 | 33.00' | RT | 956.40 |
| 2 | 157+27.46 | 33.00' | RT | 956.20 |
| 3 | 157+29.78 | 36.99' | RT | 956.00 |
| 4 | 157+08.82 | 73.58' | RT | 954.78 * |
| 5 | 157+03.96 | 73.05' | RT | 954.78 * |
| 6 | 156+78.91 | 37.81' | RT | 956.27 |
| 7 | 157+77.70 | 33.00' | RT | 956.30 |
| 8 | 158+40.21 | 33.00' | RT | 956.64 |
| 9 | 158+40.90 | 38.24' | RT | 956.54 |
| 10 | 157+48.39 | 89.42' | RT | 954.42 * |
| 11 | 157+44.26 | 86.14' | RT | 954.57 * |
| 12 | 157+73.22 | 35.60' | RT | 956.24 |

NOTES:
ALL STATION/OFFSET IS BASED ON ROE BOULEVARD STATIONING.

HORIZONTAL CALLOUTS REFERENCE LIP OF CURB LOCATIONS

MATCH EXISTING CROSS SLOPES AND ELEVATIONS AT SIDEROAD TIE-INS

* = DRY CURB

KANSAS DEPARTMENT OF TRANSPORTATION

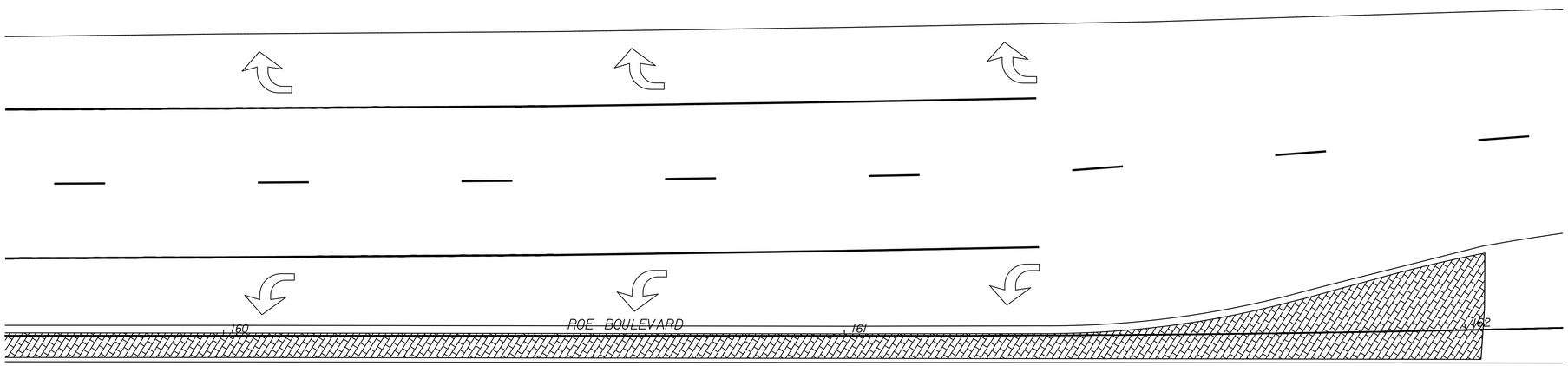
# INTERSECTION/ENTRANCE DETAILS
# W 48TH STREET

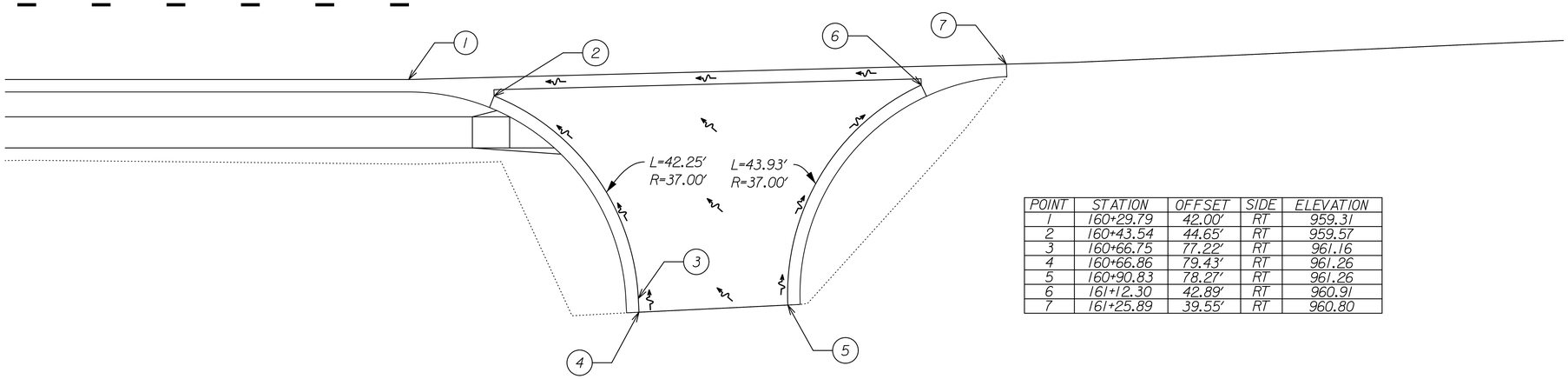
DATE
BY
REFERENCES NOTED
REFERENCES CHECKED

Plotted : 25-APR-2019 12:56
Drawn By : Irosenbaum
File : 13668R1714_W48th.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 70 | 393 |

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |




| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 160+29.79 | 42.00' | RT | 959.31 |
| 2 | 160+43.54 | 44.65' | RT | 959.57 |
| 3 | 160+66.75 | 77.22' | RT | 961.16 |
| 4 | 160+66.86 | 79.43' | RT | 961.26 |
| 5 | 160+90.83 | 78.27' | RT | 961.26 |
| 6 | 161+12.30 | 42.89' | RT | 960.91 |
| 7 | 161+25.89 | 39.55' | RT | 960.80 |

KANSAS DEPARTMENT OF TRANSPORTATION

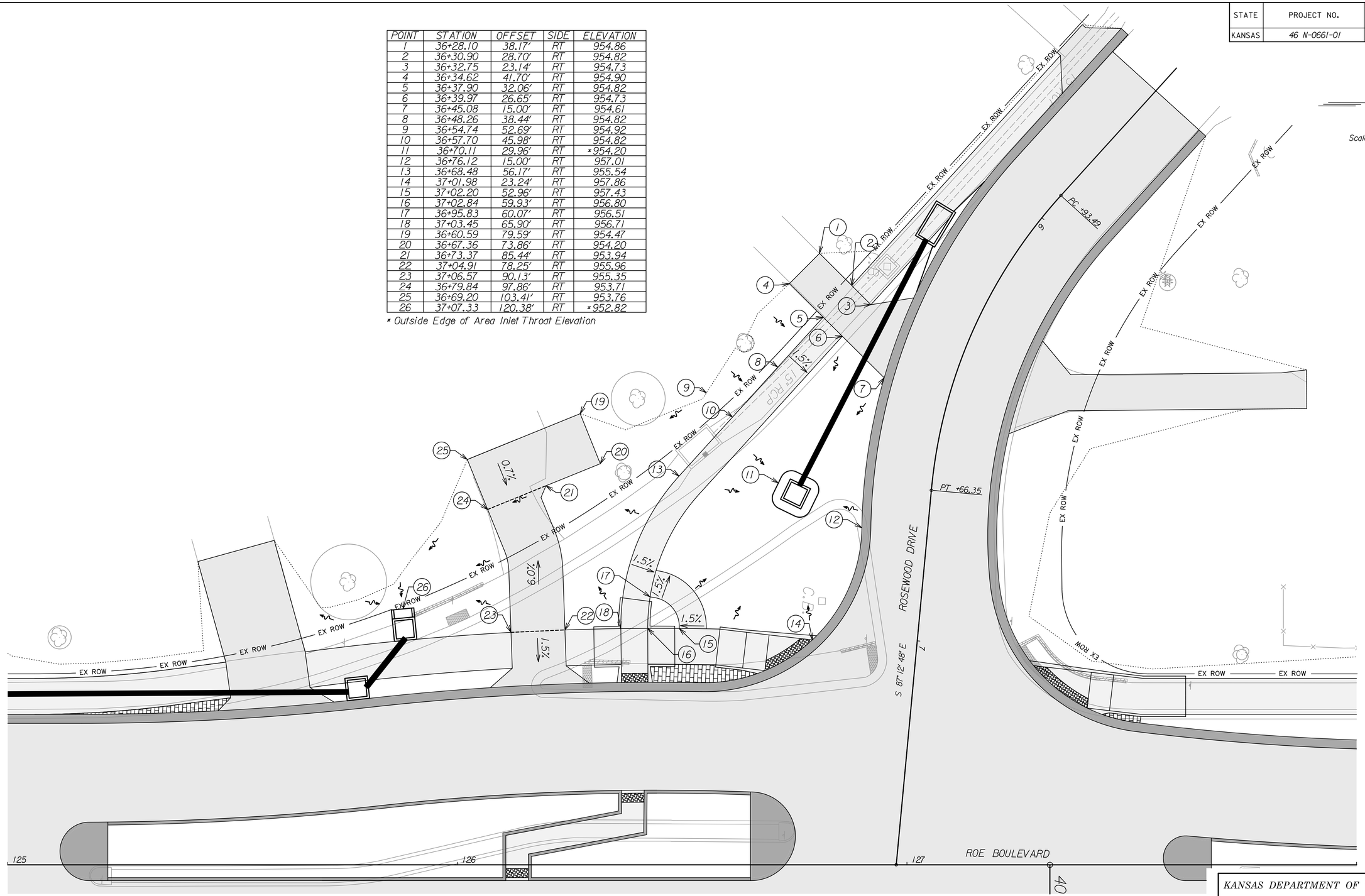
# INTERSECTION/ENTRANCE DETAILS
# PUBLIC WORKS BUILDING ENTRANCE

Drawn By : lrosenbaum Plotted : 25-APR-2019 12:56
File : 13668R1715_PubWorksBuild.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 71 | 393 |

| POINT | STATION | OFFSET | SIDE | ELEVATION |
|---|---|---|---|---|
| 1 | 36+28.10 | 38.17' | RT | 954.86 |
| 2 | 36+30.90 | 28.70' | RT | 954.82 |
| 3 | 36+32.75 | 23.14' | RT | 954.73 |
| 4 | 36+34.62 | 41.70' | RT | 954.90 |
| 5 | 36+37.90 | 32.06' | RT | 954.82 |
| 6 | 36+39.97 | 26.65' | RT | 954.73 |
| 7 | 36+45.08 | 15.00' | RT | 954.61 |
| 8 | 36+48.26 | 38.44' | RT | 954.82 |
| 9 | 36+54.74 | 52.69' | RT | 954.92 |
| 10 | 36+57.70 | 45.98' | RT | 954.82 |
| 11 | 36+70.11 | 29.96' | RT | *954.20 |
| 12 | 36+76.12 | 15.00' | RT | 957.01 |
| 13 | 36+68.48 | 56.17' | RT | 955.54 |
| 14 | 37+01.98 | 23.24' | RT | 957.86 |
| 15 | 37+02.20 | 52.96' | RT | 957.43 |
| 16 | 37+02.84 | 59.93' | RT | 956.80 |
| 17 | 36+95.83 | 60.07' | RT | 956.51 |
| 18 | 37+03.45 | 65.90' | RT | 956.71 |
| 19 | 36+60.59 | 79.59' | RT | 954.47 |
| 20 | 36+67.36 | 73.86' | RT | 954.20 |
| 21 | 36+73.37 | 85.44' | RT | 953.94 |
| 22 | 37+04.91 | 78.25' | RT | 955.96 |
| 23 | 37+06.57 | 90.13' | RT | 955.35 |
| 24 | 36+79.84 | 97.86' | RT | 953.71 |
| 25 | 36+69.20 | 103.41' | RT | 953.76 |
| 26 | 37+07.33 | 120.38' | RT | *952.82 |

* Outside Edge of Area Inlet Throat Elevation




KANSAS DEPARTMENT OF TRANSPORTATION

ROSEWOOD DRIVE

GRADING DETAILS

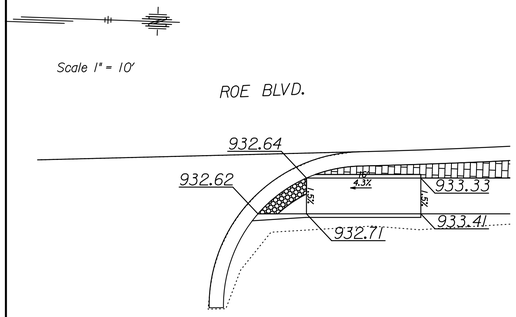
| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

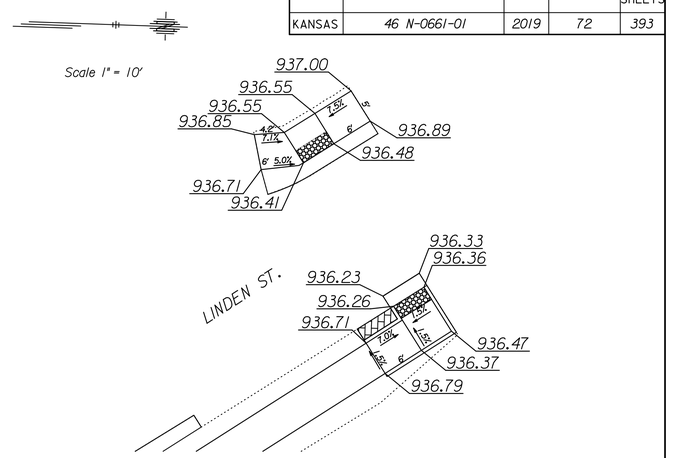
Drawn By : lrosenbaum Plotted : 25-APR-2019 12:56
File : 13668R1716_RosewoodSW.dgn

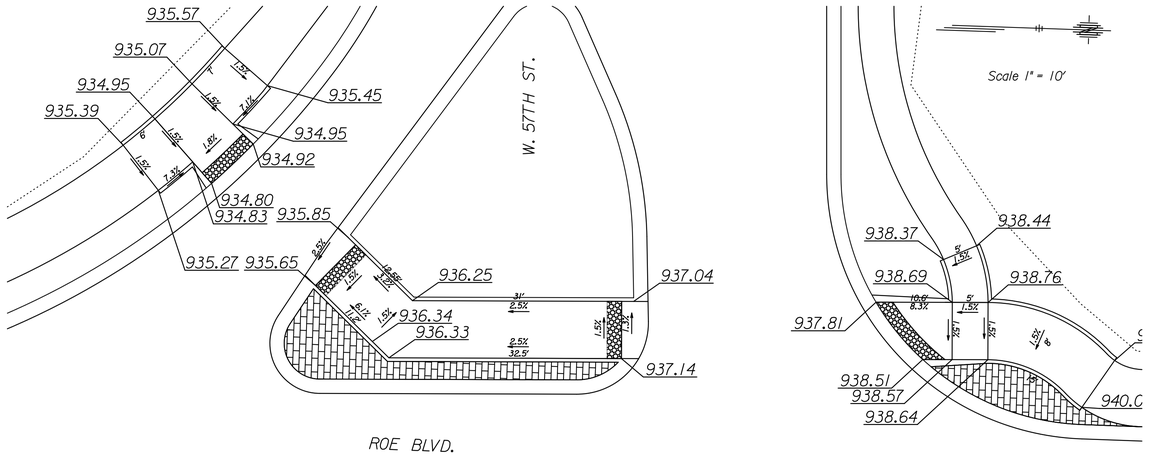
GENERAL NOTES:

ALL CURB SHOWN INTEGRAL TO ADA RAMPS SHALL
BE CONSIDERED SUBSIDIARY TO BID ITEM "SIDEWALK RAMP".

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 72 | 393 |

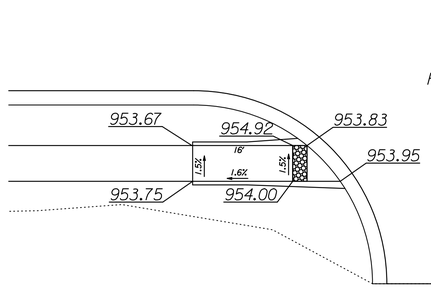


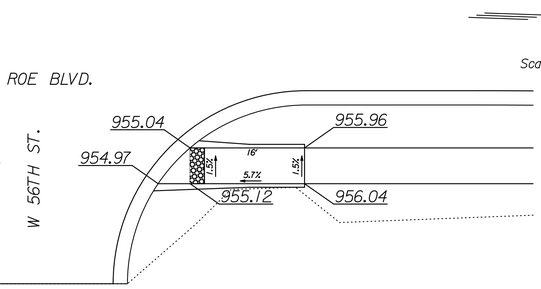



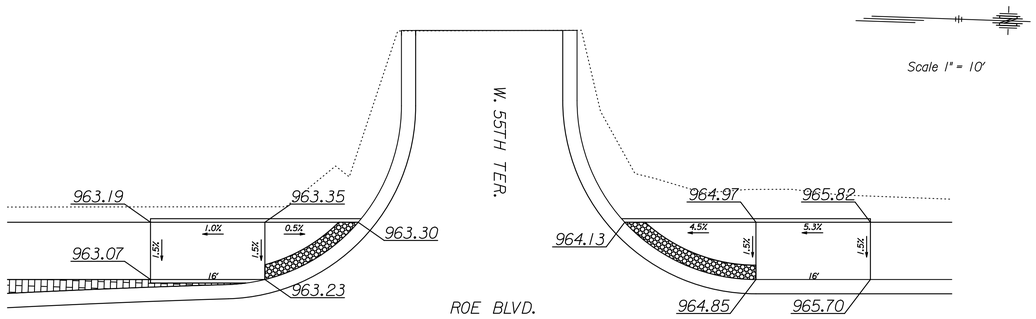



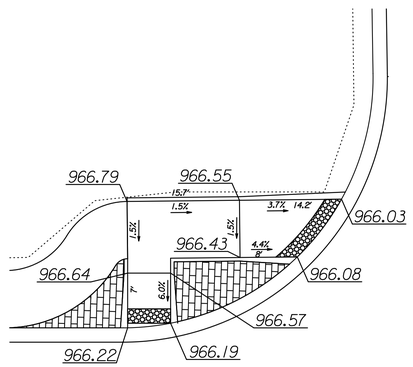


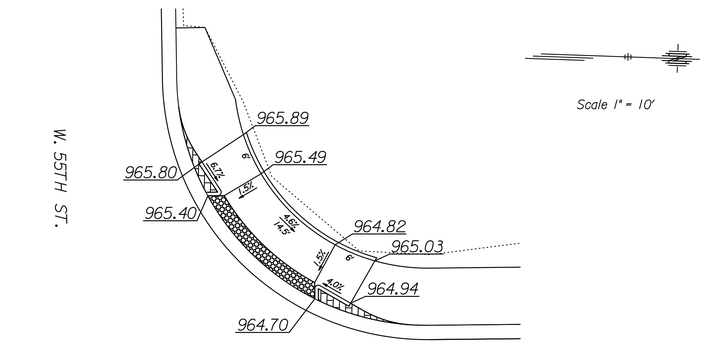




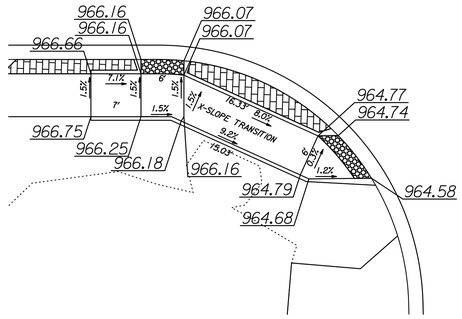

KANSAS DEPARTMENT OF TRANSPORTATION
SIDEWALK RAMP DETAIL
SHEET 1 OF 5

| DATE | BY |
|---|---|
| | |
| | |
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

Plotted :25-APR-2019 12:56
Drawn By : lrosenbaum
File : 13668R1730.dgn

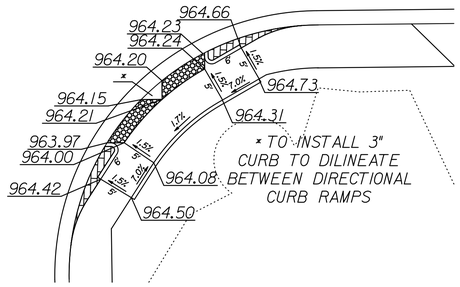
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 73 | 393 |

Scale 1" = 10'



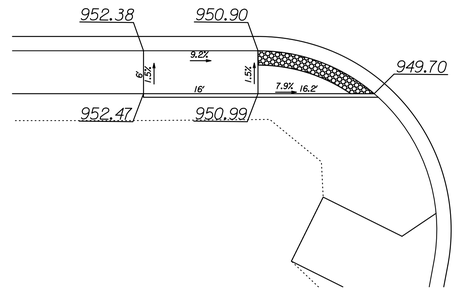

ROE BLVD.

W. 55TH ST.



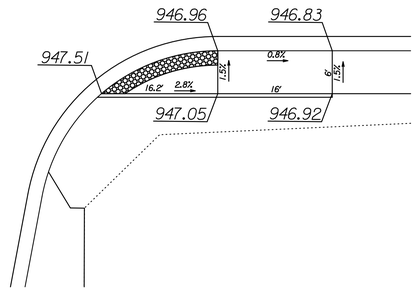

× TO INSTALL 3" CURB TO DILINEATE BETWEEN DIRECTIONAL CURB RAMPS

Scale 1" = 10'

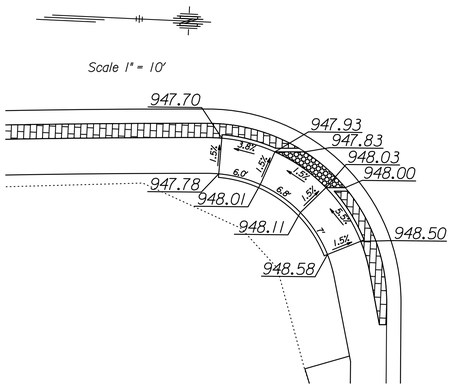



ROE BLVD.

W. 54TH TER.

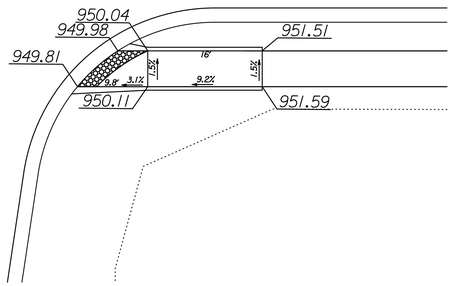



Scale 1" = 10'

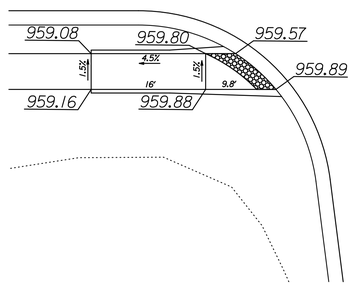



ROE BLVD.

W. 54TH ST.

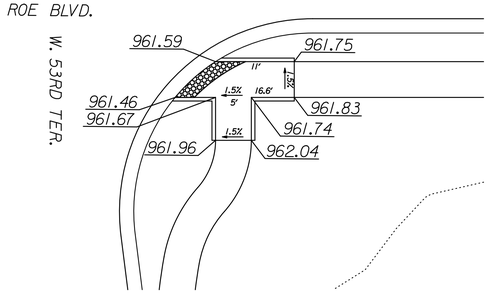



Scale 1" = 10'




ROE BLVD.

W. 53RD TER.




Plotted : 25-APR-2019 12:56

Drawn By : Irosenbaum
File : 13668R1730.dgn

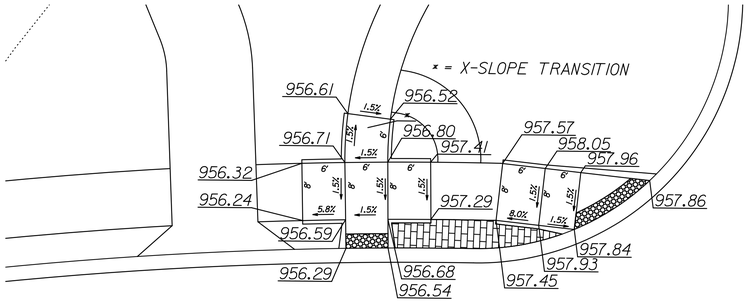
| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

*KANSAS DEPARTMENT OF TRANSPORTATION*

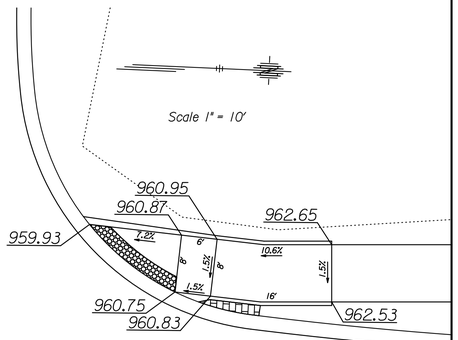
SIDEWALK RAMP DETAIL

SHEET 2 OF 5

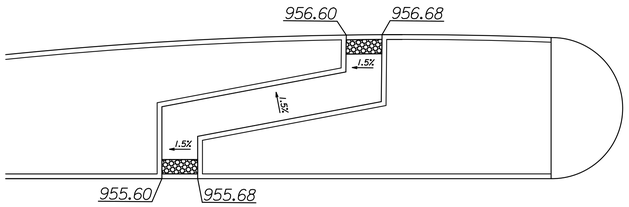
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 74 | 393 |



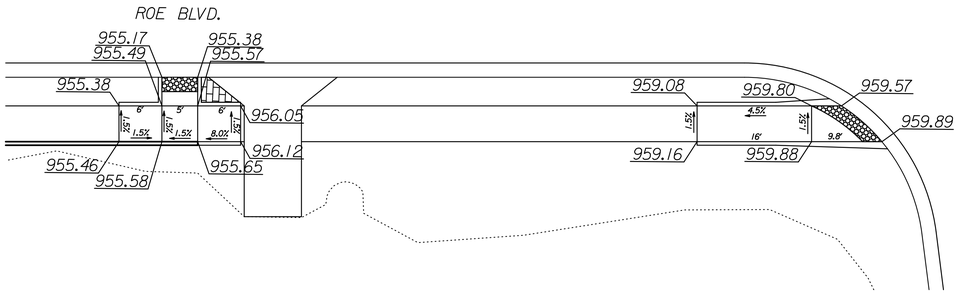

ROSEWOOD DR.




ROE BLVD.



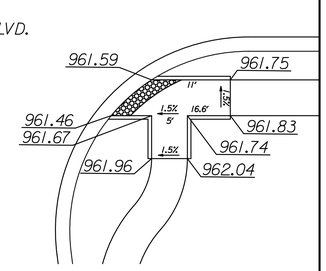

ROE BLVD.

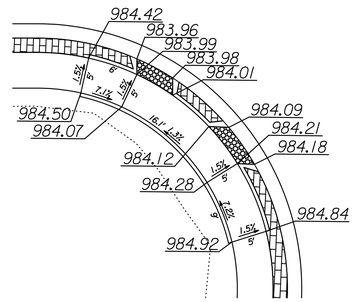



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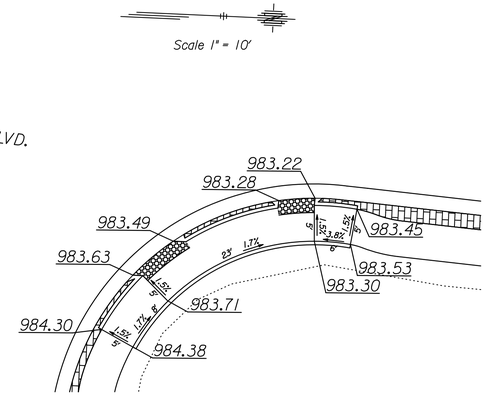



W. 53RD TER.

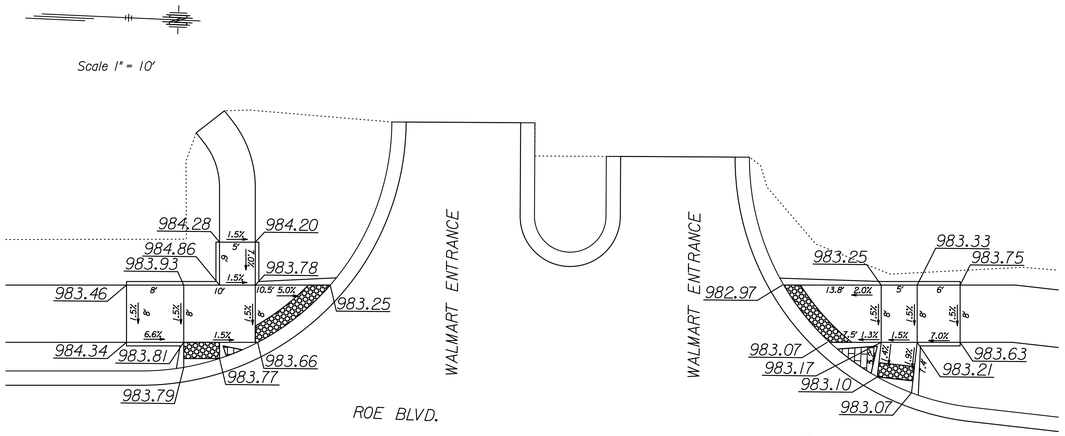



ROE BLVD.




W. 51ST ST.




WALMART ENTRANCE

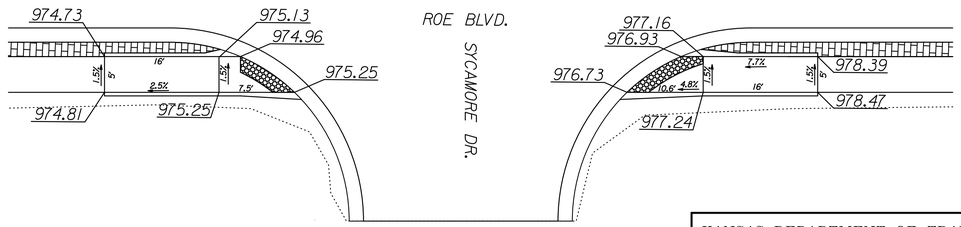



WALMART ENTRANCE

ROE BLVD.

ROE BLVD.




ROE BLVD.

SYCAMORE DR.

*KANSAS DEPARTMENT OF TRANSPORTATION*

SIDEWALK RAMP DETAIL

SHEET 3 OF 5

DATE
BY
REFERENCES NOTED
REFERENCES CHECKED
REFERENCES

Plotted : 25-APR-2019 12:56

Drawn By : lrosenbaum
File : 13668R1730.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 75 | 393 |

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:56

Drawn By : lrosenbaum
File : 13668R1730.dgn

Scale 1" = 10'

ROE BLVD.

ROE LN.

979.49 978.45 979.57 978.52

979.95 979.88 979.81 979.87 980.37 980.45 980.03 979.95 979.04 978.95 978.96 978.78 979.12 979.04 979.15 979.23

979.56 978.55 978.85 978.77 978.79 978.58 978.90 978.50

979.58 979.50 979.24 980.00 979.58 980.00 979.66 980.08 980.08

Scale 1" = 10'

ROE LN.

966.50 966.42 966.42 966.34 970.00 969.60 969.92 969.52 969.88 969.88

Scale 1" = 10'

ROE BLVD.

966.73 966.65 966.34 966.22 968.40 966.11 968.28 966.22 966.05 966.10

LOWE'S ENTRANCE

965.53 964.82 965.37 964.74 965.52 964.60 965.41 964.70

964.20 963.28 964.20 963.65 964.08

Scale 1" = 10'

ROE BLVD.

966.82 967.62 966.74 966.70 966.70 966.90 966.82 967.25 967.33

964.55 964.48 965.55 964.63 965.63

WALGREENS ENTRANCE

964.07 963.99 963.79 964.00 963.87 964.07 964.15 964.88 964.96

Scale 1" = 10'

980.61 980.53 980.39 980.57 980.58 979.90 981.00 980.27 979.93 980.88 980.46 980.38 980.10 980.16

W. 50TH TER.

980.05 979.96 979.49 979.49 979.26 979.32 979.19 979.09 978.99 978.90

ROE BLVD.

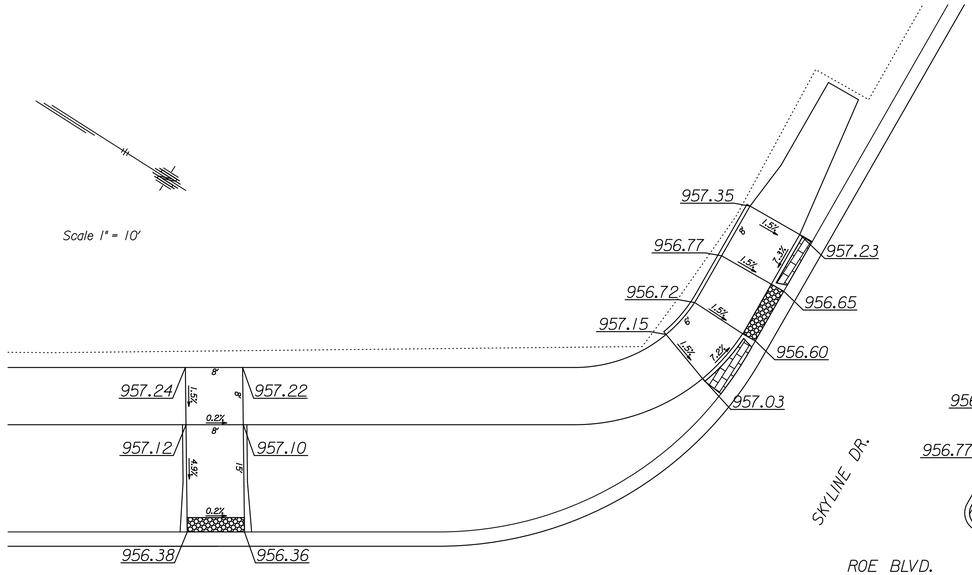
*KANSAS DEPARTMENT OF TRANSPORTATION*

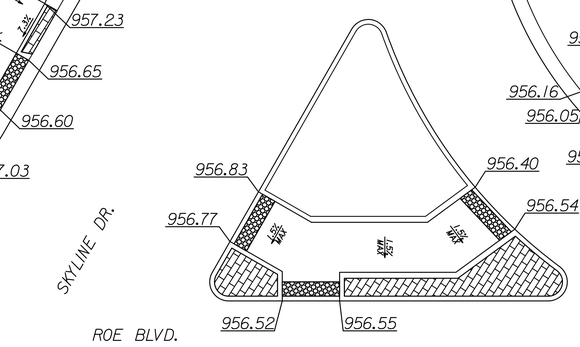
SIDEWALK RAMP DETAIL

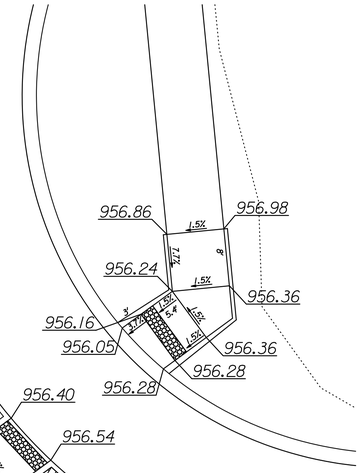
SHEET 4 OF 5

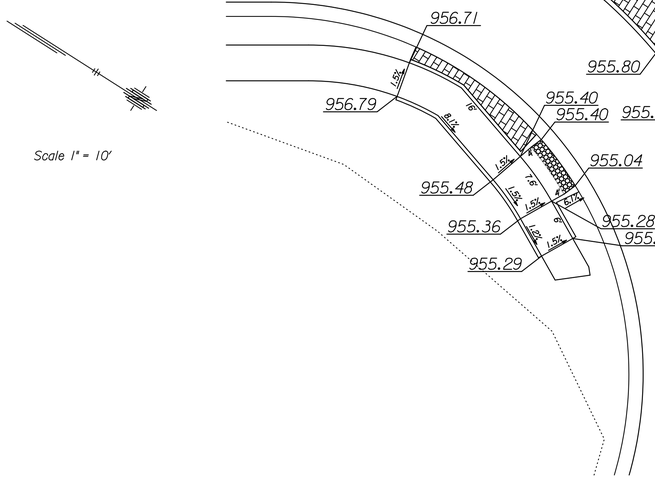
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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| KANSAS | 46 N-0661-01 | 2019 | 76 | 393 |

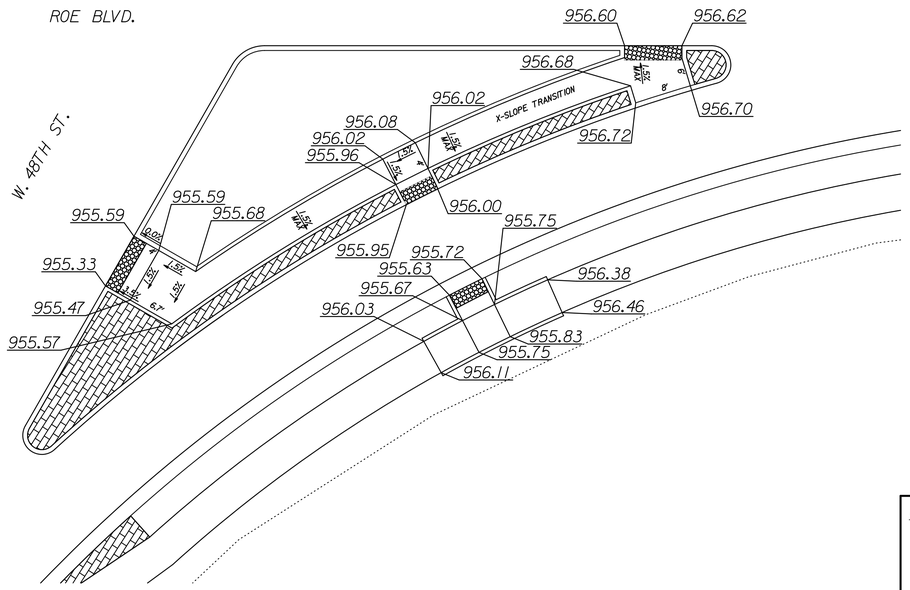
| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |




*KANSAS DEPARTMENT OF TRANSPORTATION*

SIDEWALK RAMP DETAIL

SHEET 5 OF 5

Plotted : 25-APR-2019 12:57

Drawn By : Irosenbaum
File : 13668R1730.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 77 | 393 |

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

(19) ANNE T. HOGAN & RICHARD P. STADEL
5542 ROE BLVD
ROELAND PARK, KS 66205
Lot 17

(21) THEODORE C. HOUDEK & ELLEN CARMODY
5538 ROE BLVD
ROELAND PARK, KS 66205
Lot 16

(22) LORETTA L. CARSON
5532 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution 391
Lot 15

(24) JANET L. PALMER
5528 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution 391
Lot 14

(26) KEITH E. & MARGARET JONES
5524 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution 391
Lot 13

(28) STEVE BRUNNER
5520 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution 391
Lot 12

(31) CHRISTINA GONZALEZ & JON W. OLER
5516 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution 391
Lot 11

Const. Limits
Perm. Sidewalk Esmt.
Perm. Sidewalk Esmt.

POT +00.00
W 55TH TERRACE
N 88° 01' 33" E
N 1° 58' 27" W
ROE BOULEVARD
℄ Proposed Improvements
W 56TH STREET
N 88° 01' 33" E
POT +00.00

STA. 111+47.05, 36.83' RT.
BEGIN CONSTRUCTION INTEGRAL
SIDEWALK RETAINING WALL #1

STA. 111+89.05, 36.83' RT.
END CONSTRUCTION INTEGRAL
SIDEWALK RETAINING WALL #1

STA. 112+12.93, 36.83' RT.
BEGIN CONSTRUCTION INTEGRAL
SIDEWALK RETAINING WALL #2

STA. 112+47.01, 36.83' RT.
END CONSTRUCTION INTEGRAL
SIDEWALK RETAINING WALL #2

Const. Limits

Lot 14
(29) RACHEL LANAGHEN
5521 ROE BLVD
ROELAND PARK, KS 66205

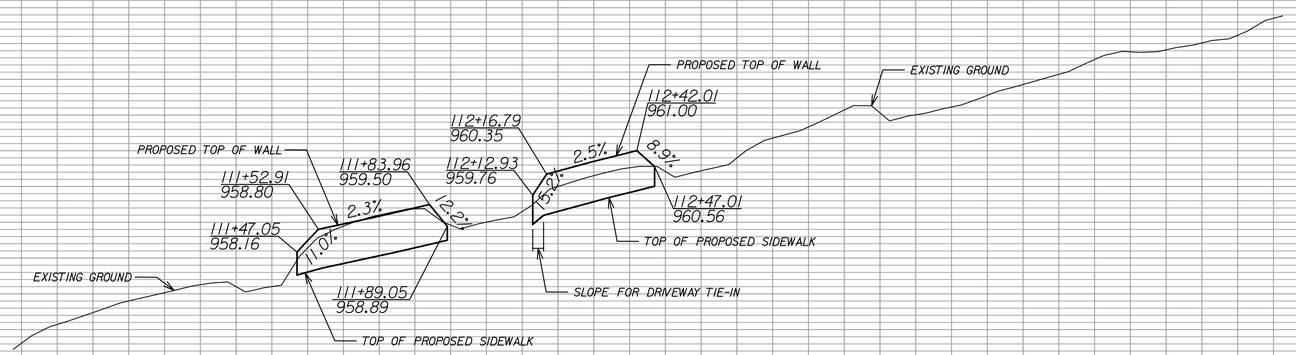
Lot 15
(30) THOMAS J. DISIDORE
5517 ROE BLVD
ROELAND PARK, KS 66205

(20) HENRY J. LORING
5543 ROE BLVD
ROELAND PARK, KS 66205
Lot 10

Lot 11 (23) DAVID S. HOVIS
5537 ROE BLVD
ROELAND PARK, KS 66205

(25) JOHN Q. & JOAN K. ANDERSON
5531 ROE BLVD
ROELAND PARK, KS 66205
Lot 12

Lot 13 (27) STEVEN TIMOTHY BRADY
5527 ROE BLVD
ROELAND PARK, KS 66205



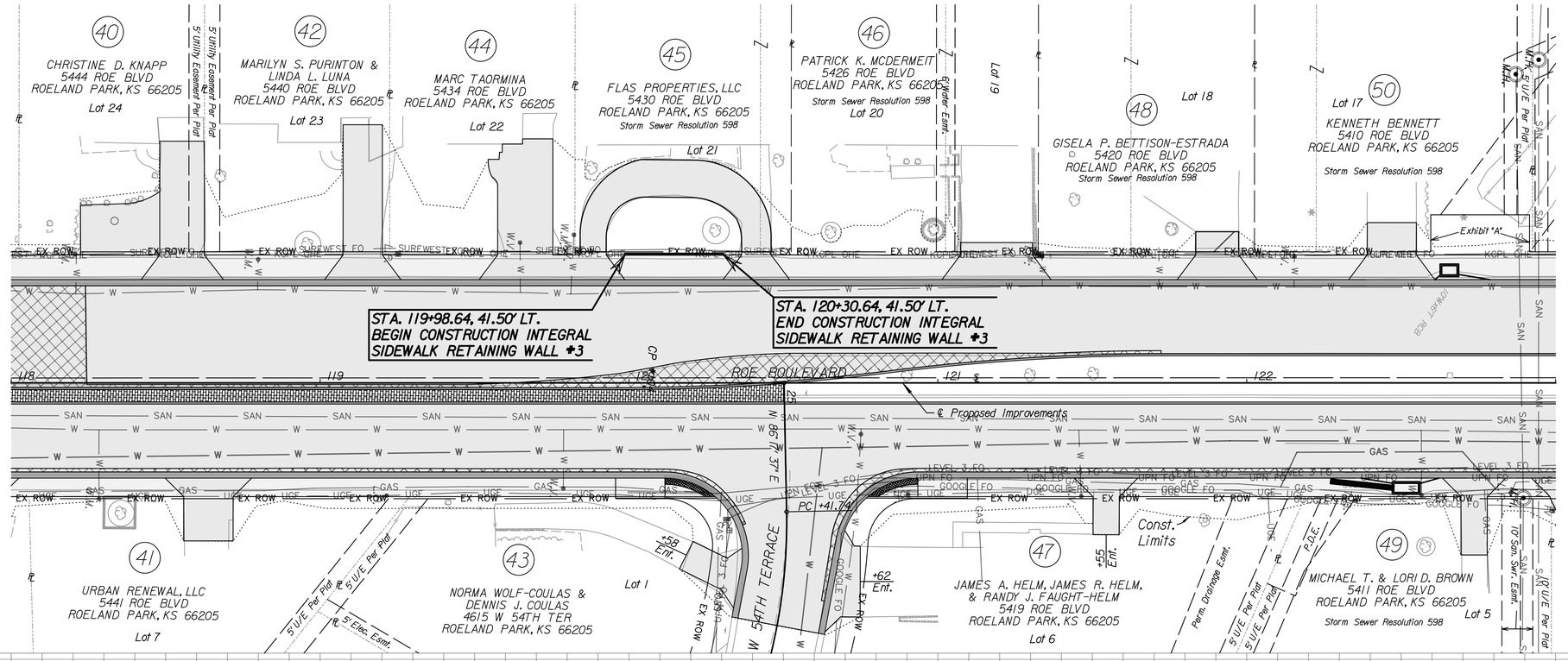

KANSAS DEPARTMENT OF TRANSPORTATION
ROE BOULEVARD RETAINING
WALL 1 & 2 PLAN & PROFILE

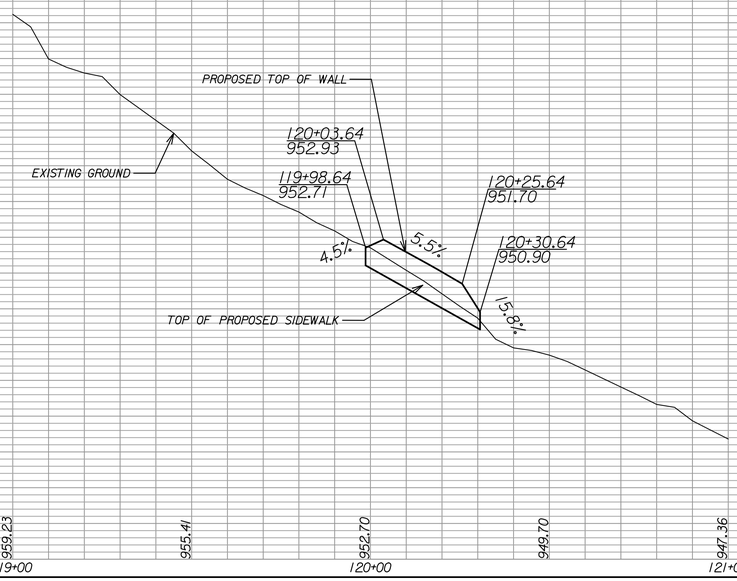
Plotted : 25-APR-2019 12:57
Drawn By : lrosenbaum
File : 13668R1801.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 78 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |



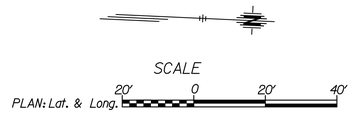

KANSAS DEPARTMENT OF TRANSPORTATION

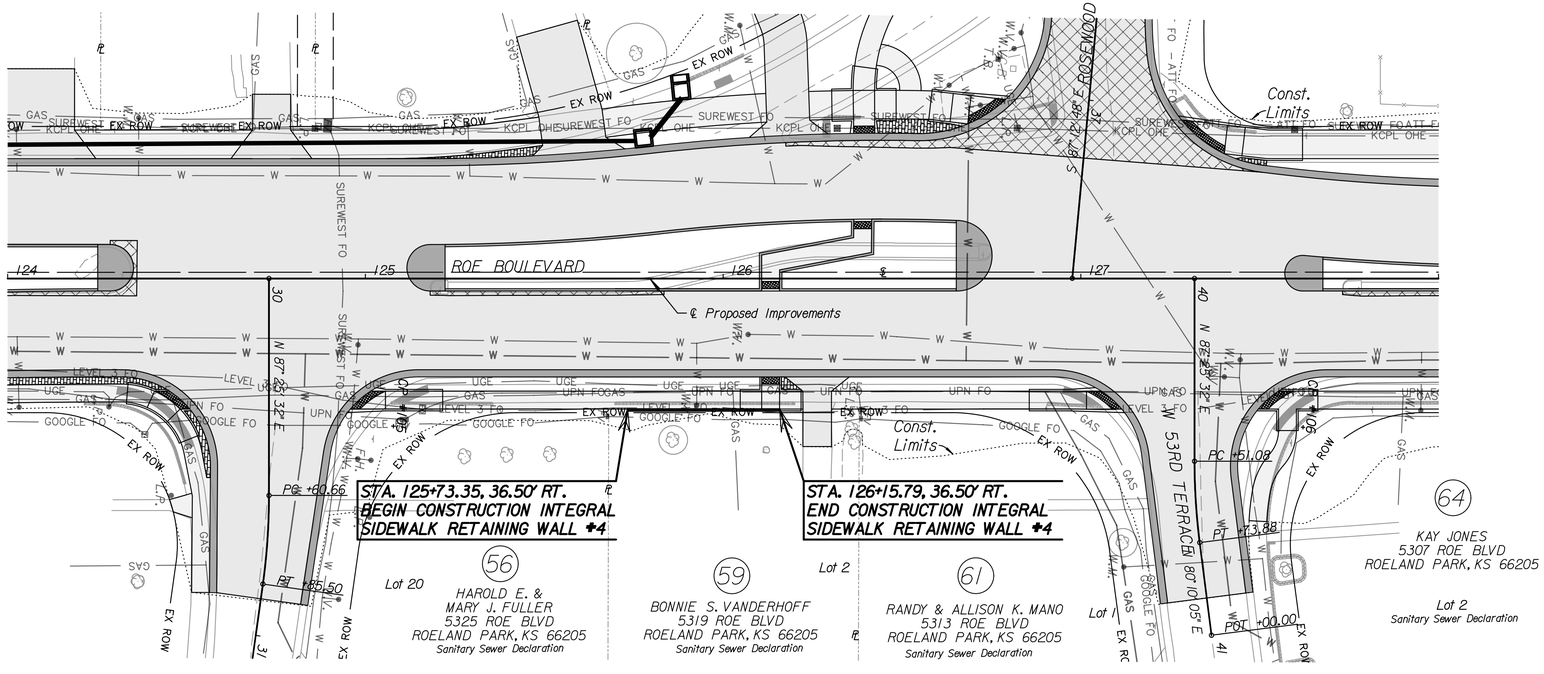
# ROE BOULEVARD RETAINING WALL 3 PLAN & PROFILE

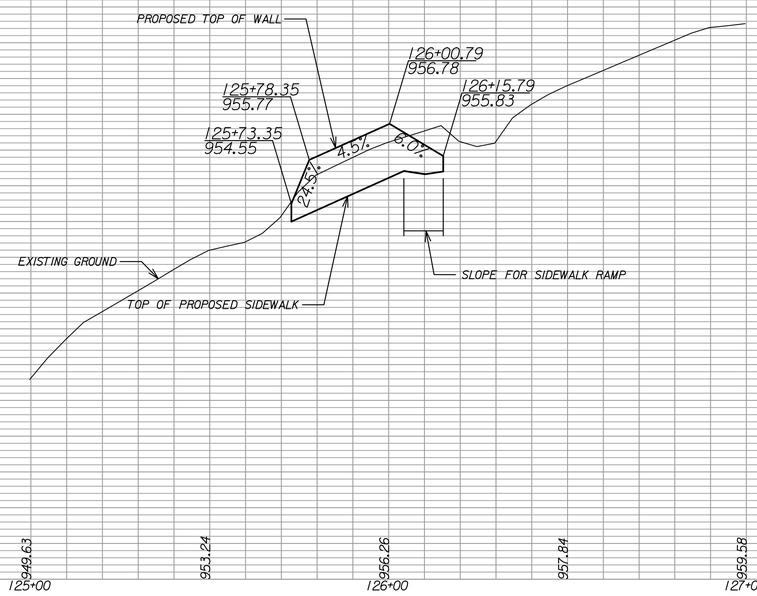
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Drawn By : lrosenbaum
File : 13668R1802.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 79 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




KANSAS DEPARTMENT OF TRANSPORTATION

ROE BOULEVARD RETAINING WALL 4 PLAN & PROFILE

Plotted : 25-APR-2019 12:57

Drawn By : lrosenbaum

File : 13668R1803.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 80 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Matchline Sta. 130+00

68 — Lot 17 — SHAWN M. MIKULICH, 5300 ROE BLVD, ROELAND PARK, KS 66205

70 — Lot 18 — JENNIFER JORDAN, 5236 ROE BLVD, ROELAND PARK, KS 66205

Lot 19

72 — SHANNON J. O'SHEA, 5232 ROE BLVD, ROELAND PARK, KS 66205

Lot 20

74 — DAVID E. FLASPOHLER, 5228 ROE BLVD, ROELAND PARK, KS 66205

Lot 21

76 — TAWNYA WIDEL, 5224 ROE BLVD, ROELAND PARK, KS 66205

78 — Benefit Agreement, City of Roeland Park — CHERYL J. NEVINS, 5220 ROE BLVD, ROELAND PARK, KS 66205

Lot 22

79 — TIMOTHY A. ELY, 5218 ROE BLVD, ROELAND PARK, KS 66205

Lot 23

Benefit Agreement, City of Roeland Park

Lot 24

81 — GAIL LOUDNER, 5214 ROE BLVD, ROELAND PARK, KS 66205

Benefit Agreement, City of Roeland Park

82 — SCOTT M. & RACHEL N. SPILKER, 5212 ROE BLVD, ROELAND PARK, KS 66205

Lot 25

STA. 132+12.07, 41.50' LT.
BEGIN CONSTRUCTION INTEGRAL
SIDEWALK RETAINING WALL #5

STA. 132+46.07, 41.50' LT.
END CONSTRUCTION INTEGRAL
SIDEWALK RETAINING WALL #5

STA. 133+88.64, 41.50' LT.
BEGIN CONSTRUCTION INTEGRAL
SIDEWALK RETAINING WALL #6

STA. 134+34.64, 41.50' LT.
END CONSTRUCTION INTEGRAL
SIDEWALK RETAINING WALL #6

Retaining Wall #5

Retaining Wall #6

Const. Limits

Const. Limits

ROE BOULEVARD

℄ Proposed Improvements

130 131 132 133 134

N 87°05'32" W

PC 131.20

PT 142.74

S 85°57'52" W

52ND TERRACE

PC +89.90

PT +00.51

Lot 10 — PJL REAL ESTATE, LLC, 5243 ROE BLVD, ROELAND PARK, KS 66205

69

71 — DONALD R. EDLER, 5239 ROE BLVD, ROELAND PARK, KS 66205

Lot 11

Lot 12

Lot 13

73 — JESSE J. & KARLA BROWN, 5235 ROE BLVD, ROELAND PARK, KS 62205

Lot 14

75 — MARY M. CORNELIUS, 5231 ROE BLVD, ROELAND PARK, KS 66205

Lot 15

77 — ABDULFATTAH AL-TURCK & ANSAM A. FATHIL, 5227 ROE BLVD, ROELAND PARK, KS 66205

Lot 16

City of Roeland Park Storm Sewer Resolution

Storm Sewer Resolution No. 517

10' Joint Driveway Esmt.

80 — ROE MARKET PLACE, LLC, 5125 ROE BLVD, ROELAND PARK, KS 66205

Storm Sewer Resolution No. 517

(Plat dedication for cross access ingress/egress granted)

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

PROPOSED TOP OF WALL
132+14.07
972.91
132+12.07
972.42
132+46.07
972.63
1.76%
TOP OF PROPOSED SIDEWALK
EXISTING GROUND
PROPOSED TOP OF WALL
133+93.64
970.10
133+88.64
970.24
134+29.64
970.57
134+34.64
970.07
0.4%
9:1
10:1
TOP OF PROPOSED SIDEWALK

974 972 970 968 966

970.66 971.75 972.20 971.94 971.69 971.86 971.40 970.82 970.30 969.52 969.35

130+00 131+00 132+00 133+00 134+00 135+00

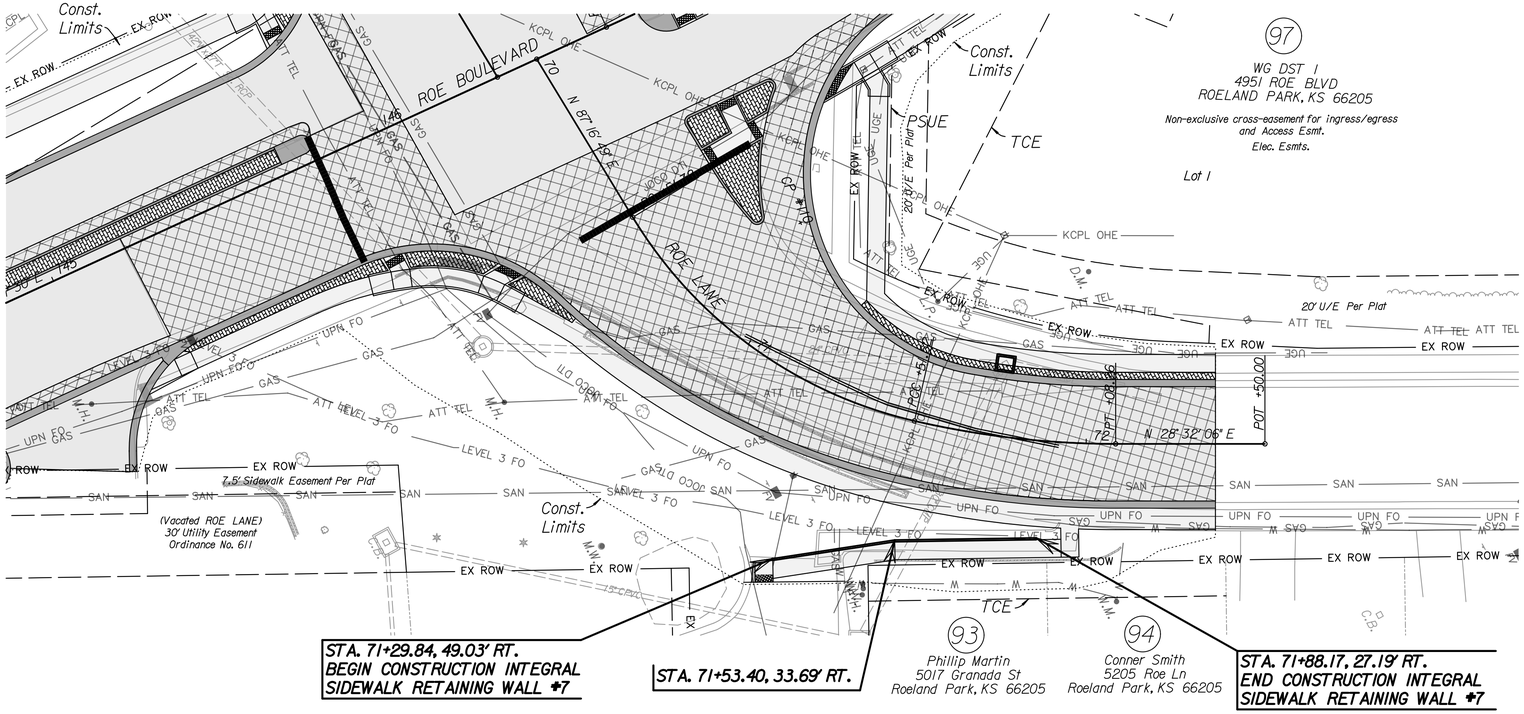
KANSAS DEPARTMENT OF TRANSPORTATION

ROE BOULEVARD RETAINING WALL 5 & 6 PLAN & PROFILE

Plotted :25-APR-2019 12:57

Drawn By : lrosenbaum
File : 13668R1805.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 81 | 393 |

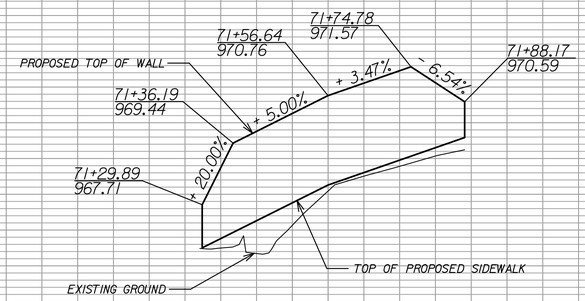



97
WG DST 1
4951 ROE BLVD
ROELAND PARK, KS 66205
*Non-exclusive cross-easement for ingress/egress and Access Esmt. Elec. Esmts.*

93
Phillip Martin
5017 Granada St
Roeland Park, KS 66205

94
Conner Smith
5205 Roe Ln
Roeland Park, KS 66205

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'



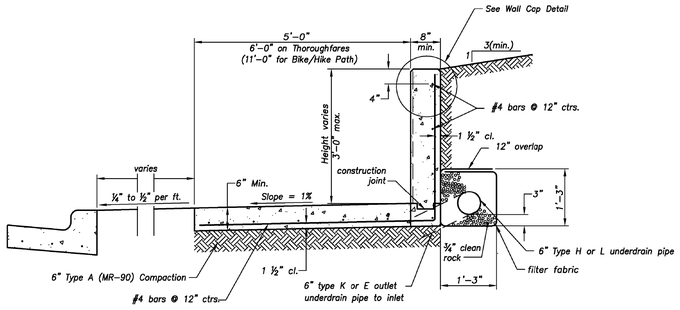

974 972 970 968 966 964 962 960
968.09
71+00 72+00

KANSAS DEPARTMENT OF TRANSPORTATION
ROE LANE RETAINING
WALL 7 PLAN & PROFILE

DATE | BY
REFERENCES NOTED
REFERENCES CHECKED

Plotted : 25-APR-2019 12:57
Drawn By : lrosenbaum
File : 13668R1806.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 82 | 393 |




## INTEGRAL SIDEWALK AND RETAINING WALL WITH UNDERDRAIN

Not to Scale

### Integral Sidewalk and Retaining Wall Notes:

General:

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. Rock backfill and topsoil placement shall be considered subsidiary to integral sidewalk and retaining wall construction.
3. Do not scale these drawings for dimensions or clearances. Any questions regarding dimensions shall be brought to the attention of the City Engineer prior to construction.
4. See planview for underdrain or weephole locations.

Concrete:

5. Concrete used in this work shall be KCMMB4K, as approved by the Kansas City Metropolitan Materials Board, and shall meet the requirements of the OPMC.
6. All exposed wall faces shall be hand finished with an approved grout while the wall is green. Form marks shall be removed prior to finishing wall.
7. All form ties shall be recessed type.

Joints:

8.* Type A joint spacing shall be 8'.

9.** Where walk abuts junction of existing walk, concrete curbs, driveways, and similar structures, and 100' centers maximum.

10. Type B horizontal expansion joints shall have ⅝" smooth dowel assemblies with greased caps @ 12" ctrs. max.
11. Key all construction joints.

Reinforcing Steel:

12. Reinforcing steel shall be new billet, minimum Grade 40 as per ASTM A615, and shall be bent cold.
13. All dimensions relative to reinforcing steel are to centerline of bars. 2" clearance shall be provided throughout unless noted otherwise. Tolerance of +/– ⅛" shall be permitted.
14. All lap splices not shown shall be a minimum of 40 bar diameters in length.
15. All dowels shall be accurately placed and securely tied in place prior to placement of bottom slab concrete. Sticking of dowels into fresh or partially hardened concrete will not be acceptable.
16. All reinforcing steel shall be supported on fabricated steel bar supports @ 3'-0" maximum spacing.

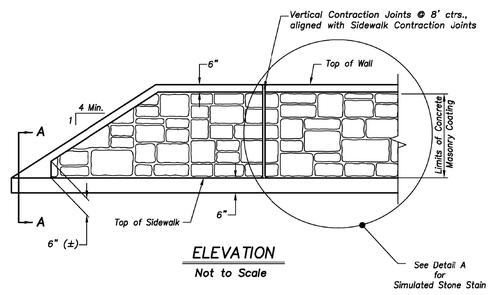
Underdrain Construction:

17. Stop underdrain at ends of sidewalk / retaining wall.
18. Proposed underdrain pipe layout, flowline elevations, inlet connection points, and details shall be approved prior to construction. The Contractor shall submit shop drawings and material tests as required for approval by the City Engineer.
19. All underdrain outlet pipes shall be Type K or E with watertight joints.
    All outlet pipes shall be tied into the nearest storm sewer inlet as approved.
20. All underdrain pipes, Type H or L, shall be installed at a minimum slope of 1%.
21. All filter fabric used for pipe underdrain construction shall meet the requirements of AASHTO M288 Class 1 or approved equal.

Materials:

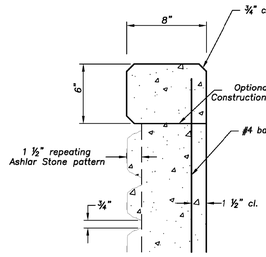
22. Form liner pattern shall be Symons Corporation "Southwest Ashlar Stone" or approved equal.
23. Prior to the retaining wall construction, submit to the City Engineer a test panel (8'x6'x8") that exhibits the texture, color and uniformity of finish.
24. Place form liner such that simulated mortar joints are horizontal (level) and vertical (plump).
25. Penetrating stain shall be Sherwin Williams H&C Shield Plus Ultra Acrylic Concrete Stain or approved equal.

    Federal Standard 595B (* note exception) Limestone Color Shades shall be used as listed below :
    Orange – #30257
    Dark Gray – #30318
    Yellow – #33448
    (*) #SW 6151 (Sherwin–Williams "Quiver Tan")
26. Application of the "Simulated Stone Masonry Stain" system is designed to duplicate closely the appearance of natural limestone on simulated masonry formed concrete surfaces. The Contractor shall schedule a pre–construction conference with the Architect/Engineer and manufacturer's representative to assure understanding of simulated stone masonry, color application, requirement for construction of test panel and to coordinate the work.
27. The form release agent used on concrete surfaces to be coated, shall be compatible with simulated stone masonry molds and with color stain system to be applied to surface. Consult manufacturer of the color stain system.



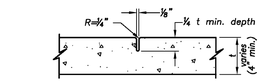

## ELEVATION

Not to Scale

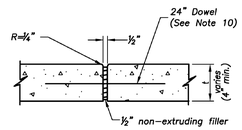



## WALL CAP DETAIL

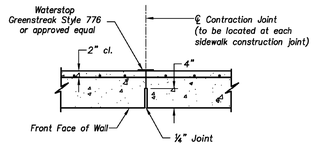
Not to Scale




## Type A* (Horizontal)

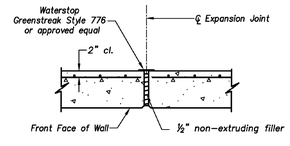



## Type B** (Horizontal)



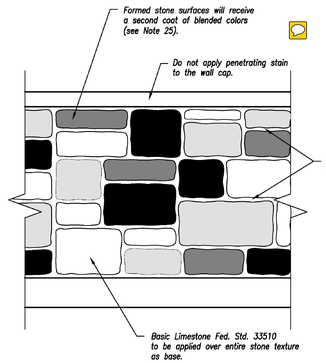

## Vertical Contraction Joint Detail

Note: Preformed Contraction Joints as approved by the City Engineer shall be used

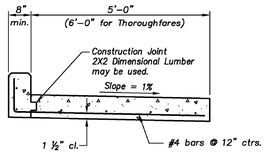



## Vertical Expansion Joint Detail

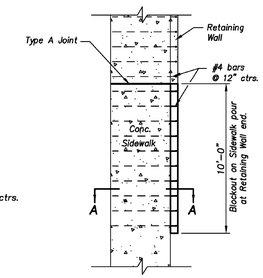
Note: Vertical Expansion Joints required every 100'




## DETAIL A

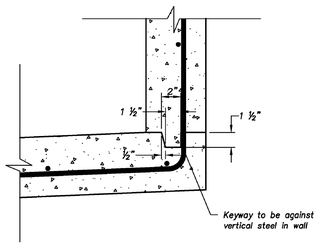



## Section A–A




## END OF SIDEWALK RETAINING WALL BLOCKOUT DETAIL

Not to Scale




## CONSTRUCTION JOINT DETAIL

Not to Scale

**INTEGRAL SIDEWALK AND RETAINING WALL**

| STA. TO STA. | SIDE | LOCATION | HEIGHT FEET | LENGTH LIN. FEET |
|---|---|---|---|---|
| 111+47.05 to 111+89.05 | RIGHT | Roe Boulevard | 1 | 42 |
| 112+12.93 to 112+47.01 | RIGHT | Roe Boulevard | 1 | 34 |
| 119+98.64 to 120+30.64 | LEFT | Roe Boulevard | 1 | 32 |
| 125+73.35 to 126+15.79 | RIGHT | Roe Boulevard | 1.5 | 42.5 |
| 132+12.07 to 132+46.07 | LEFT | Roe Boulevard | 1 | 34 |
| 133+88.64 to 134+34.64 | LEFT | Roe Boulevard | 1 | 46 |
| 71+29.84 to 71+88.17 | RIGHT | Roe Lane | 2.5 | 73.5 |
| | | | | |
| | | TOTAL: | | 304 |

Year 2018 Edition

| REVISIONS: | |
|---|---|
| 02/15/00 | NOTES; |
| 05/10/01 | MISCELLANEOUS; |
| 05/20/03 | WALL PATTERN; NOTES; |
| 07/01/03 | CONCRETE MIX DESIGNATION; |
| RELATED ORDINANCES: | |
| OPMC Title 13 | |

OVERLAND PARK KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

INTEGRAL SIDEWALK AND RETAINING WALL DETAIL

DATE: 09/28/99 SHEET: 31

DRAWING NAME: K:\Details_Specs\Detail_Drawings\details_english\revision_18\sw_wall.dwg
WEB SITE ADDRESS: http://www.opkansas.org/Doing-Business/Construction-Details

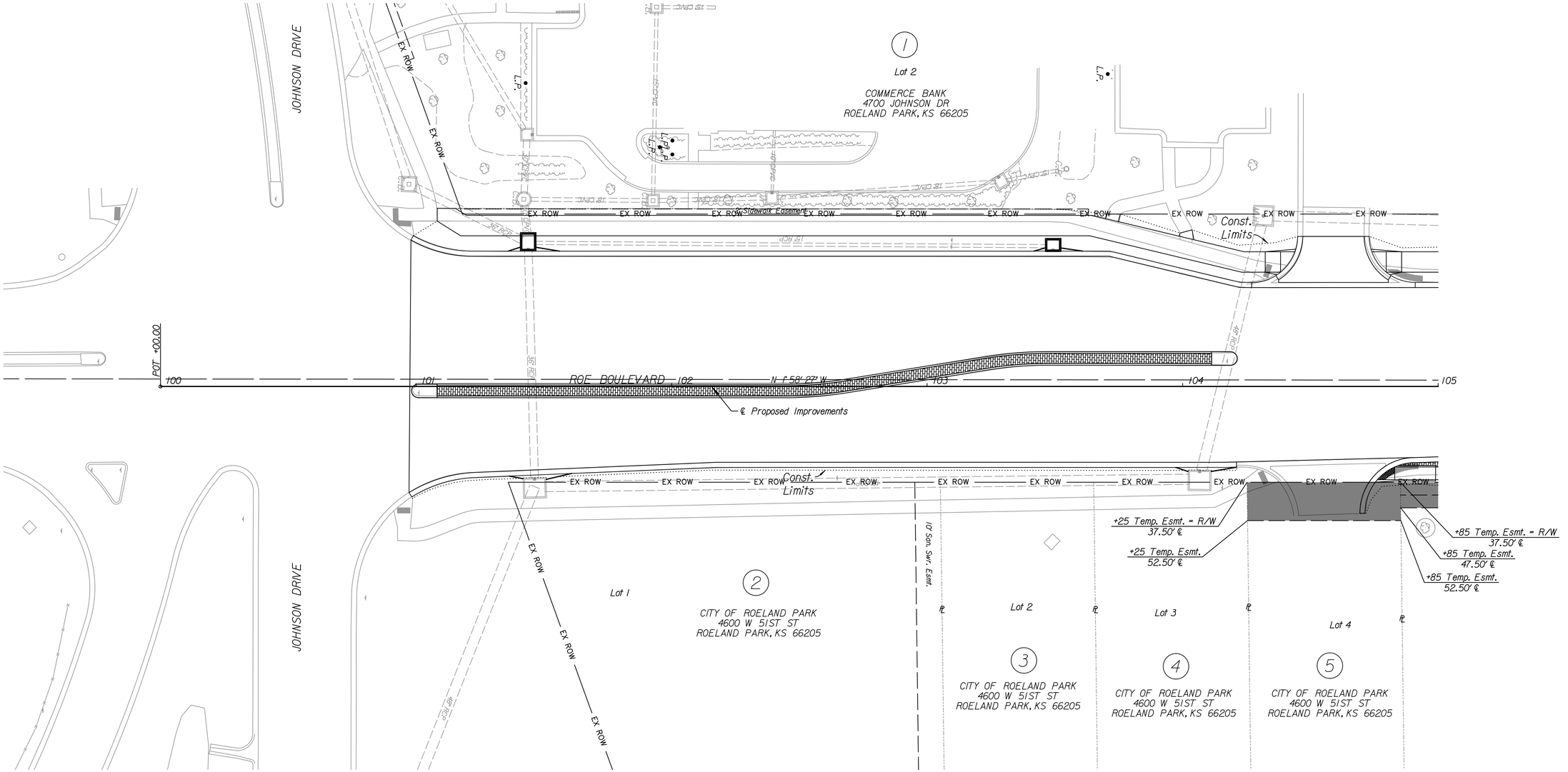
Plotted : 25-APR-2019 12:57
Drawn By : lrosenbaum
File : 13668R2101.dgn

INTEGRAL SIDEWALK
RETAINING WALL DETAILS

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 83 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |




Temporary Construction Easement
Permanent Easement
Proposed Right of Way

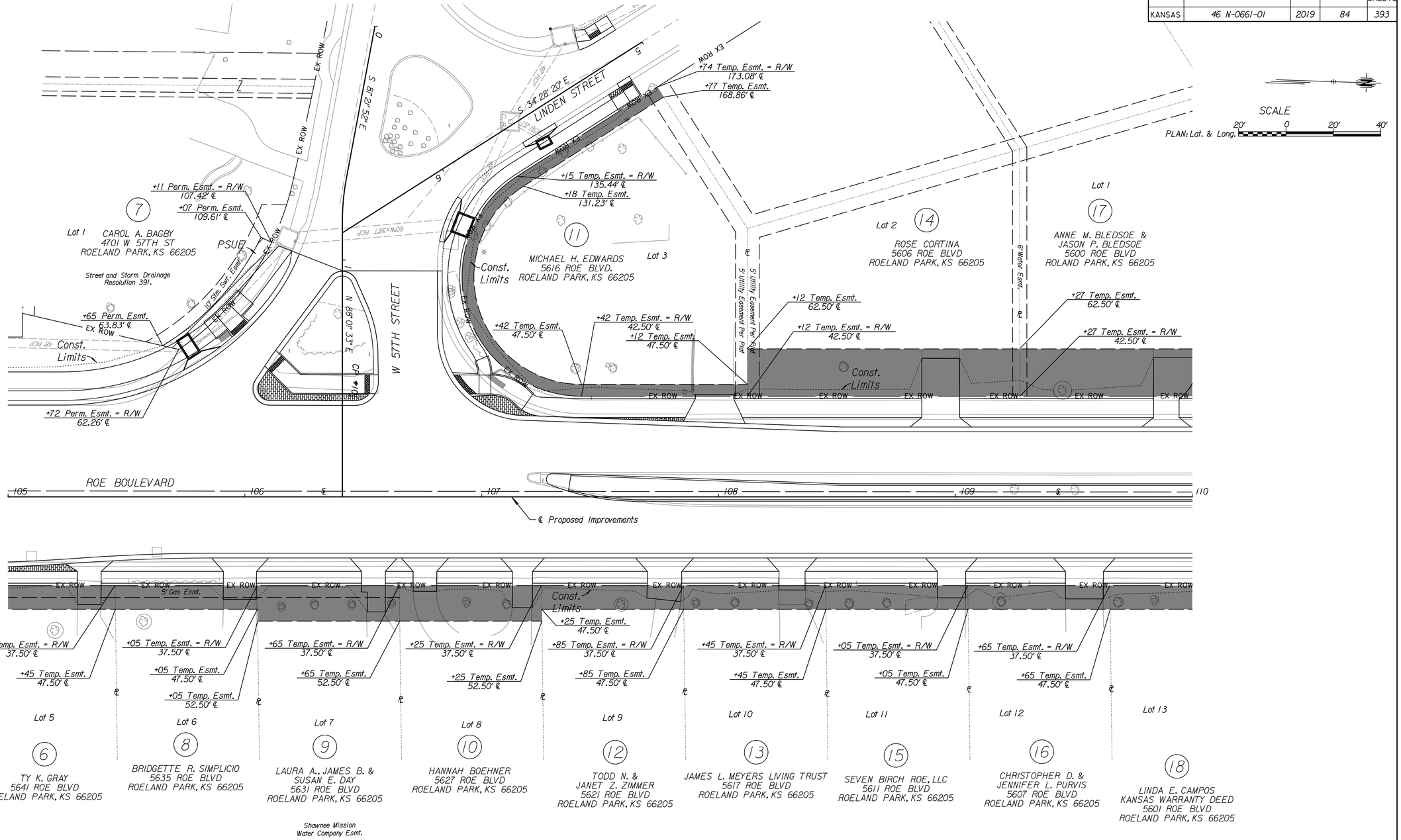
KANSAS DEPARTMENT OF TRANSPORTATION

RIGHT-OF-WAY / EASEMENT

STA. 100+00 TO STA. 105+00

Plotted : 25-APR-2019 12:57
Drawn By : lrosenbaum
File : 13668R1001.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 84 | 393 |




KANSAS DEPARTMENT OF TRANSPORTATION

RIGHT-OF-WAY / EASEMENT

STA. 105+00 TO STA. 110+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:57

Drawn By : lrosenbaum

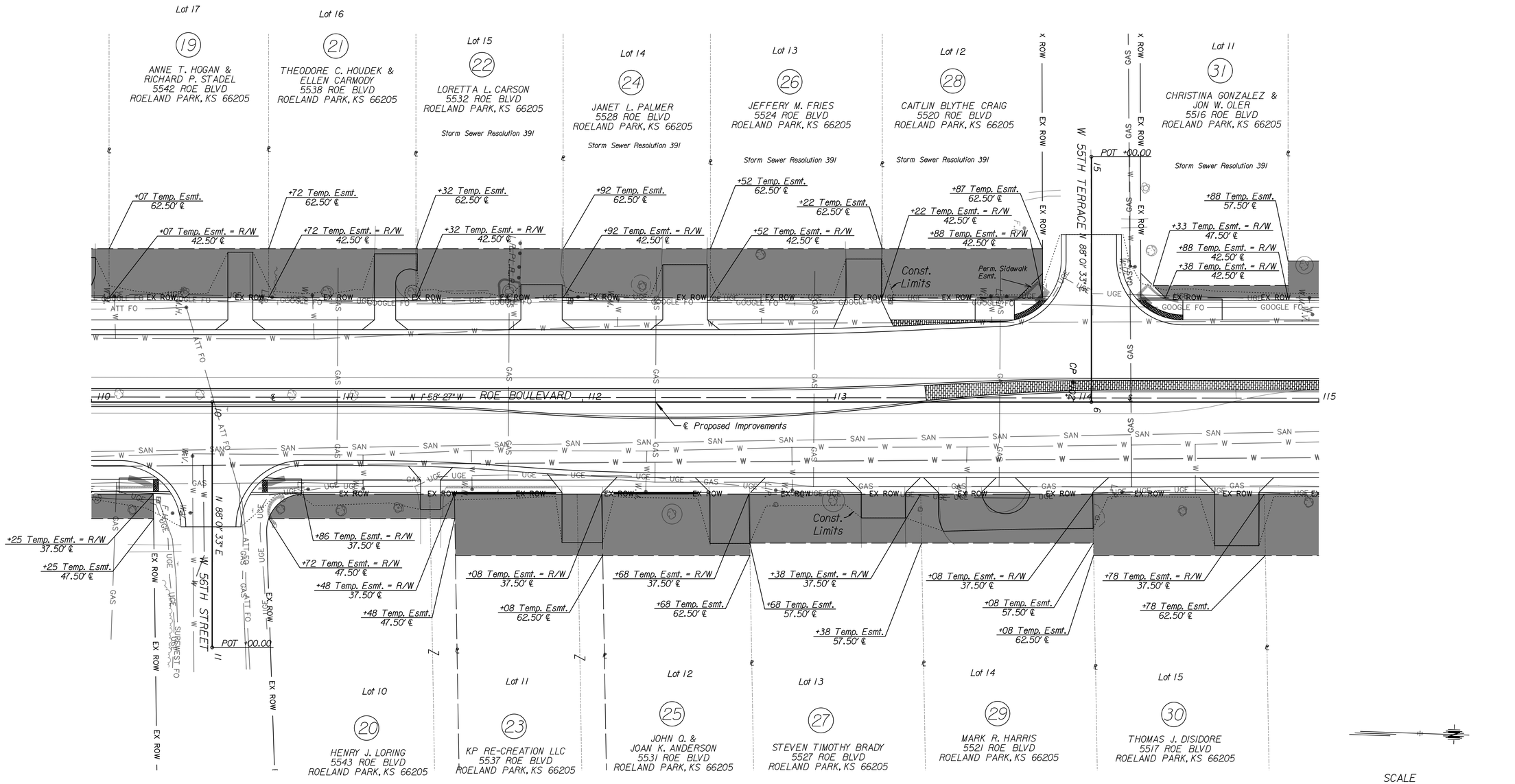
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 85 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:57

Drawn By : lrosenbaum
File : 13668R1003.dgn




SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

Temporary Construction Easement
Permanent Easement
Proposed Right of Way

KANSAS DEPARTMENT OF TRANSPORTATION

# RIGHT-OF-WAY / EASEMENT

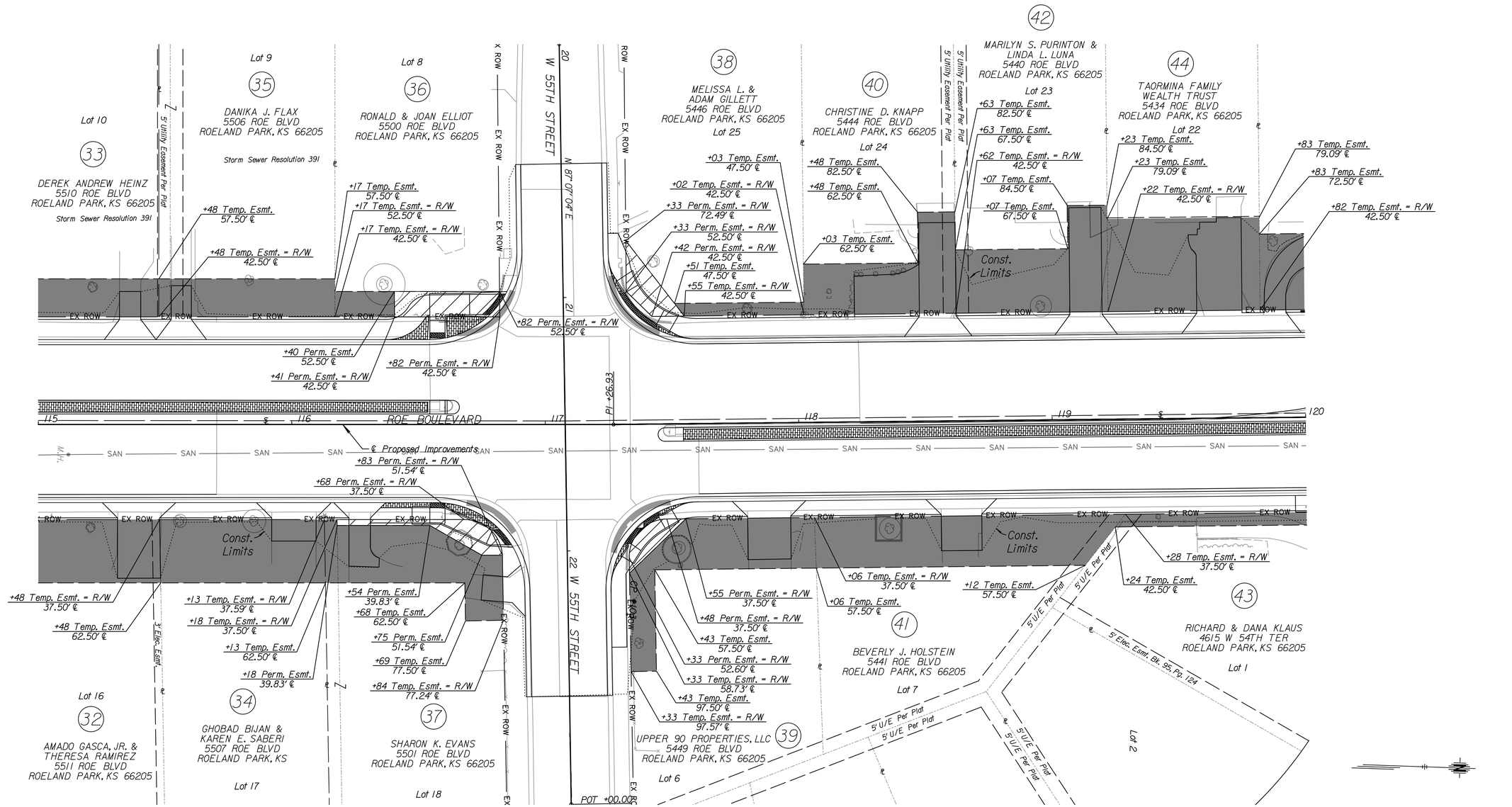
## STA. 110+00 TO STA. 115+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 86 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 12:57

Drawn By : lrosenbaum
File : 13668R1004.dgn



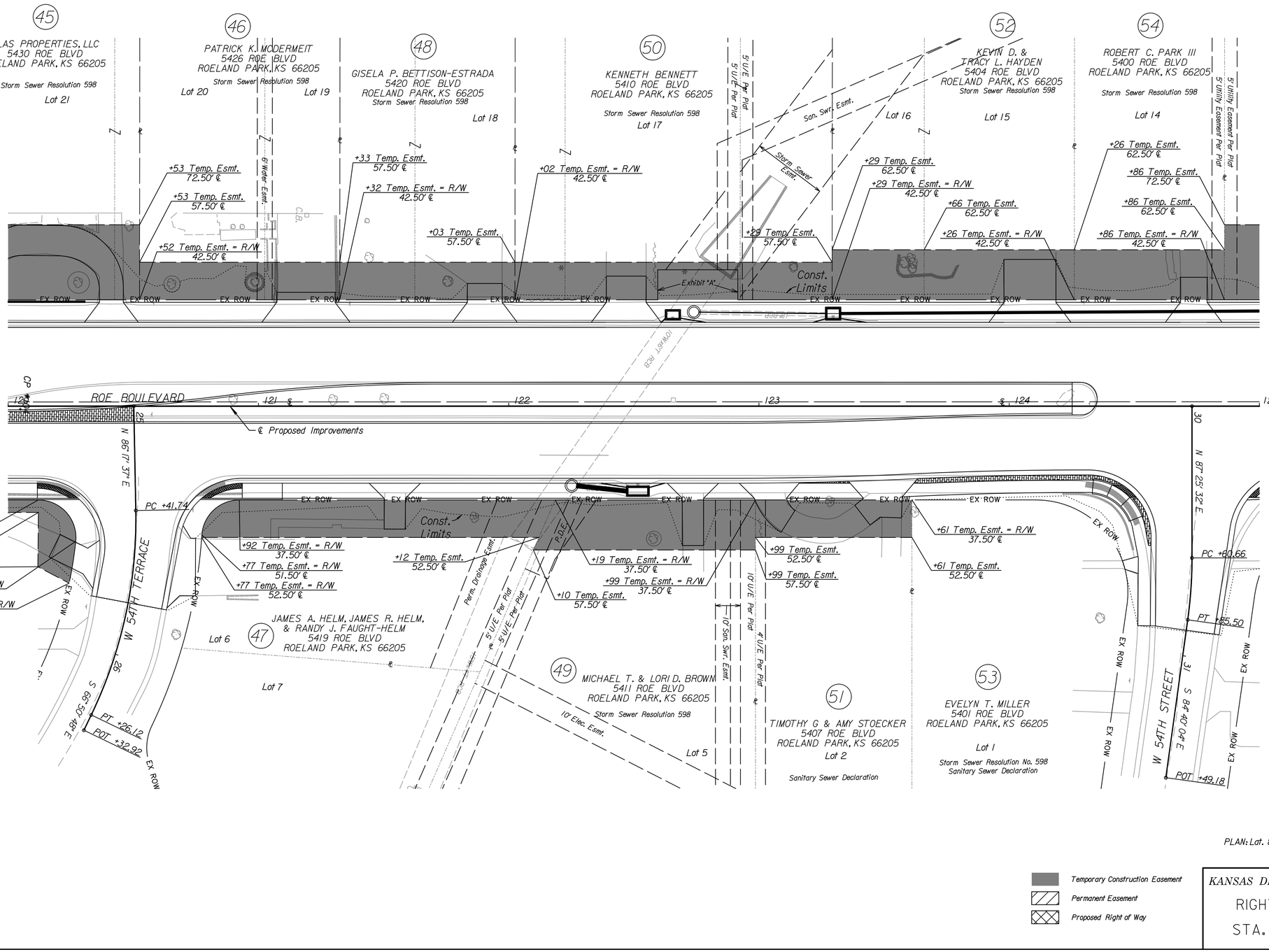

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

Temporary Construction Easement
Permanent Easement
Proposed Right of Way

KANSAS DEPARTMENT OF TRANSPORTATION
RIGHT-OF-WAY / EASEMENT
STA. 115+00 TO STA. 120+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 87 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




KANSAS DEPARTMENT OF TRANSPORTATION

RIGHT-OF-WAY / EASEMENT

STA. 120+00 TO STA. 125+00

Plotted : 25-APR-2019 12:57

Drawn By : Irosenbaum

File : 13668R1005.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 88 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:57

Drawn By : lrosenbaum
File : 13668R1006.dgn

62
CINDY L. HEY
5327 ROSEWOOD DR
ROELAND PARK, KS 66205
Lot 15

60
HARVEY R. AND MARY E. GAINES
5322 ROSEWOOD DR
ROELAND PARK, KS 66205
Lot 10

58
ANNEMARIE SMITH
5326 ROSEWOOD DR
ROELAND, KS 66205
Lot 11

57
MARGARET R. &
MICHAEL K. BRISTOW
5332 ROSEWOOD DR
ROELAND PARK, KS 66205
Lot 12
Storm Sewer Resolution 598

Lot 13
Storm Sewer Resolution 598

55
OLIVIA J. ROLLF
5334 ROE BLVD
ROELAND PARK, KS 66205

63
GLENDALE W. &
HEIDI A. MCKNIGHT
5319 ROSEWOOD DR
ROELAND PARK, 62 66205
Lot 14

66
KAREN S. KENNEY
5306 ROE BLVD
ROELAND PARK, KS 66205
Lot 16
Storm Sewer Resolution 598

62

ROE BOULEVARD

℄ Proposed Improvements

S 87° 12' 48" E ROSEWOOD DRIVE

N 87° 25' 32" E

N 80° 10' 05" E W 53RD TERRACE

N 2° 34' 28" W

PC +32.49
PT +66.35
PC +51.08
PT +73.88
POT +00.00

+90 Temp. Esmt.
149.26' ℄
+98 Temp. Esmt. = R/W
142.51' ℄
+66 Temp. Esmt.
122.90' ℄
+73 Temp. Esmt. = R/W
116.14' ℄
+24 Temp. Esmt.
112.02' ℄
+37 Temp. Esmt.
96.79' ℄
+44 Temp. Esmt. = R/W
89.18' ℄
+59 Temp. Esmt.
79.75' ℄
+69 Temp. Esmt. = R/W
51.29' ℄
+75 Temp. Esmt. = R/W
152.90' ℄
+61 Temp. Esmt. = R/W
137.33' ℄
+90 Temp. Esmt.
139.31' ℄
+34 Temp. Esmt. = R/W
68.81' ℄
+34 Temp. Esmt. = R/W
61.52' ℄
+54 Temp. Esmt. = R/W
42.50' ℄
+89 Temp. Esmt.
57.50' ℄
+59 Temp. Esmt.
57.50' ℄
+59 Temp. Esmt. = R/W
42.50' ℄
+71 Temp. Esmt.
57.50' ℄
+72 Temp. Esmt. = R/W
42.50' ℄
+22 Temp. Esmt. = R/W
42.50' ℄
+42 Temp. Esmt. = R/W
37.50' ℄
+68 Temp. Esmt. = R/W
37.50' ℄
+38 Temp. Esmt. = R/W
37.50' ℄
+38 Temp. Esmt.
52.50' ℄
+64 Temp. Esmt. = R/W
37.50' ℄
+68 Temp. Esmt.
42.50' ℄
+68 Temp. Esmt.
52.50' ℄
+97 Temp. Esmt. = R/W
52.50' ℄
+46 Temp. Esmt. = R/W
37.50' ℄
+46 Temp. Esmt.
52.50' ℄
+95 Temp. Esmt. = R/W
37.50' ℄
+95 Temp. Esmt.
52.50' ℄
+77 Temp. Esmt. = R/W
42.50' ℄
+59 Temp. Esmt. = R/W
79.17' ℄
+11 Temp. Esmt. = R/W
37.50' ℄
+11 Temp. Esmt.
52.50' ℄
+73 Temp. Esmt. = R/W
37.50' ℄
+73 Temp. Esmt.
52.50' ℄
+73 Temp. Esmt.
47.50' ℄

Const. Limits

10' Waterline Esmt.
5' Utility Esmt. Per Plat
5' Utility Esmt. Per Plat
San. Swr. Esmt.
5' Elec. Esmt.
4' U/E Per Plat
10' San. Swr. Esmt.

Lot 20

56
HAROLD E. &
MARY J. FULLER
5325 ROE BLVD
ROELAND PARK, KS 66205
Sanitary Sewer Declaration

59
BONNIE S. VANDERHOFF
5319 ROE BLVD
ROELAND PARK, KS 66205
Lot 2
Sanitary Sewer Declaration

61
RANDY & ALLISON K. MANO
5313 ROE BLVD
ROELAND PARK, KS 66205
Lot 1
Sanitary Sewer Declaration

64
KAY JONES
5307 ROE BLVD
ROELAND PARK, KS 66205
Lot 2
Sanitary Sewer Declaration

65
AMANDA C. JORDAN
5301 ROE BLVD
ROELAND PARK, KS 66205
Sanitary Sewer Declaration
Lot 1

67
CLARK CHRISTOPHER CHANEY
5247 ROE BLVD
ROELAND PARK, KS 66205
Lot 9

EX ROW
CP +0.05
CP +1.06
CP +0.08
CP +0.07
CP +0.06
CP +0.04
CP +0.03
CP +0.02
CP +0.01
C.B.
36
37
41

125 126 127 128 129 130

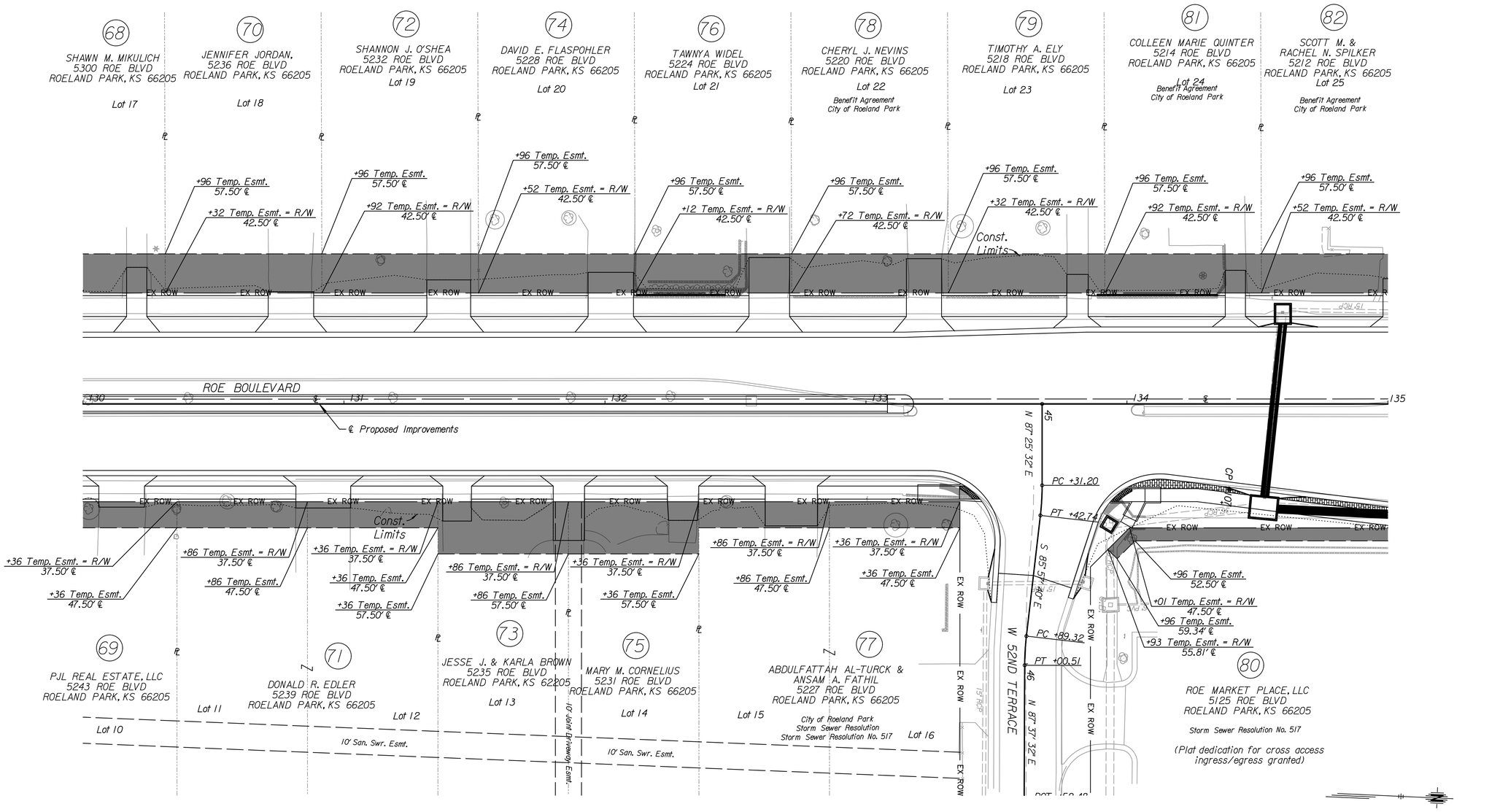
SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

Temporary Construction Easement
Permanent Easement
Proposed Right of Way

KANSAS DEPARTMENT OF TRANSPORTATION
RIGHT-OF-WAY / EASEMENT
STA. 125+00 TO STA. 130+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 89 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




Temporary Construction Easement
Permanent Easement
Proposed Right of Way

KANSAS DEPARTMENT OF TRANSPORTATION

RIGHT-OF-WAY / EASEMENT

STA. 130+00 TO STA. 135+00

Drawn By : lrosenbaum
File : 13668R1007.dgn
Plotted : 25-APR-2019 12:57

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 90 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat

83 PRAIRIE COAST PARTNERS LLC
5208 ROE BLVD
ROELAND PARK, KS 66205
Lot 26
Benefit Agreement
City of Roeland Park
Cross-Easement Declaration
(Over Access Driveway)

84 IMAGINE ENTERPRISES LLC
5204 ROE BLVD
ROELAND PARK, KS 66205
Cross-Easement Declaration
(Over Access Driveway)
Storm Sewer Resolution No. 517
Lot 27

86 TMM ROELAND PARK CENTER, LLC
4701 SYCAMORE DR
ROELAND PARK, KS 66205
Lot 2

25' W. Water Main Esmt.
5' Utility Easement Per Plat
15' W. San. Sewer Esmt.
20' W. Water Main Esmt.
W. 52ND STREET
20' W. Water Main Esmt.
10' W. Elec. Easement
Const. Limits
EX ROW
℄ Proposed Improvements
ROE BOULEVARD
N 87° 25' 32" E
SYCAMORE DRIVE
POT +00.00

+11 Temp. Esmt. 57.50' ℄
+12 Temp. Esmt. = R/W 42.50' ℄
+71 Temp. Esmt. 57.50' ℄
+72 Temp. Esmt. = R/W 42.50' ℄
+31 Temp. Esmt. 73.5' ℄
+31 Temp. Esmt. 62.50' ℄
+32 Temp. Esmt. = R/W 42.50' ℄
+71 Temp. Esmt. 62.50' ℄
+84 Temp. Esmt. 73.50' ℄
+84 Temp. Esmt. 67.50' ℄
+12 Temp. Esmt. 67.50' ℄
+30 Temp. Esmt. 77.50' ℄
+13 Temp. Esmt. 77.50' ℄
+13 Temp. Esmt. = R/W 42.50' ℄
+51 Temp. Esmt. 77.50' ℄
+51 Temp. Esmt. 52.50' ℄
+22 Perm. Esmt. = R/W 37.50' ℄
+47 Perm. Esmt. = R/W 37.50' ℄
+86 Temp. Esmt. = R/W 37.50' ℄
+47 Temp. Esmt. 42.50' ℄
+47 Perm. Esmt. 47.50' ℄
+47 Temp. Esmt. 67.50' ℄
+22 Perm. Esmt. 47.50' ℄
+86 Temp. Esmt. = R/W 47.50' ℄
+86 Temp. Esmt. 42.50' ℄
+71 Temp. Esmt. = R/W 37.50' ℄
+71 Temp. Esmt. = R/W 42.50' ℄
+75 Temp. Esmt. 52.50' ℄
+75 Temp. Esmt. 67.50' ℄
+86 Temp. Esmt. 67.50' ℄
+21 Temp. Esmt. = R/W 37.50' ℄
+21 Temp. Esmt. = R/W 47.50' ℄

80 ROE MARKET PLACE, LLC
5125 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution No. 517
(Plat dedication for cross access ingress/egress granted)

85 THE MISSION BANK
5115 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution No. 517
Lot 1
(Plat dedication for cross access ingress/egress granted)

88 BINK'M COMPANY, LLC
5201 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution 517
City of Roeland Park
Storm SewerResolution
Lot 18

89 MCDONALD'S CORPORATION
5103 ROE BLVD
ROELAND PARK, KS 66205
Storm Sewer Resolution 517
Lot 1

135 136 137 138 139 140 55 56

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

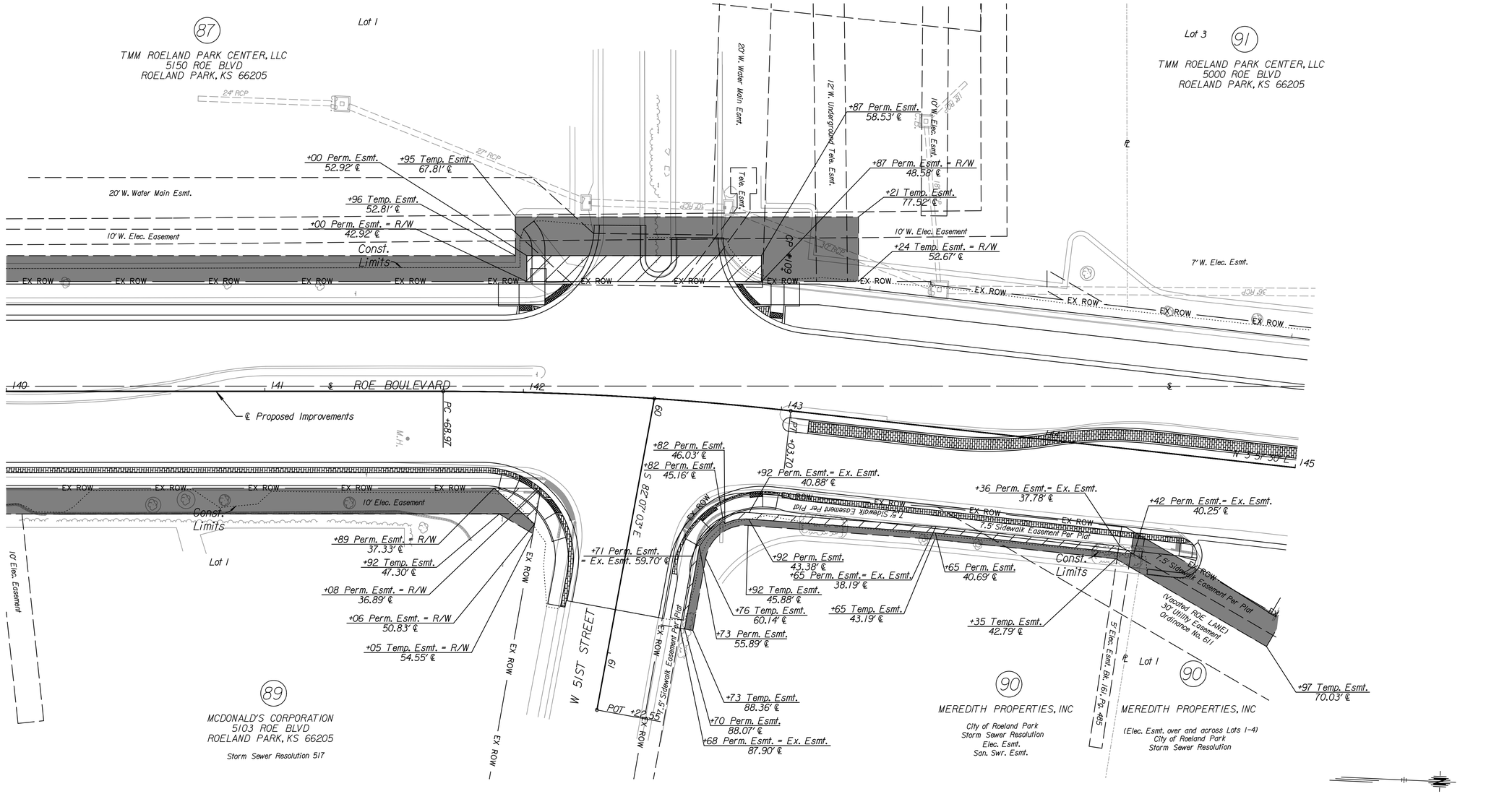
- Temporary Construction Easement
- Permanent Easement
- Proposed Right of Way

KANSAS DEPARTMENT OF TRANSPORTATION
RIGHT-OF-WAY / EASEMENT
STA. 135+00 TO STA. 140+00

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted :25-APR-2019 12:57
Drawn By : lrosenbaum
File : 13668R1008.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 91 | 393 |




KANSAS DEPARTMENT OF TRANSPORTATION

RIGHT-OF-WAY / EASEMENT

STA. 140+00 TO STA. 145+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 12:57

Drawn By : lrosenbaum
File : 13668R1009.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 92 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 12:57
Drawn By: Irosenbaum
File :13668R1010.dgn

+83 Temp. Esmt. = R/W
191.29' ℄
+78 Temp. Esmt.
190.71' ℄
20' Easement Tract
EX ROW
50TH TERRACE
10' Elec. Esmt.
+61 Temp. Esmt.
196.16' ℄
+51 Perm. Esmt. = R/W
195.02' ℄

(91)
TMM ROELAND PARK CENTER, LLC
5000 ROE BLVD
ROELAND PARK, KS 66205

Lot 3

(95)
BELLA ROE LOTS 2, 3 AND 6 07 A, LLC
4990 ROE BLVD
ROELAND PARK, KS 66205
Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.
Sanitary Sewer Esmt.
Elec. Esmt.

+60 Perm. Esmt. = R/W
119.11' ℄
+70 Temp. Esmt.
120.93' ℄
+67 Perm. Esmt. = R/W
93.56' ℄
+77 Temp. Esmt.
96.01' ℄
+75 Perm. Esmt.
87.13' ℄
10' Water Esmt.
10' Elec. Esmt.
20' U/E Per Plat
Sign Easement
+70 Temp. Esmt. = R/W
59.93' ℄
+70 Temp. Esmt.
64.94' ℄
+92 Temp. Esmt.
70.00' ℄
+93 Temp. Esmt.
65.00' ℄
+18 Temp. Esmt.
68.54' ℄
+21 Perm. Esmt. = R/W
58.65' ℄
Communication Esmt.
7' W. Elec. Esmt.
+92 Temp. Esmt.
76.02' ℄
+79 Temp. Esmt.
62.01' ℄
+79 Temp. Esmt. = R/W
54.50' ℄
Const. Limits
N 87° 16' 49" E 661.67'
Plat Bearing
Plat Distance
Plat Bearing
Plat Distance
Plat Bearing
Plat Distance

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 93 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:57

Drawn By : Irosenbaum
File : 13668R1011.dgn

98

Lot 4

BELLA ROE LOTS 2, 3 AND 6 07 A, LLC
4980 ROE BLVD
ROELAND PARK, KS 66205

Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.

Sanitary Sewer Esmt.

100

Lot 5

U.S. BANK NATIONAL ASSOCIATION
4970 ROE BLVD
ROELAND PARK, KS 66205

Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.

Sanitary Sewer Esmt.

97

Lot 1

WG DST I
4951 ROE BLVD
ROELAND PARK, KS 66205

Non-exclusive cross-easement for ingress/egress and Access Esmt.
Elec. Esmts.

99

Lot 2

MINIT MART LLC
4815 ROE BLVD
ROELAND PARK, KS 66205

Non-exclusive cross-easement for ingress/egress and Access Esmt.
Elec. Esmts.

TCE

TCE

TCE

TCE

+85 Temp. Esmt.
68.51' ℄

+06 Temp. Esmt. = R/W
63.12' ℄

+86 Temp. Esmt. = R/W
65.42' ℄

+08 Temp. Esmt. = R/W
44.00' ℄

+44 Temp. Esmt. = R/W
43.75' ℄

+56 Temp. Esmt.
49.00' ℄

+56 Temp. Esmt.
54.00' ℄

+88 Temp. Esmt.
54.00' ℄

Const. Limits

Const. Limits

Const. Limits

Landscape Easement Per Plat

Landscape Easement Per Plat

10' U/E Per Plat

10' U/E Per Plat

10' Water Esmt.

EX ROW

EX ROW

EX ROW

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 94 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

(96)

BELLA ROE LOTS 2, 3 AND 6 07 A, LLC
4950 ROE BLVD
ROELAND PARK, KS 66205

Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.

Sanitary Sewer Esmt.

(100)

U.S. BANK NATIONAL ASSOCIATION
4970 ROE BLVD
ROELAND PARK, KS 66205

Lot 5

Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.

Sanitary Sewer Esmt.

(99)

TA OPERATING, LLC
4815 ROE BLVD
ROELAND PARK, KS 66205

Lot 2

Non-exclusive cross-easement for ingress/egress and Access Esmt.
Elec. Esmts.

(98)

BELLA ROE LOTS 2, 3 AND 6 07 A, LLC
4980 ROE BLVD
ROELAND PARK, KS 66205

Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.

Sanitary Sewer Esmt.

Lot 4

(97)

Lot 1
WG DST I
4951 ROE BLVD
ROELAND PARK, KS 66205

Non-exclusive cross-easement for ingress/egress and Access Esmt.
Elec. Esmts.

ROE BOULEVARD
N 17° 38' 56" W

+17 Temp. Esmt. 207.53' ℄
+43 Temp. Esmt. 226.28' ℄
+59 Temp. Esmt. 261.38' ℄
+09 Temp. Esmt. 173.06' ℄
+09 Temp. Esmt. 138.17' ℄
+99 Temp. Esmt. 114.01' ℄
+06 Temp. Esmt. = R/W 63.12' ℄
+02 Temp. Esmt. 73.10' ℄
+96 Temp. Esmt. 85.76' ℄
Const. Limits
Landscape Easement Per Plat
10' U/E Per Plat
EX. ROW
SAN
W.M.
℄ 5th ROP
℄ 4th ROP
℄ 3rd ROP
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+42 Temp. Esmt. 228.84' ℄
+33 Temp. Esmt. 189.24' ℄
+24 Temp. Esmt. 294.95' ℄
+14 Temp. Esmt. 261.25' ℄
+32 Temp. Esmt. 252.34' ℄
+24 Temp. Esmt. 258.65' ℄
+13 Temp. Esmt. 257.49' ℄
+23 Temp. Esmt. 158.65' ℄
+22 Temp. Esmt. 121.38' ℄
+13 Temp. Esmt. 78.51' ℄
+16 Temp. Esmt. = R/W 63.40' ℄
+90 Temp. Esmt. 78.88' ℄
Landscape Easement Per Plat
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 95 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

SCALE

PLAN: Lat. & Long. 20' 0 20' 40'

Sta. 101+43.88 ℄ Roe Blvd.
Adjustment of Curb Inlet, Exist. 5' X 6'
To Match Proposed Grade
Top Elev. = 929.49

Sta. 103+49.34 ℄ Roe Blvd.
Adjustment of Curb Inlet, Exist. 5' X 4'
To Match Proposed Grade
Top Elev. = 931.13

JOHNSON DRIVE

POT +00.00

100 101 ROE BOULEVARD 102 N 1°58'27" W 103 104

℄ Proposed Improvements

Ex.1 Ex.2

CI #2121 4'x4' Conc.
Top El=929.03
FL (E)=920.02 (Out)
FL (SW)=920.18 (In)

JBMH #23324 5' Dia. Conc.
Top El=929.76
FL (E)=919.73 (Out)
FL (N)=920.49 (In)
FL (W)=920.00 (In)

JB #207 5'x5' Conc.
Top El=928.97
FL (NNE)=919.59 (Out)
FL (WSW)=919.72 (In)

CI #205 5'x6' Conc.
Top El=929.27
FL (E)=918.77 (Out)
FL (N)=920.85 (In)
FL (WSW)=919.17 (In)
FL (SSW)=919.07 (In)

JB #23325 4'x4' Conc.
Top El=930.12
FL (S)=921.72 (Out)
FL (N)=921.74 (In)
FL (W)=922.39 (In)

CI #23282 4'x4' Conc.
Top El=929.99
FL (S)=922.23 (Out)
FL (NW)=922.26 (In)
FL (W)=925.82 (In)

DI #23397 24" ID PVC
Set Vertical
Top El=928.25
FL (SE)=923.88 (Out)

DI #23374 4'x4' Conc.
Top El=929.22
FL (SE)=923.56 (Out)
FL (NW)=923.58 (In)

JB #211 7'x7' Conc.
Top El=932.26
FL (ESE)=922.06 (Out)
FL (N)=922.21 (In)

CI #209 5'x4' Conc.
Top El=930.97
FL (S)=924.92 (Out)

CI #204 8'x7' Conc.
Top El=929.58
FL (W)=918.45 (In)
FL (N)=915.73 (In)
FL (SE)=915.58 (Out)

CI #210 8'x7' Conc.
Top El=931.81
FL (S)=919.44 (Out)
FL (WNW)=919.61 (In)

10' San. Swr. Esmt.

Const. Limits

Sidewalk Easement

EX ROW · UGE · SAN · SUREWEST FO · GAS · KCPL OHE · KCPL OHF · M.H. · D.M. · L.P. · CI · JB · DI

KANSAS DEPARTMENT OF TRANSPORTATION

STORM SEWER PLAN

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted :25-APR-2019 12:57

Drawn By : lrosenbaum
File : 13668R1401.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 96 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

SCALE

20' 0 20' 40'

PLAN: Lat. & Long.

Sta. 1+36.49 ℄ W 57th Street
Adjustment of Curb Inlet, Exist. 5' X 8.5'
To Match Proposed Grade
Top Elev. = 935.08

Ex.3

Sta. 6+05.27 ℄ Linden Street
Adjustment of Curb Inlet, Exist. 8' X 6.5'
To Match Proposed Grade
Top Elev. = 936.14

Ex.4

Sta. 5+57.63 ℄ Linden Street
Adjustment of Curb Inlet Exist. 5' X 3'
To Match Proposed Grade
Top Elev. = 936.24

Ex.5

W 57TH STREET

LINDEN STREET

ROE BOULEVARD

Street and Storm Drainage Resolution 391.

CI #213 7'x7' Conc.
Top El=935.34
FL (SE)=926.90 (Out)
FL (NNW)=927.06 (In)

CI #212 5'x8.50' Conc.
Top El=934.88
FL (S)=926.75 (Out)
FL (NW)=926.88 (In)

CI #212.36 9'x7' Conc.
Top El=936.70'
FL (ESE)=929.06 (Out)
FL (NW)=929.67 (In)

CI #215 5'x3' Conc.
Top El=936.24
FL (SW)=931.74 (Out)

JB #216 7'x7' Conc.
Top El=936.29
FL (SE)=928.72 (Out)
FL (WNW)=928.94 (In)
FL (NE)=931.56 (In)

CI #214 8'x6.5' Conc.
Top El=936.14'
FL (SSE)=928.10 (Out)
FL (NW)=928.14 (In)

10' Strm. Swr. Esmt.

5' Gas Esmt.

5' Utility Easement Per Plat

6' Water Esmt.

Const. Limits

105 106 ℄ 107 108 109 ℄

℄ Proposed Improvements

KANSAS DEPARTMENT OF TRANSPORTATION

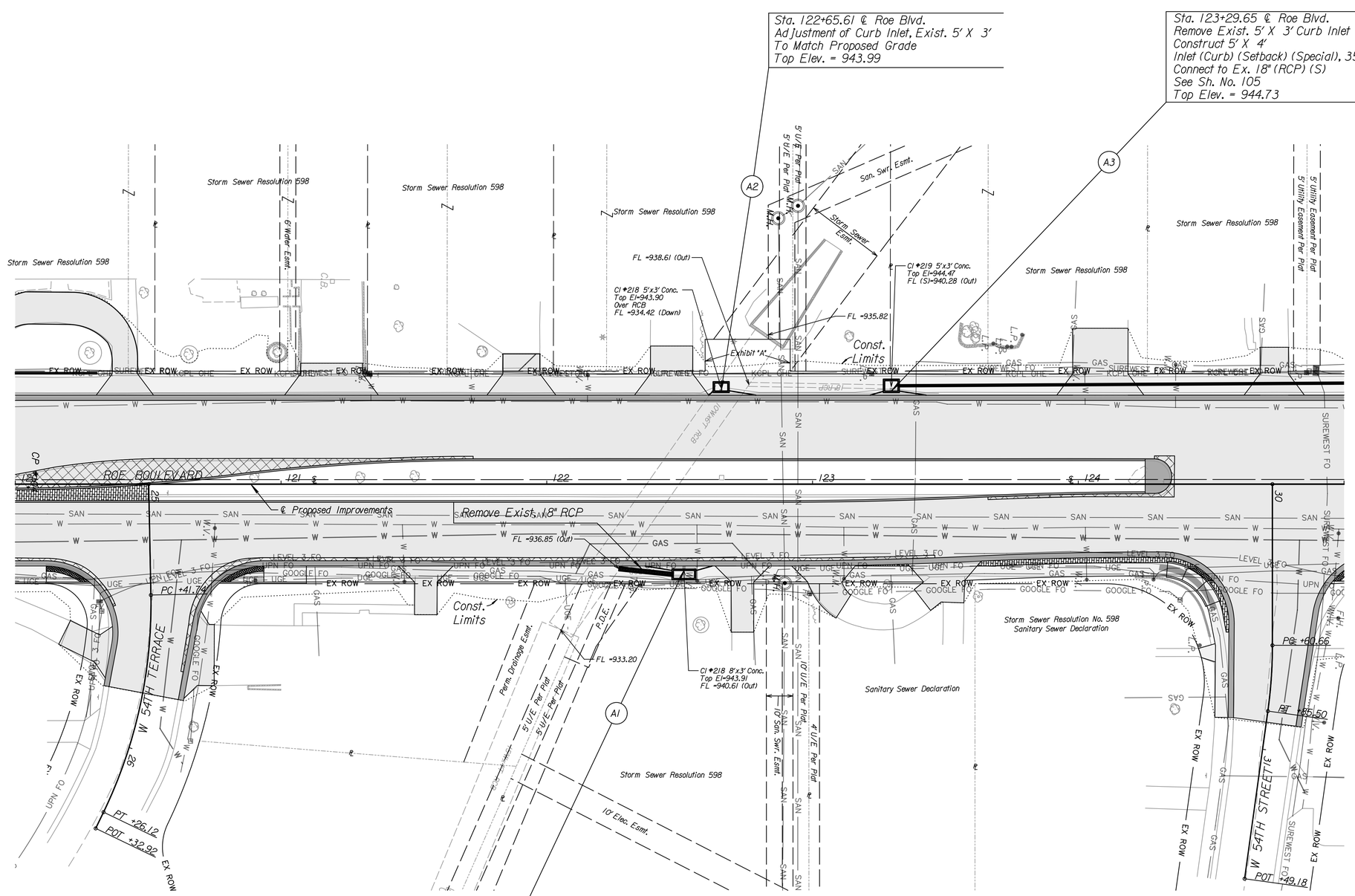
STORM SEWER PLAN

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 12:57

Drawn By : Irosenbaum
File : 13668R1402.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 97 | 393 |




LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

SCALE

20' 0 20' 40'

PLAN: Lat. & Long.

KANSAS DEPARTMENT OF TRANSPORTATION

STORM SEWER PLAN

SYSTEM A 1 OF 1

| DATE | BY | REFERENCES NOTED / REFERENCES CHECKED |
|---|---|---|
| | | |

Plotted :25-APR-2019 12:57

Drawn By : lrosenbaum
File : 13668R1403.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 98 | 393 |

CONSTRUCTION NOTE:

1. Contractor cast in place top of structure at a 19% slope from the back of sidewalk to match tie-in grade.

Sta. 36+15.00 ℄ Rosewood Dr.
Construct 8' X 4'
Inlet (Curb) (Setback) (Special), 16.5' RT
Connect to Ex. 15" (RCP) (NW)
See Sh. No. 105
Top Elev. = 954.79

Sta. 36+70.00 ℄ Rosewood Dr.
Construct 4' X 4' Inlet (Area) (Special), 30.0' RT
All Sides Open
Install 15" X 61.7' Storm Sewer (NW)
See Sh. No. 105
Top Elev. = 955.59

Remove 16' Exist. 15" RCP

Sta. 36+25.10
Remove Exist. 3' X 3' Junction Box

Remove Exist. 15" RCP

Sta. 36+63.35
Remove Exist. 8' X 4.5' Curb Inlet

Sta. 125+88.26 ℄ Roe Blvd.
Construct 4' X 4' Inlet (Area) (Special), 52.5' LT
West Side Open
Install 15" X 14.0' Storm Sewer (SE)
See Sh. No. 105
Top Elev. = 954.08

Sta. 125+77.72 ℄ Roe Blvd.
Construct 4' X 4' Junction Box, 39.3' LT
Install 15" X 243.7' Storm Sewer (S)
See Sh. No. 105
Top Elev. = 953.85

CI #224 6'x4.50' Conc.
Top El=955.23
FL (SW)=947.20 (Out)
FL (NE)=947.88 (In)
FL (SE)=949.22 (In)

CI #21856 6'x4' Conc.
Top El=955.95
FL (SW)=948.35 (Out)
FL (NW)=948.96 (In)

JB #223 3'x3' Conc.
Top El=954.60
FL (NW)=950.03 (Out)
FL (SE)=950.19 (In)

CI #222 8'x4.50' Conc.
Top El=954.13
FL (NW)=950.55 (Out)

10' Waterline Esmt.

Storm Sewer Resolution 598

Const. Limits

S 50° 23' 09" E

S 38° 28' 58" E ROSEWOOD DRIVE

PT #66.51

PC #51.09

PT #3.88

PC +00.00

N 80° 10' 05" E

W 53RD TERRACE

ROE BOULEVARD

℄ Proposed Improvements

N 82° 39' 32" E

N 8° 34' 28" W

5' Utility Esmt. Per Plat

5' Utility Esmt. Per Plat

5' Elec. Esmt.

4' U/E Per Plat

10' San. Swr. Esmt.

Sanitary Sewer Declaration

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

KANSAS DEPARTMENT OF TRANSPORTATION
STORM SEWER PLAN
SYSTEM B 1 OF 1

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted :25-APR-2019 12:58
Drawn By : lrosenbaum
File : 13668R1404.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 99 | 393 |

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

Sta. 134+59.75 ℄ Roe Blvd.
Remove Existing 5' X 3' Curb Inlet
Construct 5.5' X 7'
Inlet (Curb) (Setback) (Special), 31.0' LT
Install 2 X 18" X 65.2' Storm Sewer (E)
Connect to Ex. 15" (RCP) (N)
See Sh. No. 105
Top Elev. 969.50

Benefit Agreement City of Roeland Park

Benefit Agreement City of Roeland Park

Benefit Agreement City of Roeland Park

C6

CI #235 5'x3' Conc.
Top El=969.16
FL (E)=965.69 (Out)
FL (N)=965.79 (In)

Const. Limits

ROE BOULEVARD

℄ Proposed Improvements

Remove Exist. 36" X 24" Sq. CMP

JB #231 4'x4' Brick
Top El=968.43
FL (E)=962.63 (Out)
FL (N)=962.78 (In)

PC #31.20

PT #42.74

CI #232 8'x10' Brick
Top El=968.81
FL (SSE)=962.95 (Out)
FL (W)=965.38 (In)
FL (N)=963.06 (In)

C7ex.

Remove Exist. 36" RCP

Sta. 134+52.75 ℄ Roe Blvd.
Adjustment of Curb Inlet, Exist. 10' X 8'
To Match Proposed Grade
Connect to Prop. 2x18" (RCP)(W)
See Sh. No. 105 & 106
Top Elev. = 968.87

C8ex.

CI #227 4'x3' Conc.
Top El=966.41
FL (S)=962.51 (Out)
FL (N)=962.58 (In)

PC #89.92

PT #00.51

JB #225 5.5'x4.5' Conc.
Top El=967.22
FL (E)=962.14 (Out)
FL (N)=962.75 (In)
FL (W)=962.21 (In)

CI #226 4'x3' Conc.
Top El=966.51
FL (S)=963.01 (Out)

Sta. 133+93.21 ℄ Roe Blvd.
Adjustment of Junction Box, Exist. 4' X 4'
To Match Proposed Grade
Top Elev. = 968.48

W 52ND TERRACE

N 87° 25' 32" E

S 85° 54' 40" E

N 87° 37' 32" E

10' San. Swr. Esmt.

10' Joint Driveway Esmt.

10' San. Swr. Esmt.

City of Roeland Park
Storm Sewer Resolution

Storm Sewer Resolution No. 517

Storm Sewer Resolution No. 517

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

KANSAS DEPARTMENT OF TRANSPORTATION

STORM SEWER PLAN

SYSTEM C 1OF 2

| DATE | BY | REFERENCES NOTED / REFERENCES CHECKED |
|---|---|---|

Plotted :25-APR-2019 12:58

Drawn By: : Irosenbaum
File : 13668R1405.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 100 | 393 |

**LEGEND**

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

Sta. 135+23.25 ℄ Roe Blvd.
Remove Existing 6' X 3' Curb Inlet
Construct 6' X 6'
Inlet (Curb) (Setback) (Special), 31.0' LT
Connect to Ex. 15" (RCP) (S)
Top Elev. = 969.75

✳ Refer to Shallow Junction Box detail on sheet number 111

Sta. 135+75.00 ℄ Roe Blvd.
Construct 6' X 7' Junction Box, 37.5' LT ✳
Install 45" X 29" X 80.0' Elliptical Storm Sewer (E)
See Sh. No. 106
Top Elev. = 970.31

Sta. 135+71.92 ℄ Roe Blvd.
Remove Exist.
3.5' X 2.5' Junction Box

Sta. 136+77.46 ℄ W Roe Blvd.
Adjustment of Junction Box, Exist. 6' X 6'
To Match Proposed Grade
Install 45" X 29" X 20.8' Elliptical Storm Sewer (E)
See Sh. No. 105
Top Elev. = 973.30

JB ✦240 6'x6' Conc.
Top El=973.40
FL (E)=967.85 (Out)
FL (W)=968.19 (In)
FL (S)=968.02 (In)

C1ex.

Remove Exist. 42" X 26" Sq. CMP

Sta. 136+76.43 ℄ Roe Blvd.
Adjustment of Junction Box, Exist. 6' X 6'
To Match Proposed Grade
Install 45" X 29" X 95.5' Elliptical Storm Sewer (S)
See Sh. No. 105
Top Elev. = 971.06

C5

C3

C2ex.

Benefit Agreement
City of Roeland Park
Cross-Easement Declaration
(Over Access Driveway)

Cross-Easement Declaration
(Over Access Driveway)
Storm Sewer Resolution No. 517

25' W. Water Main Esmt.

5' Utility Easement Per Plat

15" W. San. Sewer Esmt.

20' W. Water Main Esmt.

JB ✦241 4'x4' Conc.
Top El=971.29
FL (N)=968.06 (Out)

JB ✦238 3.5'x2.5' Conc.
Top El=969.66
FL (ESE)=965.24 (Out)
FL (NNW)=965.46 (In)

JB ✦239 6'x6' Conc.
Top El=971.06
FL (S)=966.46 (Out)
FL (W)=967.04 (In)
FL (N)=966.51 (In)

Const. Limits

CI ✦234 6'x3' Conc.
Top El=969.50
FL (S)=966.58 (Out)

10' W. Elec. Easement

Remove Exist. 36" X 21" Sq. CMP

ROE BOULEVARD

℄ Proposed Improvements

Remove Exist. 42" X 24" Sq. CMP

Const. Limits

Storm Sewer Resolution No. 517

C4

CI ✦233 6'x5.5' Brick
Top El=969.38
FL (S)=963.58 (Out)
FL (WNW)=963.68 (In)
FL (ENE)=963.63 (In)

Sta. 135+50.00 ℄ Roe Blvd.
Construct 6.5' X 5'
Inlet (Curb) (Setback) (Special), 42.0' RT
Install 36" X 89.5' Storm Sewer (S)
See Sh. No. 106
Top Elev. = 969.51

Sta. 135+51.24 ℄ Roe Blvd.
Remove Exist. 6' X 5.5' Curb Inlet
Cut and Cap 30" RCP (NE) ◔

◔ All materials and labor required to cut and cap existing 30" RCP shall be subsidiary to construction of Inlet (Curb) (Setback) (Special).

Storm Sewer Resolution 517
City of Roeland Park
Storm SewerResolution

SYCAMORE DRIVE

S 84° 25' 32" E

POT +00.00

Storm Sewer Resolution 517

10' Elec. Easement

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

KANSAS DEPARTMENT OF TRANSPORTATION
STORM SEWER PLAN
SYSTEM C 2 OF 2

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted :25-APR-2019 12:58
Drawn By: lrosenbaum
File: 13668R1406.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 101 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

Sta. 66+35.02 ℄ W 50th Ter.
Remove Exist. 4' X 3' Junction Box

Remove Exist. 18" RCP

Sta. 66+36.21 ℄ W 50th Ter.
Remove Existing 4' X 3' Curb Inlet
Construct 8' X 4'
Inlet (Curb) (Setback) (Special), 24.5' RT
Install 18" X 65.7' Storm Sewer (N)
See Sh. No. 106
Top Elev. = 980.47

Remove Exist. 15" RCP

Sta. 66+34.50 ℄ W 50th Ter.
Construct 5' X 3'
Inlet (Curb) (Setback) (Special), 41.1' LT
Install 18" X 19.2' Storm Sewer (E)
See Sh. No. 106
Top Elev. 980.15

Sta. 146+76.17 ℄ W Roe Blvd.
Construct 4' X 4' Junction Box, 72.5' LT
Connect to Exist. 24" (RCP) (N)
See Sh. No. 106
Top Elev. = 979.81

Remove 19.6' Exist. 24" RCP

Sta. 66+56.60 ℄ W 50th Ter.
Remove Exist. 4' X 4' Junction Box

Remove Exist. 24" RCP

Remove Exist. 18" RCP

Sta. 146+01.41 ℄ Roe Blvd.
Grade to Match Existing
5' Round Manhole
Do Not Disturb

Sta. 71+68.57 ℄ Roe Lane
Adjustment of Junction Box, Exist. 4.3' X 3.7'
To Match Sidewalk Grade
Top Elev. = 971.82

Sta. 148+70.00 ℄ W Roe Blvd.
Adjustment of Junction Box
Exist. 10' X 6' Curb Inlet, 56.5' LT
See Sh. No. 106
Top Elev. = 976.35

Sta. 148+70.00 ℄ Roe Blvd.
Construct 10' X 3'
Inlet (Curb) (Setback) (Special), 44.5' LT
Install 24" X 6.0' Storm Sewer (W)
See Sh. No. 107
Top Elev. = 976.16

Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.

Sanitary Sewer Esmt.
Elec. Esmt.

Non-exclusive cross-easement for ingress/egress and Access Esmt.
Elec. Esmts.

50TH TERRACE

ROE BOULEVARD

ROE LANE

℄ Proposed Improvements

Const. Limits

(Vacated ROE LANE) 30' Utility Easement Ordinance No. 611

7.5' Sidewalk Easement Per Plat

20' Easement Tract

10' Elec. Esmt.

20' U/E Per Plat

10' Water Esmt. Bk.

Communication Esmt.

7' W. Elec. Esmt.

JB ✦249 6'x6' Conc.
Top El=982.45
FL (ENE)=970.66 (Out)
FL (S)=970.99 (IN)

JB ✦248 4'x5' Conc.
Top El=981.47
FL (N)=971.39 (Out)
FL (S)=971.40 (IN)

CI ✦255 4'x3' Conc.
Top El=980.15
FL (N)=975.11 (Out)

JB ✦254 4'x3' Conc.
Top El=979.91
FL (ENE)=974.79 (Out)
FL (NNW)=975.20 (IN)
FL (S)=974.97 (IN)

CI ✦252 6'x4' Conc.
Top El=980.23
FL (SSE)=975.58 (Out)

JB ✦253 4'x4' Conc.
Top El=979.56
FL (N)=973.67 (Out)
FL (WSW)=974.70 (IN)
FL (S)=973.96 (IN)

CI ✦256 10'x6' Conc.
Top El=975.94
FL (NNW)=970.74 (Out)
FL (SSW)=971.54 (IN)

JB ✦22924 4'x6' Conc.
Top El=973.75
FL (NE)=964.97 (Out)
FL (SE)=965.20 (IN)

JB ✦250 5' Dia. Conc.
Top El=977.91
FL (NE)=969.86 (Out)
FL (WSW)=969.94 (IN)

DI ✦22909 2'x4' Conc.
Top El=965.99
FL (N)=962.84 (Out)
FL (SE)=963.59 (IN)

CI ✦22880 5'x5' Conc.
Top El=966.14
FL (NW)=958.14 (Out)
FL (SE)=961.97 (IN)
FL (S)=958.59 (IN)
FL (SW)=958.63 (IN)

CI ✦251 4.30'x3.70' Conc.
Top El=971.68
FL (NE)=955.35 (Out)
FL (SE)=955.67 (IN)
FL (SW)=955.65 (IN)

N 87°19'49" E 1070.66'

N 28°32'06" E 175.17'

PC +41.37

PC +51.72

POT +50.00

CONSTRUCTION NOTES:

1. Contractor shall orient top section of Junction box to avoid conflicting with the back of curb.
2. Contractor shall remove existing Curb Inlet top and replace with a Junction Box top to match proposed grade.

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

KANSAS DEPARTMENT OF TRANSPORTATION
STORM SEWER PLAN
SYSTEM D 1OF 2

| DATE | BY | REFERENCES NOTED / REFERENCES CHECKED |
|---|---|---|
| | | |

Plotted : 25-APR-2019 12:58
Drawn By : lrosenbaum
File : 13668R1407.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 102 | 393 |

CONSTRUCTION NOTE:

1 Contractor shall remove existing Curb Inlet top and replace with a Junction Box top to match proposed grade.

Sta. 150+17.72 ℄ Roe Blvd.
Adjustment of Junction Box
Exist. 9' X 4' Curb Inlet, 53.5' LT
Install 24" X 12.0' Storm Sewer (E)
See Sh. No. 106
Top Elev. = 973.02

Sta. 150+18.97 ℄ Roe Blvd.
Construct 9' X 3'
Inlet (Curb) (Setback) (Special), 36.0' LT
Connect Ex. 24" (RCP) (E)
See Sh. No. 106
Top Elev. 972.80

Sta. 152+06.94 ℄ Roe Blvd.
Remove Existing 9' X 4' Curb Inlet
Construct 9' X 9'
Inlet (Curb) (Setback) (Special), 41.5' LT
Connect Ex. 15" (RCP) (N)
Top Elev. = 967.40

Remove 15.0' Exist. 24" RCP

Sta. 154+04.63 ℄ Roe Blvd.
Adjustment of Manhole, Exist. 4' Round
To Match Proposed Grade
Top Elev. = 961.02

Sta. 154+52.50 ℄ Roe Blvd.
Adjustment of Curb Inlet, Exist. 8' X 3'
To Match Proposed Grade
Top Elev. = 959.84

Sta. 154+84.96 ℄ Roe Blvd.
Remove Existing 4' X 4' Curb Inlet
Construct 4' X 6'
Inlet (Curb) (Setback) (Special), 36.5' RT
Connect Ex. 24" (RCP) (S)
Connect Ex. 24" (RCP) (W)
Top Elev. = 959.23

Sta. 150+12.70 ℄ Roe Blvd.
Remove Existing 4' X 3' Curb Inlet
Construct 4' X 7' Type 12 Curb Inlet, 29.5' RT
Connect Ex. 24" (RCP) (W)
See Sh. No. 106
Top Elev. = 972.25

Sta. 151+80.60 ℄ Roe Blvd.
Adjustment of Junction Box, Exist. 5' X 4'
To Match Proposed Grade
Top Elev. = 967.37

Remove Exist. 5' X 4" Curb Inlet
Remove Exist. 18" CMP

Sta. 151+80.00 ℄ Roe Blvd.
Construct 5' X 3'
Inlet (Curb) (Setback) (Special), 45.5' RT
Install 24" X 11.4' Storm Sewer (SW)
See Sh. No. 107
Top Elev. = 967.72

Sta. 153+32.00 ℄ Roe Blvd.
Remove Existing 4' X 4' Curb Inlet
Construct 4' X 5' Type 12 Curb Inlet, 29.4' RT
Connect Ex. 24" (RCP) (S)
Connect Ex. 24" (RCP) (N)
Top Elev. = 962.47

Cl ♦257 9'x4' Conc.
Top El=972.39
FL (ENE)=967.13 (Out)
FL (SSE)=967.58 (In)

Cl ♦258 4'x3' Conc.
Top El=972.61
FL (NNW)=965.29 (Out)
FL (WSW)=965.65 (In)

Cl ♦259 5'x4' Conc.
Top El=967.89
FL (W)=961.31 (Out)

Cl ♦260 5'x4' Conc.
Top El=967.32
FL (NNW)=960.07 (Out)
FL (SSE)=960.42 (In)
FL (E)=961.06 (In)

Cl ♦261 4'x4' Conc.
Top El=963.00
FL (NNW)=955.97 (Out)
FL (SSE)=956.15 (In)

Cl ♦262 4'x4' Conc.
Top El=959.07
FL (WSW)=951.51 (Out)
FL (SSE)=951.79 (In)

Cl ♦264 8'x3' Conc.
Top El=959.72
FL (NNW)=955.61 (Out)
FL (SSE)=955.91 (In)

Cl ♦266 6'x4' Conc.
Top El=962.60
FL (E)=958.29 (Out)

Cl ♦267 9'x4' Conc.
Top El=966.79
FL (NNW)=960.88 (Out)

JBMH ♦265 5' Dia. Conc.
Top El=960.84
FL (NNW)=956.64 (Out)
FL (SSE)=956.73 (In)
FL (WSW)=956.72 (In)

Cl ♦269 4'x4' Conc.
Top El=959.07
FL (WSW)=951.51 (Out)
FL (SSE)=951.79 (In)

ROE BOULEVARD
N 17° 38' 58" W
℄ Proposed Improvements
PT 149+09.02
PC 153+17.39
150
151
152
153
154

Const. Limits
Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.
Sanitary Sewer Esmt.
10' U/E Per Plat
Landscape Easement Per Plat
Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.
Sanitary Sewer Esmt.
Possible Structure Buried Under Pvmt. Location Unknown
24' Sidewalk Easement Per Plat
Non-exclusive cross-easement for ingress/egress and Access Esmt.
Elec. Esmts.
Water Dist. No. 1 Johnson County 20' W. Perm. Esmt.
Water District No. 1 Esmt.
75' Access Easement Per Plat City of Roeport Plat
28' San. Sewer Easement Per Plat
32' San. Sewer Easement Per Plat
Elec. Esmt.

D6 D7 D8 D9 D10ex. D11 D12 E4 Ex.8 Ex.9

LEGEND

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

KANSAS DEPARTMENT OF TRANSPORTATION

STORM SEWER PLAN

SYSTEM D 2 OF 2 & E 1 OF 2

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted : 25-APR-2019 12:58
Drawn By : lrosenbaum
File : 13668R1408.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 103 | 393 |

**LEGEND**

- Proposed Mill & Overlay
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Full Depth Pavement
- Proposed Concrete Drive
- Proposed Asphalt Drive
- Proposed Warning Mat
- Proposed Stamped Concrete

**CONSTRUCTION NOTE:**

1. Contractor shall remove existing Curb Inlet top and replace with a Junction Box top to match proposed grade.

Sta. 156+54.33 ℄ Roe Blvd.
Adjustment of Junction Box
Exist. 8' X 4' Curb Inlet, 51.0' LT
Install 30" X 6.1' Storm Sewer (NE)
See Sh. No. 107
Top Elev. = 957.13

Sta. 156+53.50 ℄ Roe Blvd.
Construct 8' X 4'
Inlet (Curb) (Setback) (Special), 40.5' LT
Connect Ex. 30" (RCP) (NE)
See Sh. No. 107
Top Elev. = 956.97

Sta. 157+35.00 ℄ Roe Blvd.
Construct 7' X 4'
Inlet (Curb) (Setback) (Special), 40.5' LT
Install 30" X 6.6' Storm Sewer (SW)
See Sh. No. 107
Top Elev. = 956.77

Sta. 157+35.46 ℄ Roe Blvd.
Adjustment of Junction Box
Exist. 7' X 4' Curb Inlet, 53.0' LT
See Sh. No.107
Top Elev. = 956.97

Non-Exclusive Esmt. for vehicular and pedestrian ingress/egress, maintenance and utility facility and Access Esmt.

Sanitary Sewer Esmt.

20' San. Sewer Easement Per Plat

JB ✦316 12'x12' Conc.
El 962.22
FL (N)-938.56 (Out)
Trough

JB ✦281 8'x8' Conc.
Access Lid Buried
Top El 952.18
FL (N)-935.22 (Out)
FL (SE)-944.11 (In)
FL (S)-938.56 (In)

Begin Liner Pipe (Host)
Sta. 156+22.58 ℄ Roe Blvd.
91.47' LT

JB ✦263 4'x4' Conc.
Top El-959.24
FL (NW)-945.37 (Out)
FL (ENE)-945.48 (In)

Cl ✦271 7'x4' Conc.
Top El-956.45
FL (SSE)-944.71 (Out)
FL (NW)-944.75 (In)
FL (NNW)-944.96 (In)

Cl ✦268 8'x4' Conc.
Top El-956.77
FL (ENE)-943.22 (Out)
FL (NNW)-943.61 (In)
FL (SSE)-952.74 (In)

Const. Limits

Remove 10.0' Exist. 30" RCP

Remove 4.5' Exist. 30" RCP

Remove 3.0' Exist. 30" RCP

Sta. 156+46.80 ℄ Roe Blvd.
Remove Existing 4' X 4' Curb Inlet
Construct 5' X 3'
Inlet (Curb) (Setback) (Special), 46.4' RT
Install 30" X 8.0' Storm Sewer Pipe Extension (SW)
Connect Ex. 30" (RCP) (NE)
See Sh. No. 107
Top Elev. = 956.68

End Liner Pipe (Host)
Sta. 156+62.29 ℄ Roe Blvd.
82.29' RT

Cl ✦269 4'x4' Conc.
Top El-956.97
FL (ENE)-940.83 (Out)
FL (WSW)-940.93 (In)

JBMH ✦272 8' Dia. Conc.
Top El-956.97
FL (SE)-946.86 (Out)
FL (WNW)-950.32 (In)
FL (SW)-947.19 (In)

ROE BOULEVARD

℄ Proposed Improvements

N 32° 51' 16" W

N 87° 11' 08" E

W 48TH STREET

SKYLINE DRIVE

Cl ✦22385 4'x2' Brick & Conc.
Top El-965.58
FL (N)-960.48 (Out)

Cl ✦22393 4'x2' Brick & Conc.
Top El-965.50
FL (E)-958.90 (Out)
FL (WNW)-959.10 (In)
FL (S)-959.55 (In)

SCALE
PLAN: Lat. & Long.
20' 0 20' 40'

Sta. 75+26.90 ℄ Skyline Dr.
Remove Exist. 21" x 87.9' Storm Sewer (CMP)
Install 21" x 87.9' Storm Sewer (RCP) (E)
Match Existing Flow Lines
See Sh. No. 107

POT +00.00

JB ✦277 5' Dia. Brick. JBMH
Top El-960.95
FL (E)-952.60 (Out)
FL (W)-955.20 (In)

Sta. 76+19.34 ℄ Skyline Dr.
Adjustment of Manhole, Exist. 4' Round
To Match Proposed Grade
Top Elev = 957.34

JBMH ✦275 4' Dia. Conc.
Top El-956.72
FL (NE)-947.97 (Out)
FL (W)-948.00 (In)

Cl ✦274 11'x3' Conc.
Top El-955.87
FL (SE)-951.39 (Out)

Remove Exist. 11' X 3' Junction Box

Remove Exist. 18" RCP

Sta. 158+67.39 ℄ Roe Blvd.
Remove Existing 9.5' X 3' Junction Box
Construct 6' X 7'
Inlet (Curb) (Setback) (Special), 74.3' LT
Connect Ex. 18" (RCP) (N)
Connect Ex. 24" (RCP) (E)
Top Elev. = 956.56

JB ✦273 9.5'x3' Conc.
Top El-955.57
FL (SE)-950.90 (Out)
FL (NW)-951.23 (In)
FL (NNW)-951.31 (In)

Cl ✦278 8'x3' Conc.
Top El-957.68
FL (SSE)-952.05 (Out)
FL (ENE)-952.33 (In)
FL (NNW)-952.67 (In)

Sta. 158+45.79 ℄ Roe Blvd.
Adjustment of Manhole, Exist. 8' Round
To Match Proposed Grade
Top Elev = 957.00

Cl ✦279 6'x3' Conc.
Top El-957.86
FL (WSW)-952.95 (Out)

Sidewalk Easement Per Plat

Utility Easement Per Plat

Amended Reciprocal Cross-Easement Agreement
Non-Exclusive Easement for Pedestrian and Vehicle Access and Parking
Mission Township Main Sewer Dist. No. 1
Elec. Esmt.

O.W. Force Main and Gravity Outfall Esmt.

Ex.12 Ex.11 Ex.10 E2 E3 E5 E6 E7 E9

PT +83.70

155 156 157 158 159

KANSAS DEPARTMENT OF TRANSPORTATION
STORM SEWER PLAN
SYSTEM E 2 OF 2

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted :25-APR-2019 12:58
Drawn By: lrosenbaum
File : 13668R1409.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 104 | 393 |

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

Begin Structure Invert Repair
Sta. 157+60.36 ℄ Roe Blvd.
511.89' RT

Cl ✦282 8'x12' Conc.
Top El=918.64
FL (NE)=908.28 (Out)
FL (SW)=913.16 (In)

End Structure Invert Repair
Sta. 157+11.42 ℄ Roe Blvd.
297.39' RT

JB ✦270 5'x5' Conc.
Top El=949.28
FL (ENE)=934.95 (Out)
FL (WSW)=935.25 (In)

CP ✦142

Const. Limits

W 48TH STREET

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

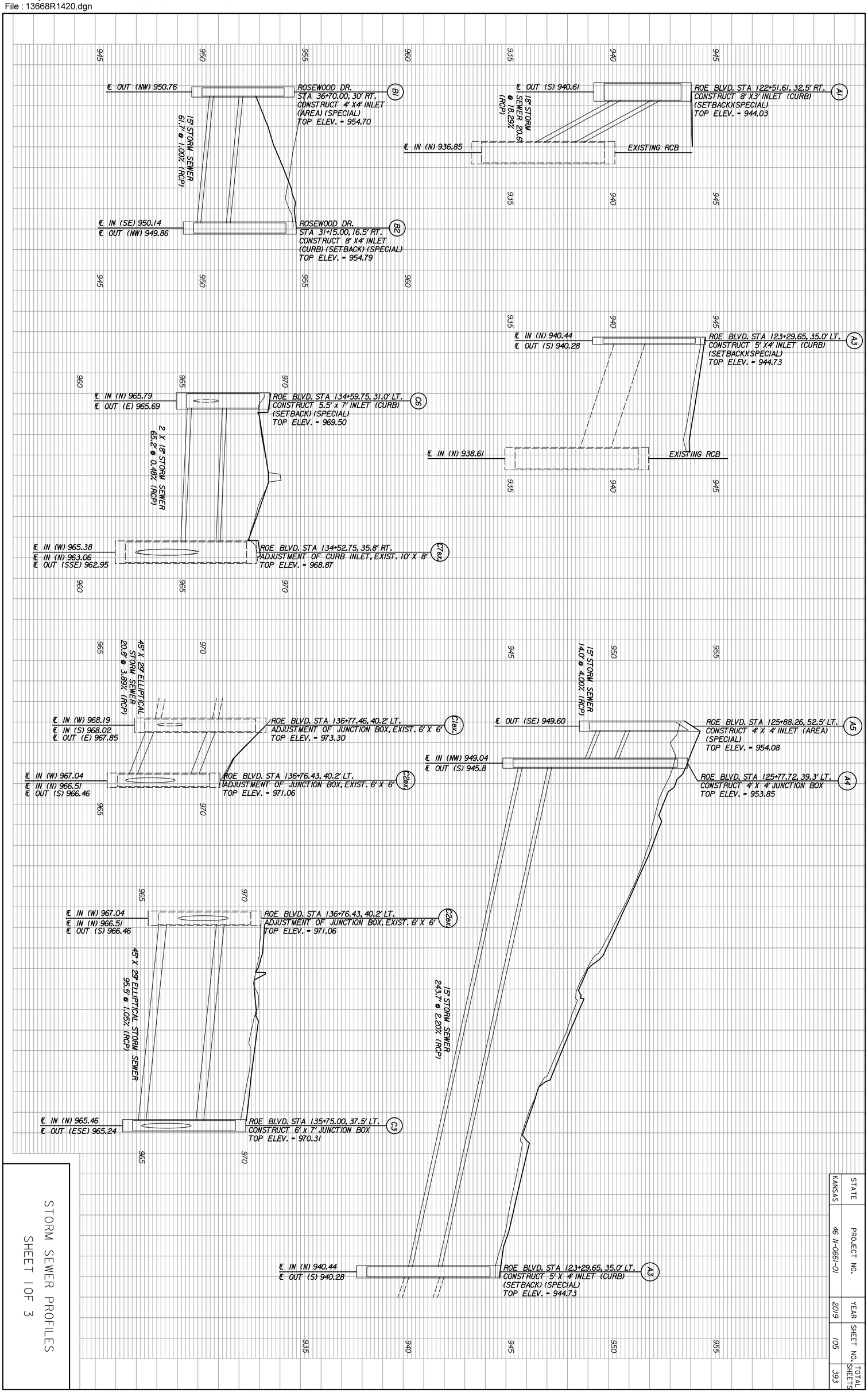
CONSTRUCTION NOTE:

1 Contractor shall install concrete invert patch 220 feet upstream from existing curb inlet to address defects. For details see sheet 114

KANSAS DEPARTMENT OF TRANSPORTATION
STORM SEWER PLAN
60" CMP INVERT REPAIR

Plotted : 25-APR-2019 12:58
Drawn By : Irosenbaum
File : 13668R1409A.dgn

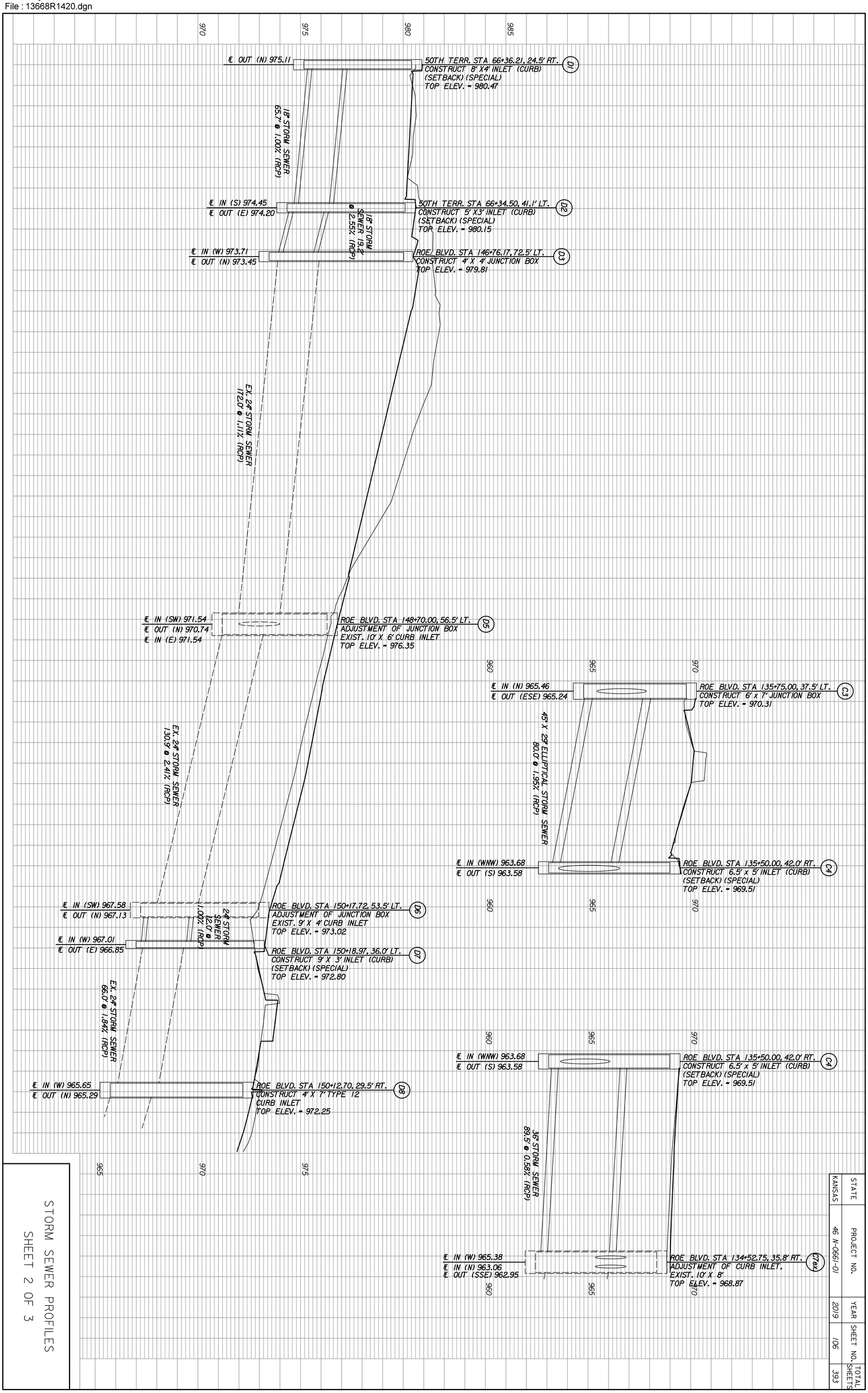
Drawn By : lrosenbaum Plotted : 25-APR-2019 12:58
File : 13668R1420.dgn




STORM SEWER PROFILES
SHEET 10F 3

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 105 | 393 |

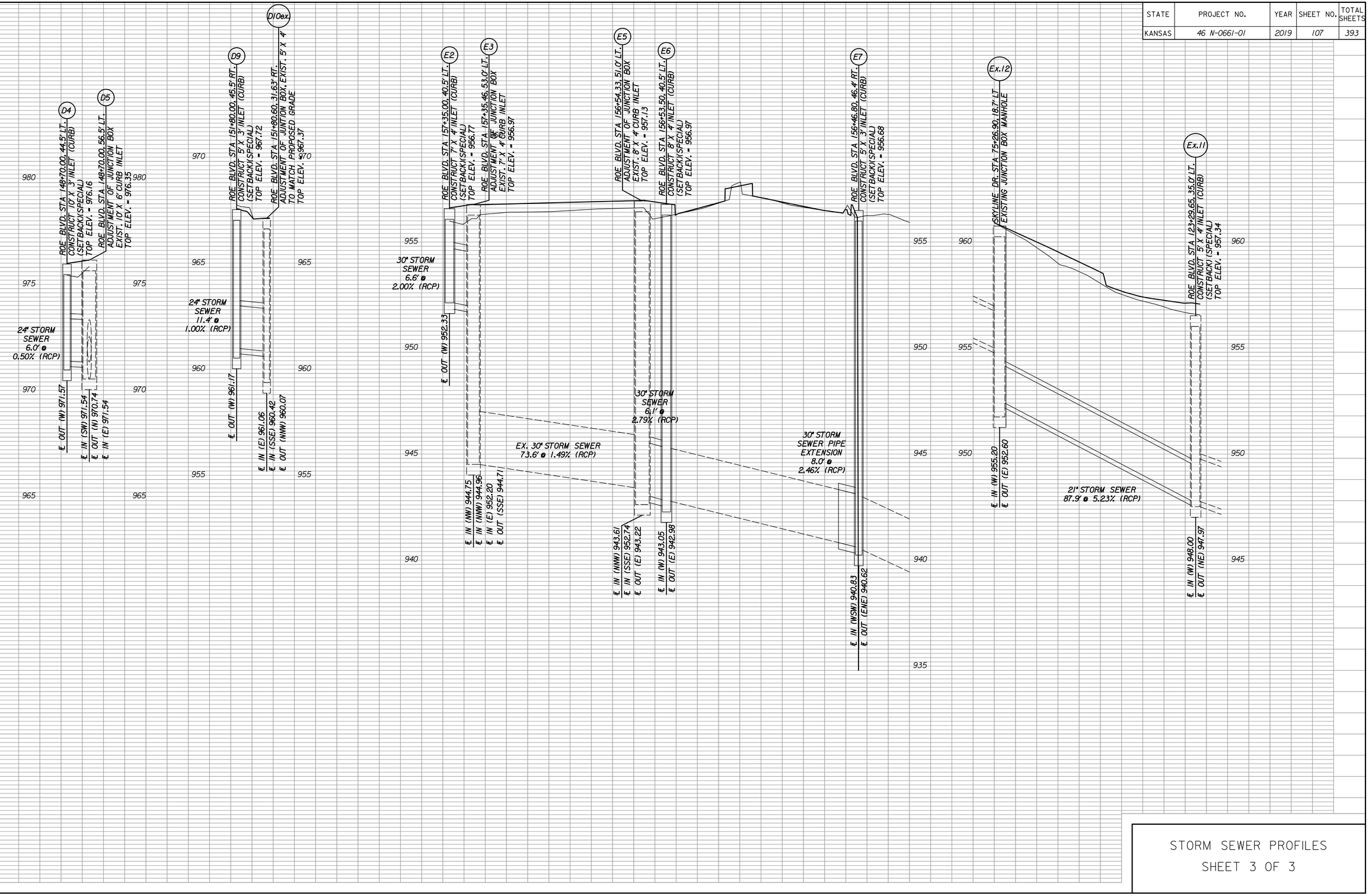
Drawn By : lrosenbaum Plotted : 25-APR-2019 12:58
File : 13668R1420.dgn




STORM SEWER PROFILES
SHEET 2 OF 3

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 106 | 393 |

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 107 | 393 |




STORM SEWER PROFILES
SHEET 3 OF 3

Plotted : 25-APR-2019 12:58
Drawn By : lrosenbaum
File : 13668R1420.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 108 | 393 |

# SCHEDULE OF INLETS AND MANHOLES

| STRUCTURE NUMBER | ALIGNMENT | STATION | SIDE | TYPE | | | | | | | | SEWER DATA | | | | | | | | | ELEVATIONS | | DIMENSIONS | | | STORM SEWER LIN. FT. | | | | | | | SEWER EXC. (CU.YD.) | | HT. FILL | CONC. AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MANHOLE TOP | CURB INLET | TYPE 12 CURB INLET | CURB INLET TOP | JUNCT. BOX | JUNCT. BOX TOP | AREA INLET | RADIUS | INFLOW PIPES | | | | | | OUTFLOW PIPES | | | TOP ⊛ | FLOOR | L (FT.) | W (FT.) | H (FT.) | 15" | 18" | 21" | 24" | 30" | 36" | 45"X29" ELLIPTICAL | COMM. | ROCK | FT. | CL. NO. |
| | | | | | | | | | | | | SIZE | ℄ ELEV. | SIZE | ℄ ELEV. | SIZE | ℄ ELEV. | SIZE | ℄ ELEV. | GRADE | | | | | | | | | | | | | | | | |
| EX. 1 | Roe Boulevard | 101+43.88 | LEFT | | | | 1 | | | | | 15 | 920.85 | 30 | 919.17 | 36 | 917.07 | 36 | 918.77 | | 929.49 | | 5 | 6 | | | | | | | | | | | | |
| EX. 2 | Roe Boulevard | 103+49.34 | LEFT | | | | 1 | | | | | | | | | | | 15 | 924.92 | | 931.13 | | 5 | 4 | | | | | | | | | | | | |
| EX. 3 | W 57th Street | 1+36.49 | RIGHT | | | | 1 | | | | | 48 | 926.88 | | | | | 48 | 926.75 | | 935.08 | | 5 | 8.5 | | | | | | | | | | | | |
| EX. 4 | Linden Street | 6+05.27 | LEFT | | | | 1 | | | | | 48 | 928.14 | | | | | 60X36 RCB | 928.10 | | 936.14 | | 8 | 6.5 | | | | | | | | | | | | |
| EX. 5 | Linden Street | 5+57.63 | LEFT | | | | 1 | | | | | | | | | | | 15 | 931.74 | | 936.24 | | 5 | 3 | | | | | | | | | | | | |
| EX. 7 | Roe Lane | 71+68.57 | LEFT | | | | | | 1 | | | 30 | 955.67 | 24 | 955.65 | | | 30 | 955.35 | | 971.82 | | 4.3 | 3.7 | | | | | | | | | | | | |
| EX. 8 | Roe Boulevard | 154+04.63 | LEFT | 1 | | | | | | | 4 | 15 | 956.73 | 15 | 965.72 | | | 15 | 956.64 | | 961.02 | | | | | | | | | | | | | | | |
| EX. 9 | Roe Boulevard | 154+52.50 | LEFT | | | | 1 | | | | | 15 | 955.91 | | | | | 15 | 955.61 | | 959.84 | | 8 | 3 | | | | | | | | | | | | |
| EX. 10 | Roe Boulevard | 158+45.79 | LEFT | 1 | | | | | | | 8 | 24 | 950.32 | 24 | 947.19 | | | 30 | 946.86 | | 957.00 | | | | | | | | | | | | | | | |
| EX. 11 | Skyline Drive | 76+19.34 | LEFT | 1 | | | | | | | 4 | 21 | 948.00 | | | | | 24 | 947.97 | | 957.34 | | | | | | | | | | | | | | | |
| EX. 12 | Skyline Drive | 75+26.90 | LEFT | | | | | | | | | 21 | 955.20 | | | | | 21 | 952.60 | 5.23% | | | | | | | 87.9 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1 | Roe Boulevard | 122+51.61 | RIGHT | | 1 | | | | | | | | | | | | | 18 | 940.61 | 18.29% | 944.03 | 939.53 | 8 | 3 | 4.50 | | 20.6 | | | | | | | | |
| A2 | Roe Boulevard | 122+65.61 | LEFT | | | | 1 | | | | | | | | | | | 120XT2 RCB | 934.42 | | 943.99 | | 5 | 3 | | | | | | | | | | | | |
| A3 | Roe Boulevard | 123+29.65 | LEFT | | 1 | | | | | | | 15 | 940.45 | | | | | 18 | 940.28 | | 944.73 | 939.73 | 5 | 4 | 5.00 | | | | | | | | | | | |
| A4 | Roe Boulevard | 125+77.72 | LEFT | | | | | 1 | | | | 15 | 949.04 | | | | | 15 | 945.80 | 2.20% | 953.85 | 945.35 | 4 | 4 | 8.50 | 243.7 | | | | | | | | | | |
| A5 | Roe Boulevard | 125+88.26 | LEFT | | | | | | | 1 | | | | | | | | 15 | 949.60 | 4.00% | 954.08 | 949.08 | 4 | 4 | 5.00 | 14.0 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B1 | Rosewood Drive | 36+70.00 | RIGHT | | | | | | | 1 | | | | | | | | 15 | 950.76 | 1.00% | 954.70 | 950.20 | 4 | 4 | 4.50 | 61.7 | | | | | | | | | | |
| B2 | Rosewood Drive | 36+15.00 | RIGHT | | 1 | | | | | | | 15 | 950.14 | | | | | 15 | 949.89 | | 954.79 | 949.79 | 8 | 4 | 5.00 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1 EX. | Roe Boulevard | 136+77.46 | LEFT | | | | | | 1 | | | 30 | 968.19 | 15 | 968.02 | | | 45x29 Ellip. | 967.85 | 3.89% | 973.30 | | 6 | 6 | | | | | | | | 20.8 | | | | |
| C2 EX. | Roe Boulevard | 136+76.43 | LEFT | | | | | | 1 | | | 45x29 Ellip. | 967.04 | 15 | 966.51 | | | 45x29 Ellip. | 966.46 | 1.05% | 971.06 | | 6 | 6 | | | | | | | | 95.5 | | | | |
| C3 | Roe Boulevard | 135+75.00 | LEFT | | | | | 1 | | | | 45x29 Ellip. | 965.46 | | | | | 45x29 Ellip. | 965.24 | 1.95% | 970.31 | 964.81 | 6 | 7 | 5.50 | | | | | | | 80.0 | | | | |
| C4 | Roe Boulevard | 135+50.00 | RIGHT | | 1 | | | | | | | 45x29 Ellip. | 963.68 | 30 | 963.63 | | | 36 | 963.58 | 0.58% | 969.51 | 963.01 | 6.5 | 5 | 6.50 | | | | | 89.5 | | | | | |
| C5 | Roe Boulevard | 135+23.25 | LEFT | | 1 | | | | | | | | | | | | | 15 | 966.58 | | 969.75 | | 6 | 6 | | | | | | | | | | | |
| C6 | Roe Boulevard | 134+59.75 | LEFT | | 1 | | | | | | | 15 | 965.79 | | | | | 18, 18 | 965.69 | 0.48% | 969.50 | 965.00 | 5.5 | 7 | 4.50 | | 130.4 | | | | | | | | |
| C7 EX. | Roe Boulevard | 134+52.75 | RIGHT | | | | 1 | | | | | 18, 18 | 965.38 | 36 | 963.06 | | | 36 | 962.95 | | 968.87 | | 10 | 8 | | | | | | | | | | | |
| C8 EX. | Roe Boulevard | 133+93.21 | RIGHT | | | | | | 1 | | | 36 | 962.78 | | | | | 36 | 962.63 | | 968.48 | | 4 | 4 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D1 | W 50th Terrace | 66+36.21 | RIGHT | | 1 | | | | | | | | | | | | | 18 | 975.11 | 1.00% | 980.47 | 974.97 | 8 | 4 | 5.50 | | 65.7 | | | | | | | | |
| D2 | W 50th Terrace | 66+34.50 | LEFT | | 1 | | | | | | | 18 | 974.45 | | | | | 18 | 974.20 | 2.55% | 980.15 | 974.15 | 5 | 3 | 6.00 | | 19.2 | | | | | | | | |
| D3 | Roe Boulevard | 146+76.17 | LEFT | | | | | 1 | | | | 18 | 973.71 | | | | | 24 | 973.45 | | 980.03 | 973.03 | 4 | 4 | 7.00 | | | | | | | | | | |
| D4 | Roe Boulevard | 148+70.00 | LEFT | | | | 1 | | | | | | | | | | | 24 | 971.57 | 0.50% | 976.16 | 971.16 | 10 | 3 | 5.00 | | | | 6.0 | | | | | | |
| D5 | Roe Boulevard | 148+70.00 | LEFT | | | | | | 1 | | | 24 | 971.54 | 24 | 971.54 | | | 24 | 970.74 | | 976.35 | | 10 | 6 | | | | | | | | | | | |
| D6 | Roe Boulevard | 150+17.72 | LEFT | | | | | | 1 | | | 24 | 967.58 | | | | | 24 | 967.13 | 1.00% | 973.02 | | 9 | 4 | | | | | 12.0 | | | | | | |
| D7 | Roe Boulevard | 150+18.97 | LEFT | | 1 | | | | | | | 24 | 967.01 | | | | | 24 | 966.85 | | 972.80 | 966.80 | 9 | 3 | 6.00 | | | | | | | | | | |
| D8 | Roe Boulevard | 150+12.70 | RIGHT | | | 1 | | | | | | 24 | 965.65 | | | | | 24 | 965.29 | | 972.25 | 965.25 | 4 | 7 | 7.00 | | | | | | | | | | |
| D9 | Roe Boulevard | 151+80.00 | RIGHT | | 1 | | | | | | | | | | | | | 24 | 961.17 | 1.00% | 967.72 | 960.72 | 5 | 3 | 7.00 | | | | 11.4 | | | | | | |
| D10 EX. | Roe Boulevard | 151+80.60 | RIGHT | | | | | | 1 | | | 24 | 961.06 | 24 | 960.42 | | | 24 | 960.07 | | 967.37 | | 5 | 4 | | | | | | | | | | | |
| D11 | Roe Boulevard | 153+32.00 | RIGHT | | | 1 | | | | | | 24 | 956.15 | | | | | 24 | 955.97 | | 962.47 | | 4 | 5 | | | | | | | | | | | |
| D12 | Roe Boulevard | 154+84.96 | RIGHT | | 1 | | | | | | | 24 | 951.79 | | | | | 24 | 951.51 | | 959.23 | | 4 | 6 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E2 | Roe Boulevard | 157+35.00 | LEFT | | 1 | | | | | | | | | | | | | 30 | 952.33 | 2.00% | 956.77 | 951.77 | 7 | 4 | 5.00 | | | | | 6.6 | | | | | |
| E3 | Roe Boulevard | 157+35.46 | LEFT | | | | | | 1 | | | 30 | 952.20 | 18 | 944.75 | 30 | 944.96 | 30 | 944.71 | | 956.97 | | 7 | 4 | | | | | | | | | | | |
| E4 | Roe Boulevard | 152+06.94 | LEFT | | 1 | | | | | | | | | | | | | 15 | 960.88 | | 967.40 | 960.40 | 9 | 9 | 7.00 | | | | | | | | | | |
| E5 | Roe Boulevard | 156+54.33 | LEFT | | | | | | 1 | | | 30 | 943.61 | 15 | 952.74 | | | 30 | 943.22 | 2.79% | 957.13 | | 8 | 4 | | | | | | 6.1 | | | | | |
| E6 | Roe Boulevard | 156+53.50 | LEFT | | 1 | | | | | | | 30 | 943.05 | | | | | 30 | 942.98 | | 956.97 | 942.47 | 8 | 4 | 14.50 | | | | | | | | | | |
| E7 | Roe Boulevard | 156+46.80 | RIGHT | | 1 | | | | | | | 30 | 940.83 | | | | | 30 | 940.62 | 2.46% | 956.68 | 940.18 | 5 | 3 | 16.50 | | | | | 6.7 | | | | | |
| E9 | Roe Boulevard | 158+67.39 | LEFT | | 1 | | | | | | | 18 | 951.23 | | | | | 24 | 950.90 | | 956.56 | 948.56 | 6 | 7 | 8.00 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | | | | 3 | 16 | 2 | 9 | 3 | 9 | 2 | | | | | | | | | | | | | | | | 319.4 | 235.9 | 87.9 | 29.4 | 19.4 | 89.5 | 196.3 | | | | |

⊛ Top elevations are located at center of each structure.

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 3 | 1-28-05 | Changed Class to Grade concrete | S.W.K. | J.O.B. |
| 2 | 5-21-99 | Added top elevation location note | R.J.S. | J.O.B. |
| 1 | 10-8-90 | Detailed on CADD | R.J.S. | J.O.B. |

KANSAS DEPARTMENT OF TRANSPORTATION

## SCHEDULE INLETS AND MANHOLES

~~RD653H~~

| | | | |
|---|---|---|---|
| FHWA APPROVAL 06-10-05 | | APP'D. James O. Brewer | |
| DESIGNED | DETAILED | QUANTITIES | TRACED B.N.B. |
| DESIGN CK. | DETAIL CK. | QUAN.CK. | TRACE CK. R.J.S. |

KDOT Graphics Certified 03-29-2018

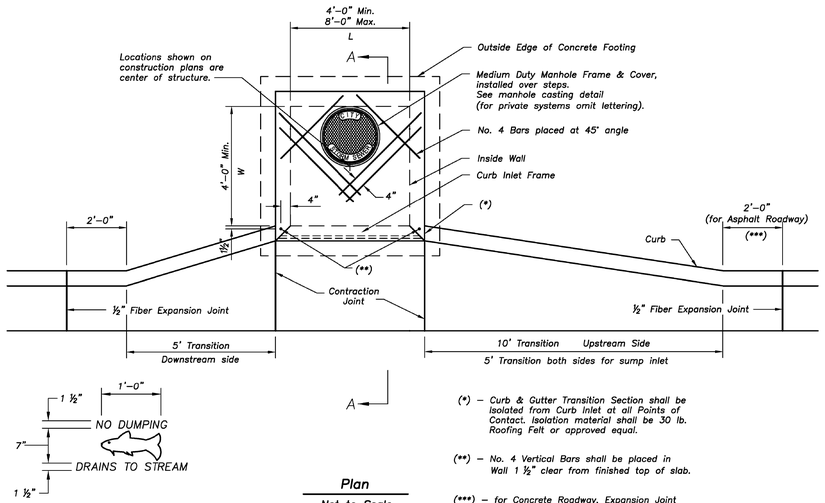
KDOT Graphics Certified

Plotted :25-APR-2019 12:58

Drawn By : lrosenbaum
File : 13668R0401.dgn

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 109 | 393 |




Plan

Not to Scale

(*) – Curb & Gutter Transition Section shall be isolated from Curb Inlet at all Points of Contact. Isolation material shall be 30 lb. Roofing Felt or approved equal.

(**) – No. 4 Vertical Bars shall be placed in Wall 1 ½" clear from finished top of slab.

(***) – for Concrete Roadway, Expansion Joint location to match the pavement joint (1'–0" Min.; 3'–0" Max.)

Note:

Imprint to be ¼" in depth stamped into inlet top when poured.

## ENVIRONMENTAL STAMP DETAIL

## Curb Inlet Notes

### General

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. All storm sewer structures shall be pre–cast or poured in place. If pre–cast structures are used, the tops shall be poured in place and the wall steel shall be left exposed to a height 2" below the finish top elevation, or as directed by the City Engineer.
3. Pre–cast shop drawings are to be approved by the City Engineer for publicly financed or administered projects. Pre–cast shop drawings for privately financed projects are to be submitted to the Engineering Services Division of the Planning and Development Services Department.
4. Do not scale these drawings for dimensions or clearances. Any questions regarding dimensions shall be brought to the attention of the City Engineer prior to construction.
5. On–grade inlets shall conform to the street grade and sump inlets shall be level.
6. The first dimension listed in the construction notes is the "L" dimension. The second dimension is the "W" dimension. The concrete thickness and reinforcement shown is for boxes with ("L"+"H") and ("W"+"H") less than or equal to 20. For boxes with either of these calculations greater than 20, a special design is required.

### Concrete

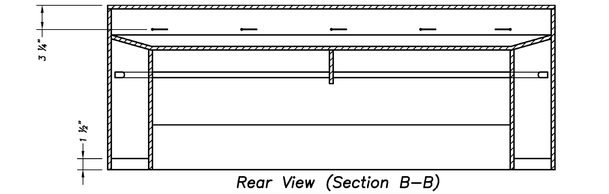
7. Concrete used in this work shall be KCMMB4K, as approved by the Kansas City Metropolitan Materials Board, and shall meet the requirements of the OPMC.
8. Inlet floors shall be shaped with non–reinforced concrete inverts to provide smooth flow.
9. Bevel all exposed edges with ¾" triangular molding.

### Reinforcing Steel

10. Reinforcing steel shall be new billet, minimum Grade 40 as per ASTM A615M, and shall be bent cold.
11. All dimensions relative to reinforcing steel are to centerline of bars. 2" clearance shall be provided throughout unless noted otherwise. Tolerance of +/– ⅛"shall be permitted.
12. All lap splices not shown shall be a minimum of 40 bar diameters in length.
13. All reinforcing steel shall be supported on fabricated steel bar supports @ 3'–0" maximum spacing.
14. All dowels shall be accurately placed and securely tied in place prior to placement of bottom slab concrete. Sticking of dowels into fresh or partially hardened concrete will not be acceptable.

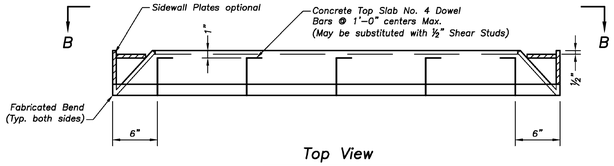
### Construction

15. The bottom slab shall be at least 24 hours old before placing sidewall concrete. All sidewall forms shall remain in place a minimum of 24 hours after sidewalls are poured before removal, and after removal shall be immediately treated with membrane curing compound.
16. All curb inlet tops are to be constructed after final curb string line has been approved by the Engineer and prior to curb construction, or as directed by the City Engineer.
17. Pipe connections to pre–cast structures shall have a minimum of 6" of concrete around the entire pipe within 2' of the outside wall of structure. A minimum of 2" – maximum of 6" clearance is required between the outside pipe wall and the edge of blackout.
18. Tamped backfill shall be used around structures, except under paved areas. Tamped backfill shall be finely divided job excavated material free from debris, organic material and stones, compacted to 95% maximum density as determined by AASHTO STANDARD, Method T–99.
Removable Flowable Fill is required under any portion of paved right of way, including the area within existing or future public street pavement and under existing or future curb and gutter, median, asphalt path, concrete sidewalk.



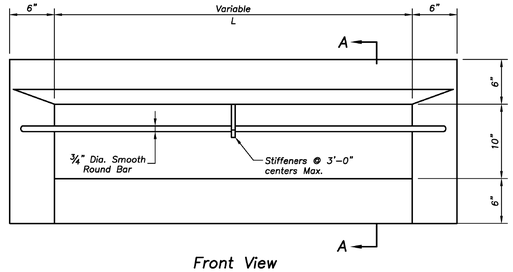

Rear View (Section B–B)

Not to Scale



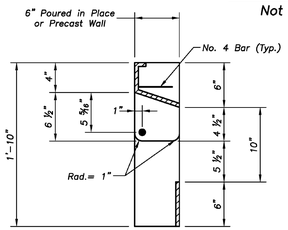

Top View

Not to Scale




Front View

Not to Scale

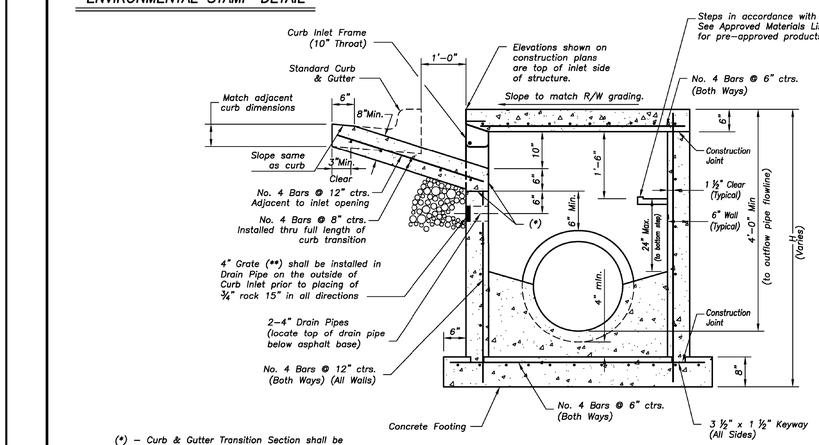



Side View (Section A–A)

Not to Scale

## Curb Inlet Frame Notes

1. All welds shall be performed in accordance with appropriate AWS Specifications and Procedures.
2. All welds on exposed surfaces shall be dressed so as to provide a pleasing finished appearance.
3. All flat steel shall be 7 Gage or 3/16" thick.
4. The entire frame shall be hot dip zinc coated in accordance with ASTM A–123.




Section A–A

Not to Scale

(*) – Curb & Gutter Transition Section shall be isolated from Curb Inlet at all points of contact. Isolation material shall be 30 lb. Roofing Felt or approved equal.

(**) – the material of the grate shall match the material of the pipe and shall be as follows:

a) PVC: Pipe – 4" Schedule 40 PVC meeting ASTM D–1785'
Grate – 4" PVC Snap–in Drain – meets ASTM D–2665, with Stainless Steel (Type 304) Cover, mounted with two 18–8 Stainless Steel Screws; Maximum opening size ¼".

b) HDPE: Pipe – 4"HDPE meeting AASHTO M252, Type S;
Grate – 4"HDPE – meets ASTM D–3350; Maximum opening size ¼".

## CURB INLET (10" THROAT)

## CURB INLET FRAME (10" THROAT)

Year 2018 Edition

| REVISIONS: | |
|---|---|
| 07/01/03 | Concrete Mix Designation; |
| March '05 | Inlet Frame Details; |
| Jan. 2006 | Miscellaneous; |
| Jan. 2013 | Inlet Frame Details; |
| RELATED ORDINANCES: | |
| OPMC Title 15 | |

OVERLAND PARK KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

CURB INLET DETAILS

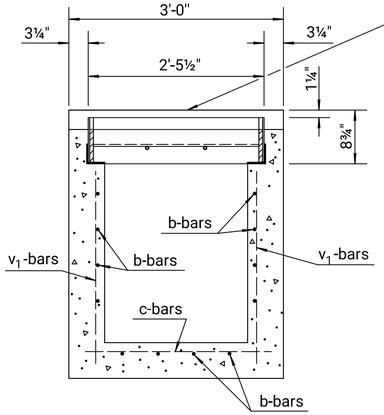
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WEB SITE ADDRESS: http://www.opkansas.org/Doing-Business/Construction-Details

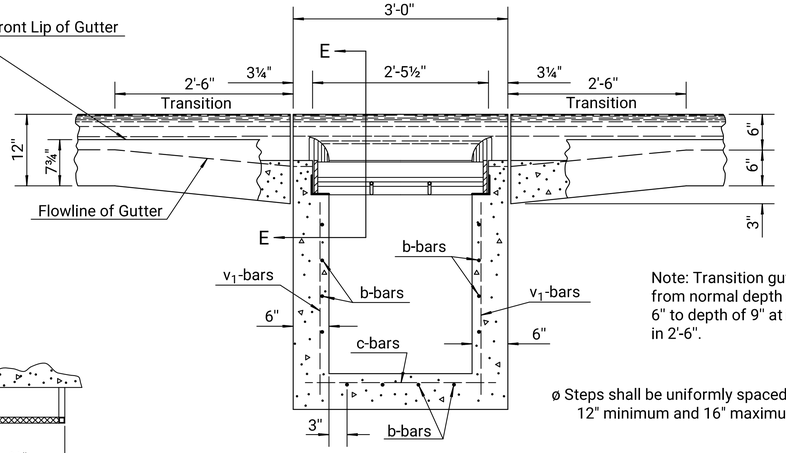
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File : 13668R2101.dgn

CURB INLET DETAILS

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 110 | 393 |

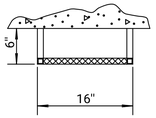



SECTION D-D




SECTION C-C

Note: Transition gutter from normal depth of 6" to depth of 9" at inlet in 2'-6".

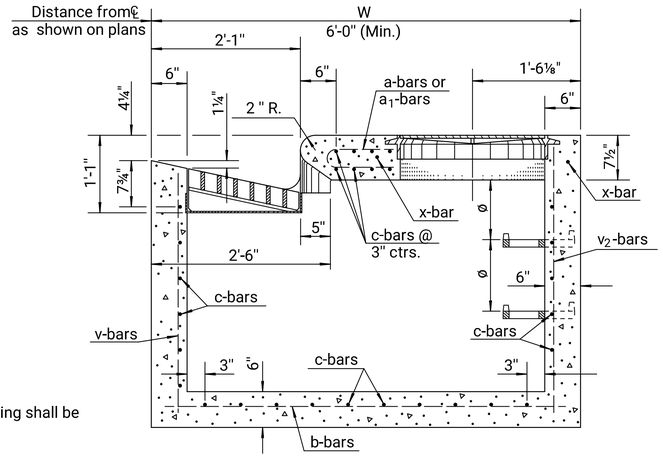




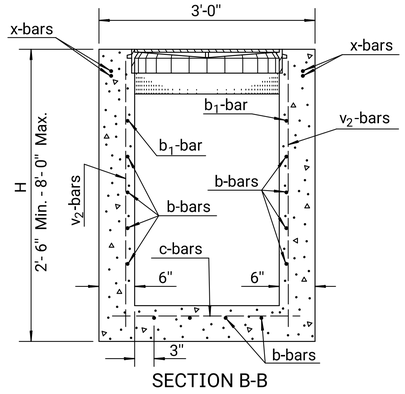

STEP DETAILS

ø Steps shall be uniformly spaced. Spacing shall be 12" minimum and 16" maximum.

Note: All reinforcing shall be #4 at 6" centers except where noted. Minimum clear distance to reinforcement shall be 1".




SECTION A-A




SECTION B-B

Notes:

Concrete Grade 3.0, Concrete Grade 3.0 (AE), or the mix used in Concrete Pavement, at the Contractor's option, shall be used throughout.

All exposed edges shall be finished with an edging tool.

Reinforcing bars shall be bent around pipe.

No reduction in concrete quantities shall be made for pipe openings.

When directed by the Engineer, a small opening in the back of the inlet shall be provided in order to drain a low area. Reinforcing bars shall extend through the opening. No reduction in concrete quantities will be made for this opening.

When directed by the Engineer, the top of the inlet shall be sloped slightly to approximately fit the ground line or other conditions.

The floor of the inlet shall be shaped as shown in various "EXAMPLES" on Reinforced Concrete Manhole Standard Drawing RD633.

No addition in concrete quantities shall be made for shaping floor of inlet.

No reduction in pay length of curb, gutter, or curb & gutter will be made through the inlet area.

All exposed structural steel shall be painted with a coat of inorganic zinc primer and then with a topcoat or a field coat of organic zinc, each coat to be 3 to 4 mils. As an alternate, the grate and frame may be hot dip galvanized after fabrication in accordance with the Standard Specifications.

All structural steel shall comply with ASTM A-36, A-242, or A-441.

All castings shall be gray iron and shall comply with the KDOT Standard Specifications.

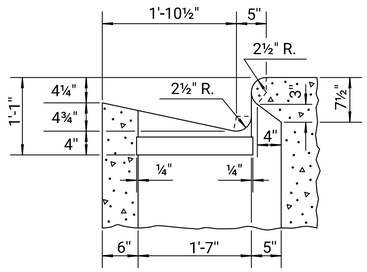
The weight of castings includes no allowance for fillets and overruns.

Curb and Gutter sections shall be shaped as shown where required by the installation of curb inlets. This work shall be subsidiary to other bid items.

See sheet entitled "Reinforcing Steel for Inlets and Manholes" for details and quantities.

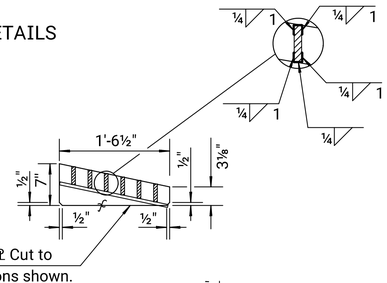
Steps shall be installed in all storm sewer inlets when specified in the plans or when "H" is equal to or greater than six feet. Steps shall comply with the requirements of the KDOT Standard Specification.

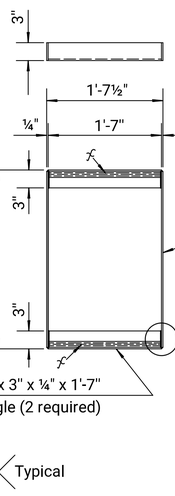
For additional notes and details on Light Type Cast Iron Manhole Cover and Ring Type C, and Cast Iron Steps, see Std. Drawing RD633 "Reinforced Concrete Manhole."

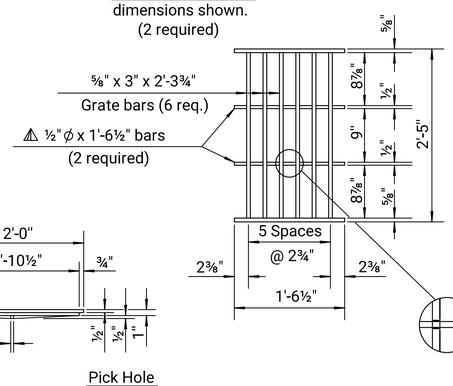


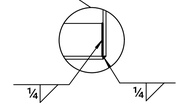

SECTION E-E

Reinforcing steel not shown.



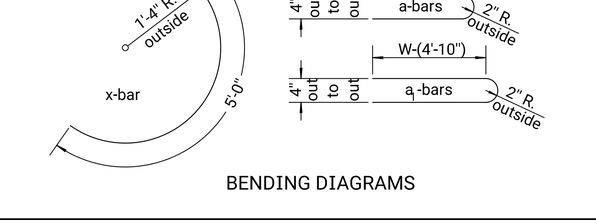

GRATE AND FRAME

Welded Structural Steel Grate & Frame
⚠ Weight = 152 lbs. Each (With Cross-bars)

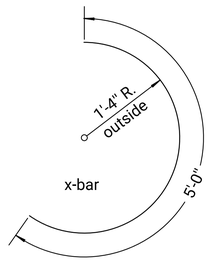
Note: To prevent grate from rocking on bearing angles, machine finish surfaces indicated thus: "ℱ".

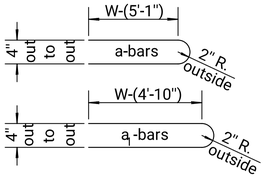
⚠ On all interstate projects and rural area projects, the two ½"ϕ x 1'-6½" bars are to be omitted. The weight of the grate and frame without these bars is 150 lbs. of structural steel.

≠ Hot or cold poured joint sealing compound, or premolded Exp. Jt. Filler (Type B or C).

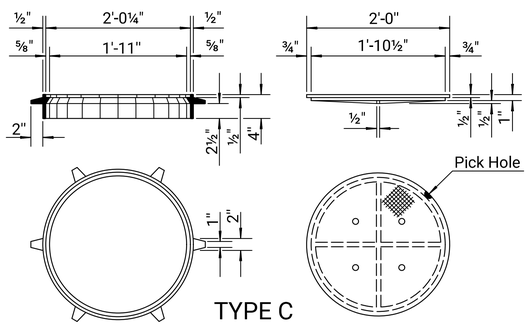



PLAN AND PART SECTION




BENDING DIAGRAMS




TYPE C

CAST IRON MANHOLE RING
Weight = 53 lbs.

CAST IRON MANHOLE COVER
Weight = 64 lbs.

LIGHT TYPE MANHOLE COVER & RING

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 14 | 10-31-17 | Joint Filler Type C Added | A.L.R. | S.W.K. |
| 13 | 1-28-05 | Changed Class to Grade concrete | S.W.K. | J.O.B. |
| 12 | 3- 2-99 | Added hot dipped galvanized option. | R.J.S. | J.O.B. |
| 11 | 12-1 1-97 | Revised step spacing | R.J.S. | J.O.B. |

KANSAS DEPARTMENT OF TRANSPORTATION

# TYPE 1 2
# CURB INLET

RD643

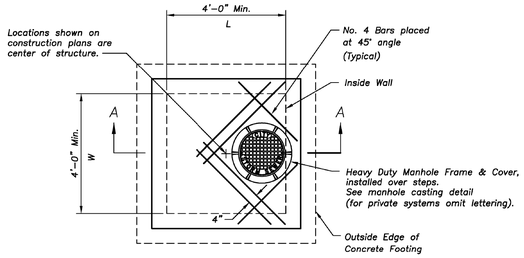
| FHWA APPROVAL | 3-5-18 | APP'D. Scott W. King | |
|---|---|---|---|
| DESIGNED | DETAILED | QUANTITIES | TRACED |
| DESIGN CK. | DETAIL CK. | QUAN.CK. | TRACE CK. |

KDOT Graphics Certified 03-20-2018

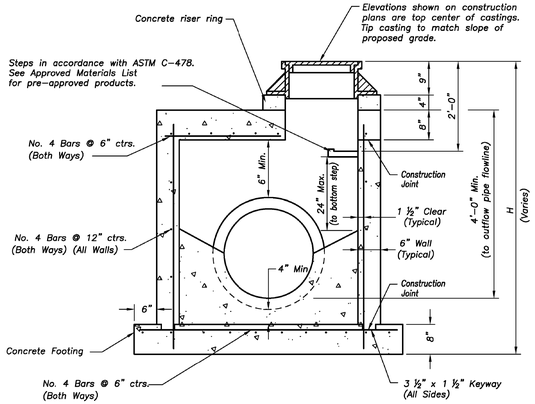
KDOT Graphics Certified

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Drawn By: lrosenbaum
File: 13668R2101.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 111 | 393 |




**Plan**
**Not to Scale**




**Section A–A**
**Not to Scale**

JUNCTION BOX

## Junction Box Notes

### General

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. All storm sewer structures shall be pre-cast or poured in place. If pre-cast structures are used, the tops shall be poured in place and the wall steel shall be left exposed to a height 2" below the finish top elevation, or as directed by the City Engineer.
3. Pre-cast shop drawings are to be approved by the City Engineer for publicly financed or administered projects. Pre-cast shop drawings for privately financed projects are to be submitted to the Engineering Services Division of the Planning and Development Services Department.
4. Do not scale these drawings for dimensions or clearances. Any questions regarding dimensions shall be brought to the attention of the City Engineer prior to construction.
5. The first dimension listed in the construction notes is the "L" dimension. The second dimension is the "W" dimension. The concrete thickness and reinforcement shown is for boxes with ("L"+"W") and ("W"+"W") less than or equal to 20. For boxes with either of these calculations greater than 20, a special design is required.

### Concrete

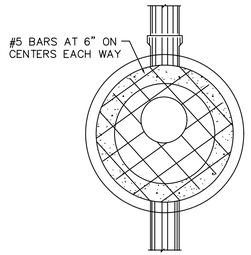
6. Concrete used in this work shall be KCMMB4K, as approved by the Kansas City Metropolitan Materials Board, and shall meet the requirements of the OPMC.
7. Inlet floors shall be shaped with non-reinforced concrete inverts to provide smooth flow.
8. Bevel all exposed edges with ¾" triangular molding.

### Reinforcing Steel

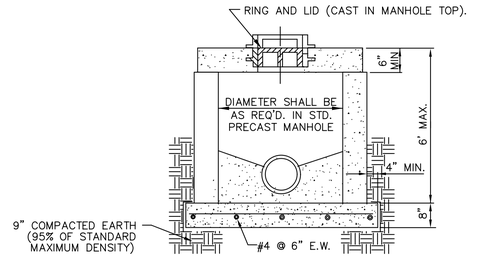
9. Reinforcing steel shall be new billet, minimum Grade 40 as per ASTM A615, and shall be bent cold.
10. All dimensions relative to reinforcing steel are to centerline of bars. 2" clearance shall be provided throughout unless noted otherwise. Tolerance of +/- ⅛" shall be permitted.
11. All lap splices not shown shall be a minimum of 40 bar diameters in length.
12. All reinforcing steel shall be supported on fabricated steel bar supports @ 3'-0" maximum spacing.
13. All dowels shall be accurately placed and securely tied in place prior to placement of bottom slab concrete. Sticking of dowels into fresh or partially hardened concrete will not be acceptable.

### Construction

14. The bottom slab shall be at least 24 hours old before placing sidewall concrete. All sidewall forms shall remain in place a minimum of 24 hours after sidewalls are poured before removal, and after removal shall be immediately treated with membrane curing compound.
15. Pipe connections to pre-cast structures shall have a minimum of 6" of concrete around the entire pipe within 2' of the outside wall of structure. A minimum of 2" – maximum of 6" clearance is required between the outside pipe wall and the edge of blackout.
16. Tamped backfill shall be used around structures, except under paved areas. Tamped backfill shall be finely divided job excavated material free from debris, organic material and stones, compacted to 95% maximum density as determined by AASHTO STANDARD, Method T-99.
Removable Flowable Fill is required under any portion of paved right of way, including the area within existing or future public street pavement and under existing or future curb and gutter, median, asphalt path, concrete sidewalk.




**PLAN**




SHALLOW JUNCTION BOX

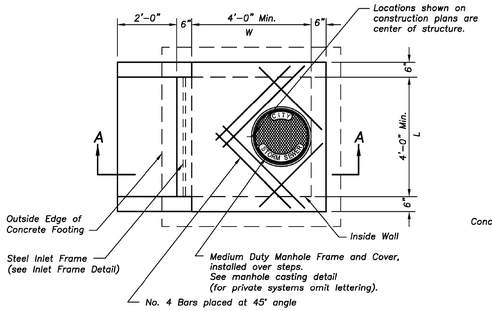
NOTES:

1. If lifting loops are located on the top of the inlet tops, a minimum of 2" cover is required over the lifting loops.
2. Use of a standard lid and ring will be allowed where grade permits.
3. Contractor shall provide steps spaced at 1'-4" o.c. where inlet or manhole depth is greater than 4'-0". install as needed where inlet or manhole depth is less than 4'-0".
4. Concrete used for the construction of junction boxes shall conform to section 2000, concrete construction.
5. See wall section detail 50-2.
6. Pre-cast top is permitted when concrete top is below finished grade.

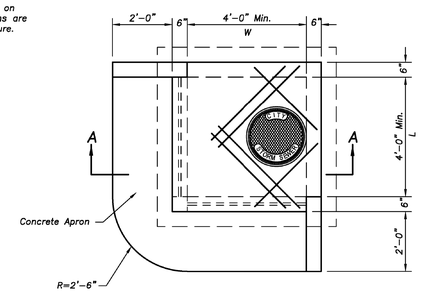
JUNCTION BOX DETAILS

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Drawn By : lrosenbaum
File : 13668R2101.dgn

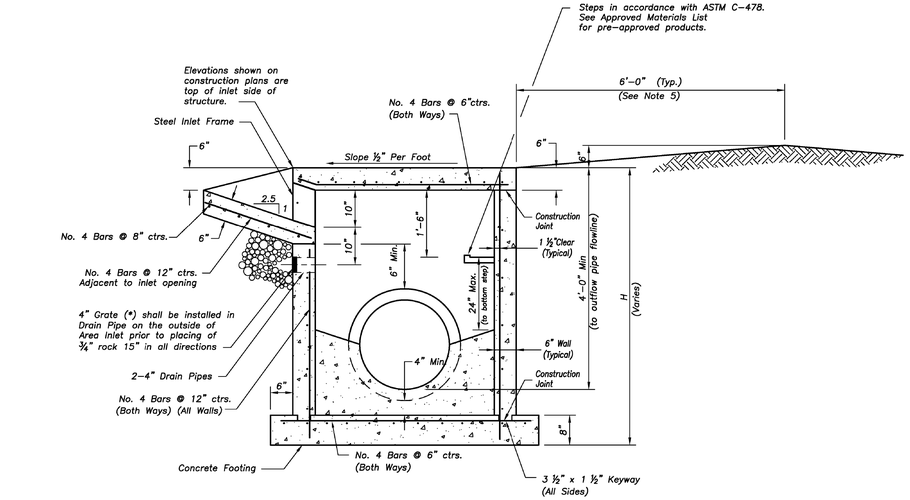
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
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**Plan**
**Not to Scale**




**Plan**
**(w/ 2 Adjacent Openings)**
**Not to Scale**




(*) – the material of the grate shall match the material of the pipe and shall be as follows:

a) PVC: Pipe – 4" Schedule 40 PVC meeting ASTM D-1785' Grate – 4" PVC Snap-in Drain – meets ASTM D-2665, with Stainless Steel (Type 304) Cover, mounted with two 18-8 Stainless Steel Screws; Maximum opening size ¼".

b) HDPE: Pipe – 4"HDPE meeting AASHTO M252, Type S; Grate – 4"HDPE – meets ASTM D-3350; Maximum opening size ¼".

**Section A–A**
**Not to Scale**

## AREA INLET

## Area Inlet Notes

### General

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. All storm sewer structures shall be pre-cast or poured in place. If pre-cast structures are used, the tops shall be poured in place and the wall steel shall be left exposed to a height 2" below the finish top elevation, or as directed by the City Engineer.
3. Pre-cast shop drawings are to be approved by the City Engineer for publicly financed or administered projects. Pre-cast shop drawings for privately financed projects are to be submitted to the Engineering Services Division of the Planning and Development Services Department.
4. Do not scale these drawings for dimensions or clearances. Any questions regarding dimensions shall be brought to the attention of the City Engineer prior to construction.
5. Berm location and elevation may vary. See grading plan for exact location.
6. The first dimension listed in the construction notes is the "L" dimension. The second dimension is the "W" dimension. The concrete thickness and reinforcement shown is for boxes with ("L"+"H") and ("W"+"H") less than or equal to 20. For boxes with either of these calculations greater than 20, a special design is required.

### Concrete

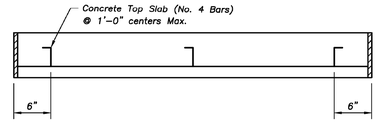
7. Concrete used in this work shall be KCMMB4K, as approved by the Kansas City Metropolitan Materials Board, and shall meet the requirements of the OPMC.
8. Inlet floors shall be shaped with non-reinforced concrete inverts to provide smooth flow.
9. Bevel all exposed edges with ¾" triangular molding.

### Reinforcing Steel

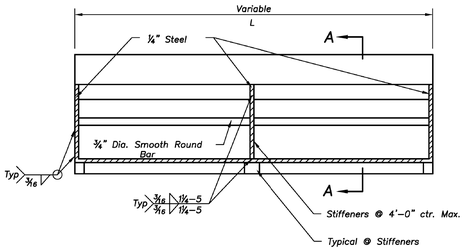
10. Reinforcing steel shall be new billet, minimum Grade 40 as per ASTM A615, and shall be bent cold.
11. All dimensions relative to reinforcing steel are to centerline of bars. 2" clearance shall be provided throughout unless noted otherwise. Tolerance of +/- ⅛" shall be permitted.
12. All lap splices not shown shall be a minimum of 40 bar diameters in length.
13. All reinforcing steel shall be supported on fabricated steel bar supports @ 3'-0" maximum spacing.
14. All dowels shall be accurately placed and securely tied in place prior to placement of bottom slab concrete. Sticking of dowels into fresh or partially hardened concrete will not be acceptable.

### Construction

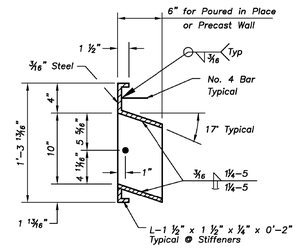
15. The bottom slab shall be at least 24 hours old before placing sidewall concrete. All sidewall forms shall remain in place a minimum of 24 hours after sidewalls are poured before removal, and after removal shall be immediately treated with membrane curing compound.
16. Pipe connections to pre-cast structures shall have a minimum of 6" of concrete around the entire pipe within 2' of the outside wall of structure. A minimum of 2" – maximum of 6" clearance is required between the outside pipe wall and the edge of blackout.
17. Tamped backfill shall be used around structures, except under paved areas. Tamped backfill shall be finely divided job excavated material free from debris, organic material and stones, compacted to 95% maximum density as determined by AASHTO STANDARD, Method T-99.
Removable Flowable Fill is required under any portion of paved right of way, including the area within existing or future public street pavement and under existing or future curb and gutter, median, asphalt path, concrete sidewalk.




**Top View**
**Not to Scale**




**Front View**
**Not to Scale**




**Section A–A**
**Not to Scale**

### Area Inlet Frame Notes

1. All welds shall be performed in accordance with appropriate AWS Specifications and Procedures.
2. All welds on exposed surfaces shall be dressed so as to provide a pleasing finished appearance.
3. All flat steel shall be 7 Gage or ⅜" thick.
4. The entire frame shall be hot dip zinc coated in accordance with ASTM A-123.

## AREA INLET FRAME

Year 2018 Edition

| REVISIONS: | |
|---|---|
| 05/20/03 | Notes; |
| 07/01/03 | Concrete Mix Designation; |
| Jan. 2006 | Miscellaneous; |
| | |
| RELATED ORDINANCES: | |
| OPMC Title 15 | |

OVERLAND PARK KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

AREA INLET DETAILS

DATE: 09/28/99 SHEET: 23

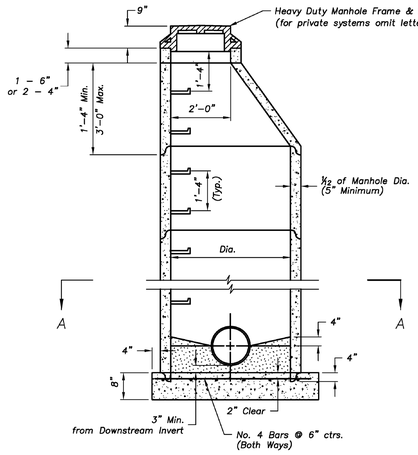
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Drawn By : Irosenbaum
File : 13668R2101.dgn

AREA INLET DETAILS

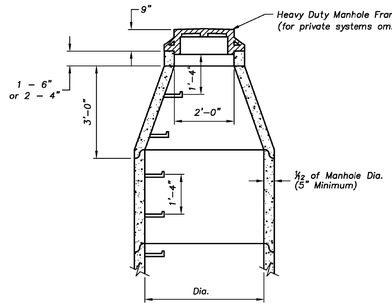
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
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STANDARD PRECAST MANHOLE
(ECCENTRIC CONE)

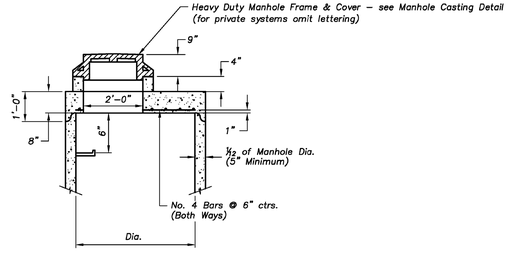
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STANDARD PRECAST MANHOLE
(CONCENTRIC CONE)

(Shallow Manholes only)

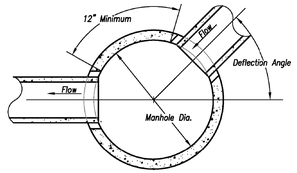
Not to Scale




STANDARD PRECAST MANHOLE
(SHALLOW TYPE)

(To be Used Only When Specified in Plans)

Not to Scale




SECTION A–A

Not to Scale

Precast Manhole Notes

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. The inside diameter of the manhole shall be 4'–0" for pipe diameters from 12" thru 24". All manhole bases (pre–cast or poured–in–place) shall have No. 4 reinforcing bars placed at 6" centers both ways.
3. All manhole rings and covers shown in plans shall be heavy duty.
4. Standard cast iron manhole steps or steel core, plastic coated steps may be used. See Approved Materials List for pre–approved steps.
5. Reinforcement in all sections shall equal or exceed A.S.T.M. C–478 specifications.
6. Mastic material to be used at all sections joints. O–rings may be used for joints below the cone section, but the cone section itself shall not have O–ring joints.
7. Approved gasket or concrete mortar to be used around pipe in knock–outs.
8. Pipe connections to pre–cast structures shall have a minimum of 6" of concrete around the entire pipe within 2' of the structure.

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WEB SITE ADDRESS: http://www.opkansas.org/Doing–Business/Construction–Details

Year 2018 Edition

| REVISIONS: | |
|---|---|
| 05/10/01 | Notes; |
| 07/01/03 | Miscellaneous; |
| Jan. 2006 | Miscellaneous; |
| | |
| RELATED ORDINANCES: | |
| OPMC Title 15 | |

OVERLAND PARK KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

PRECAST MANHOLE DETAIL

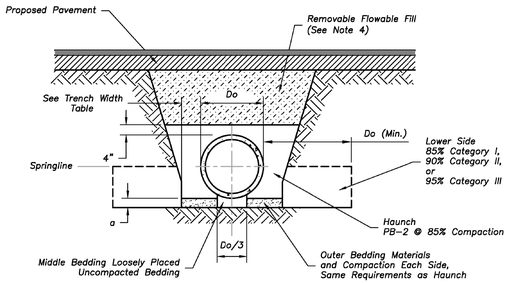
DATE: 06/01/98 SHEET: 25

MANHOLE DETAILS

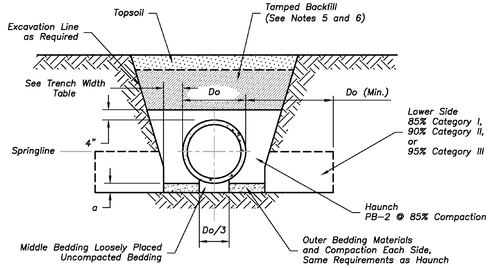
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File : 13668R2101.dgn

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

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Trench Installation under Paved Surface




Trench Installation outside Paved Surface

RCP installation notes:

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. Category I material shall be crushed stone or siliceous gravel meeting the requirements of Section 1107 of the Standard Specifications, Aggregate Designation PB-2.
3. Compaction and soil symbols – i.e. "95% Category I" – refers to Category I soil material with minimum standard Proctor compaction of 95%.
4. Removable Flowable Fill is required as shown on the Trench Installation detail in any paved portion of the right of way, including the area within existing or future public street pavement, under existing or future curb and gutter, median, asphalt path, parking lots, concrete sidewalk. Also under existing concrete, asphalt, or gravel driveway approach and under any future driveway approach, when the location is known. Flowable Fill shall be considered subsidiary to the pipe installation.
5. Tamped backfill shall be used at all other locations unless otherwise noted. Tamped backfill shall be finely divided job excavated material free from debris, organic material and stones, compacted to 95% maximum density as determined by AASHTO STANDARD, Method T-99.
6. Granular fill may be substituted for all or part of tamped backfill. Granular fill shall be AS-3 OP Modified, as specified in the Standard Specifications, compacted to a minimum of 95% of optimum density, within 0 to minus 2 percent of optimum moisture placed up to an elevation 6" below surface. Topsoil shall be used in the top 6".
7. When the existing grade is not at least 18" above the proposed top of pipe profile, install compacted fill (95% Std. Proctor) to 18" above top of pipe prior to excavation for storm sewer installation, or as approved by the City Engineer.
8. Soil in outer bedding and haunch zones shall be compacted to at least the same compaction as specified for the majority of soil in the backfill zone.
9. The trench width shall be wider than shown if required for adequate space to attain the specified compaction in the haunch and bedding zones.
10. For trench walls that are within 10 degrees of vertical, the compaction or firmness of the soil in the trench walls and lower side zone need not be considered.
11. For trench walls with greater than 10 degree slopes that consist of embankment, the lower side shall be compacted to at least the same compaction as specified for the soil in the overfill zone.
12. See street repair details for additional backfill requirements under streets roadways, curbs, sidewalks and other structures in Right-of-Way.

TRENCH WIDTH TABLE

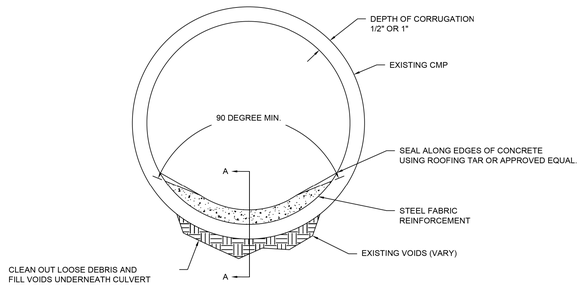
| Pipe Size (inches) | Minimum Side Wall Clearance (inches) |
|---|---|
| 12 – 18 | 6 |
| 21 | 6.5 |
| 24 | 7 |
| 27 | 8 |
| 30 | 8.5 |
| 33 | 9 |
| 36 | 10 |
| 42 | 11 |
| 48 | 12.5 |
| 54 | 13.5 |
| 60 | 15 |
| 66 | 15 |
| 72 | 15.5 |
| 78 | 15.5 |
| 84 | 16 |
| 90 | 16.5 |
| 96 | 17 |
| 102 | 17.5 |
| 108 | 18 |

TABLE OF FILL DEPTHS BELOW PIPE

| D | "a" min. in Soil | "a" min. in Rock |
|---|---|---|
| 60" & smaller | 3" | 6" |
| 66" & larger | 6" | 12" |

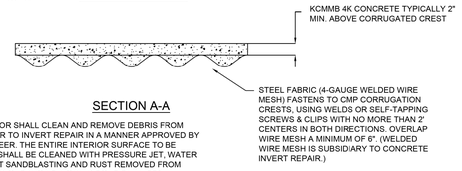
RCP INSTALLATION

No Scale




CLEAN OUT LOOSE DEBRIS AND FILL VOIDS UNDERNEATH CULVERT WITH GROUT TO EXISTING PIPE FLOWLINE PRIOR TO INSTALLING INVERT.

TYPICAL SECTION




SECTION A-A

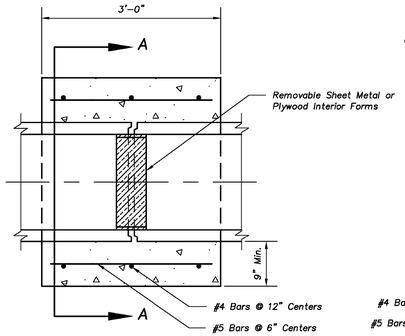
1. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS FROM PIPES PRIOR TO INVERT REPAIR IN A MANNER APPROVED BY THE ENGINEER. THE ENTIRE INTERIOR SURFACE TO BE REPAIRED SHALL BE CLEANED WITH PRESSURE JET, WATER JET OR WET SANDBLASTING AND RUST REMOVED FROM SURFACE TO THE SATISFACTION OF THE ENGINEER.
2. CONTRACTOR SHALL GROUT ALL VOIDS BELOW AND AROUND PIPE AFTER SEDIMENT REMOVAL AND PIPE CLEANING ARE COMPLETE.
3. THE CONCRETE SHALL CURE FOR A MINIMUM OF 48 HOURS BEFORE ANY WATER IS PERMITTED TO FLOW IN THE PIPE AND INVERT.
4. LOW FLOW CHANNEL FLOW SHALL BE DIVERTED FROM ONE PIPE AT A TIME ALLOWING CHANNEL FLOW TO CONTINUE IN THE SECOND PIPE. PIPE RECEIVING INVERT REPAIR SHALL BE KEPT DRY FROM SURFACE FLOW AND GROUNDWATER DURING REPAIRS. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN FOR APPROVAL BY ENGINEER PRIOR TO STARTING WORK.

CMP INVERT REPAIR

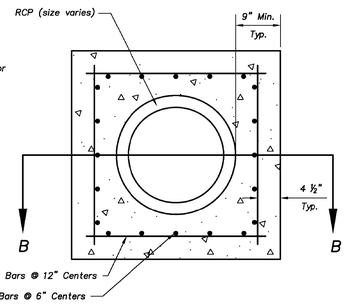
RCP INSTALLATION & INVERT REPAIR DETAILS

Plotted :25-APR-2019 12:59
Drawn By : lrosenbaum
File : 13668R2101.dgn

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|---|---|---|---|---|
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Section B–B




Section A–A

CONCRETE COLLAR DETAIL

Not to Scale

Concrete Collar Notes

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
2. Use KCMMB4K Concrete throughout.
3. Reinforcing steel shall be new billet, minimum Grade 40 as per ASTM A615, and shall be bent cold.
4. All dimensions relative to reinforcing steel are to centerline of bars. 2" clearance shall be provided throughout unless noted otherwise. Tolerance of +/– 1/8" shall be permitted.
5. All lap splices not shown shall be a minimum of 40 bar diameters in length.
6. All dowels shall be accurately placed and securely tied in place prior to placement of bottom slab concrete. Sticking of dowels into fresh or partially hardened concrete will not be acceptable.
8. All reinforcing steel shall be supported on fabricated steel bar supports @ 3'–0" maximum spacing.
9. Do not scale these drawings for dimensions or clearances. Any questions regarding dimensions shall be brought to the attention of the City Engineer prior to construction.

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WEB SITE ADDRESS: http://www.opkansas.org/Doing-Business/Construction-Details

Year 2018 Edition

| REVISIONS: | |
|---|---|
| 02/15/00 | Notes; |
| 05/10/01 | Notes; |
| 07/01/03 | Concrete Mix Designation; |
| | |
| RELATED ORDINANCES: | |
| OPMC Title 15 | |

OVERLAND PARK KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

CONCRETE COLLAR DETAIL

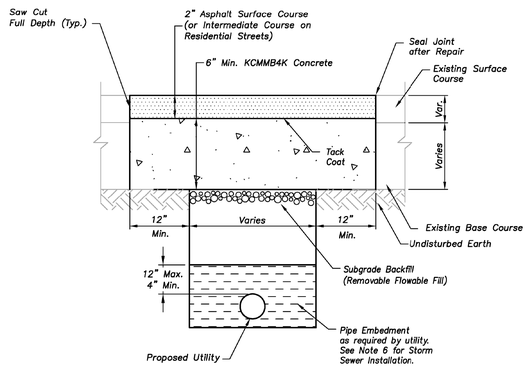
DATE: 09/28/99 SHEET: 29

RCP COLLAR DETAIL

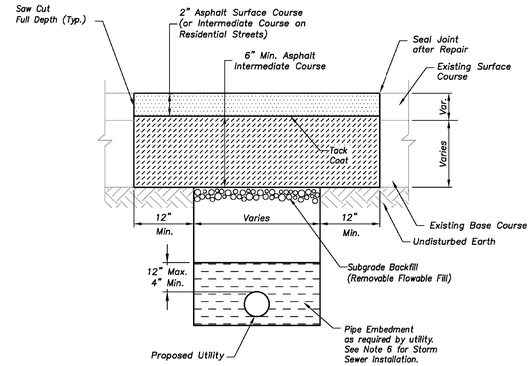
Plotted : 25-APR-2019 13:00
Drawn By : lrosenbaum
File : 13668R2101.dgn

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 116 | 393 |

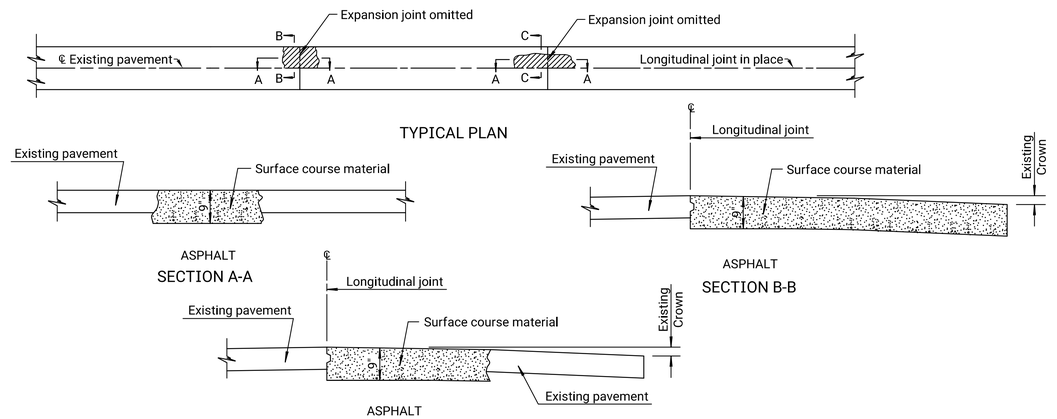



## Asphaltic Concrete Street Repair
## Type I
**(Concrete Base /w Asphaltic Concrete Surface)**

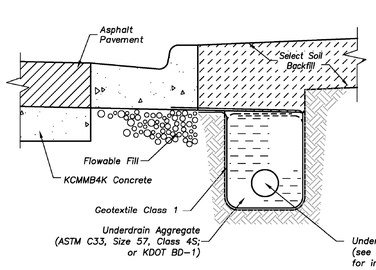



## Asphaltic Concrete Street Repair
## Type II *
**(Full Depth Asphaltic Concrete)**

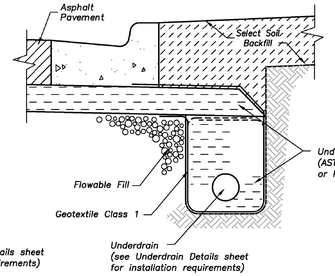
* – Type II Street Repair May be Used
Only if Excavation Width Exceeds 6'



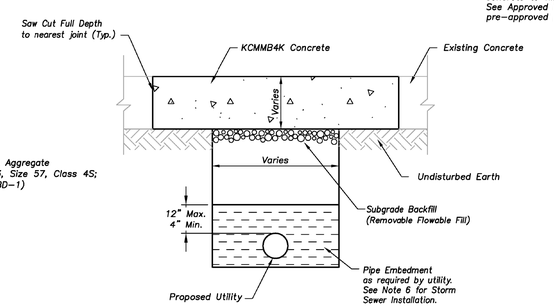

## ASPHALT PAVEMENT PATCHING



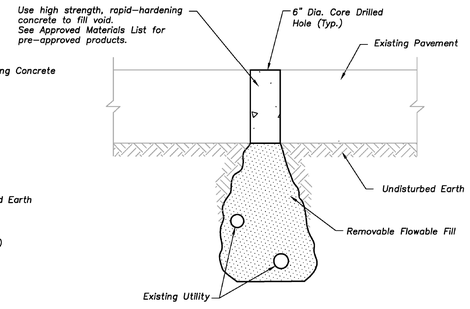

## Pipe Underdrain Repair




## Pipe Underdrain Repair
## with OP Special




## Repair Under Curb,
## Sidewalk or Driveway




## Utility Investigation
## Excavation Repair ***

*** – for repair areas under 1 s.f.

**Street Repair Notes:**

1. Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted. In restoring the Right-of-Way, the Permittee guarantees its work and shall maintain it for 24 months following its completion.
2. The Manual on Uniform Traffic Control Devices, the Overland Park Traffic Control Handbook for Street Maintenance and Construction Operations, and the latest edition of the O.P. Manual of Infrastructure Standards are incorporated except as otherwise noted.
3. Any excavation left open overnight in any roadway shall be securely plated. Plates shall be properly anchored and all edges of the plate shall be ramped with asphalt surface mix to prevent rattling.
4. All KCMMB4K Concrete, removable flowable fill and asphaltic concrete shall conform to OPMC Title 13.
5. When trenching through OP Special Aggregate Base, flowable fill shall be used to backfill the trench to the elevation of the bottom of the OP Special Aggregate Base, then backfilled and compacted to the bottom of pavement with ASTM C33, Size 57, Class 4S aggregate.
6. For Storm Sewer Installation pipe embedment shall be filled no higher then the pipe springline elevation.
7. Permanent pavement markings shall be replaced with like materials within fourteen days after the pavement surface has been replaced, unless otherwise authorized by the City Engineer.

**Repair under curb/sidewalk/driveway notes:**

1. Curbs, sidewalks and driveways shall be sawed full depth, removed and replaced to nearest contraction or expansion joint.
2. If adjacent section of curb, sidewalk or driveway is cracked, chipped or otherwise damaged, it shall also be removed and replaced to nearest joint.
3. All concrete used in this work shall be KCMMB4K.

**Utility Investigation Excavation Repair Notes:**

1. For repair areas greater then 1 s.f. or non-core drilled pavement cut see Street Repair Detail.
2. Non-shrink grout, having a minimum compressive strength of 3000 psi in 24 hours shall conform to ASTM C1107.
3. Contact the City Representative regarding approved bonding agent.

## STREET REPAIR
No Scale

Year 2018 Edition

| REVISIONS: | |
|---|---|
| 02/15/00 | Street Repair Types; Notes; |
| 07/01/03 | Concrete Mix Designation; |
| Jan. 2006 | Miscellaneous; |
| Feb. 2008 | OPMC Reference; |
| RELATED ORDINANCES: | |
| OPMC Title 13 | |

OVERLAND PARK KANSAS
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS
STANDARD DETAILS

STREET REPAIR DETAILS

WEB SITE ADDRESS: http://www.opkansas.org/_bus/pre-construction_resources | DATE: 08/10/98 | SHEET: 21

DRAWING NAME: K:\Details_Specs\Detail_Drawings\details_english\revision_18\st-repair.dwg
WEB SITE ADDRESS: http://www.opkansas.org/Doing-Business/Construction-Details

Plotted :25-APR-2019 13:00
Drawn By: lrosenbaum
File : 13668R2101.dgn

STREET REPAIR
DETAILS

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 117 | 393 |

## REMOVALS (FOR INFORMATION ONLY)

| LOCATION | STATION TO STATION | | SIDE | DESCRIPTION | QUANTITY | UNIT |
|---|---|---|---|---|---|---|
| Roe Boulevard | 101+44 | | LEFT | Curb Inlet Top | 1 | Each |
| Roe Boulevard | 103+49 | | LEFT | Curb Inlet Top | 1 | Each |
| Roe Boulevard | 109+25 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 109+51 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 110+11 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 110+44 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 110+82 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 111+07 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 111+45 | 111+89 | RIGHT | Retaining Wall | 44 | Ln. Ft. |
| Roe Boulevard | 113+02 | | RIGHT | Tree | 1 | Each |
| Roe Boulevard | 115+56 | | RIGHT | Tree | 1 | Each |
| Roe Boulevard | 115+85 | | RIGHT | Tree | 1 | Each |
| Roe Boulevard | 118+96 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 120+90 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 121+30 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 121+50 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 122+52 | | RIGHT | Curb Inlet | 1 | Each |
| Roe Boulevard | 122+66 | | LEFT | Curb Inlet | 1 | Each |
| Roe Boulevard | 123+30 | | LEFT | Curb Inlet | 1 | Each |
| Roe Boulevard | 123+97 | | LEFT | Decorative Pillar | 1 | Each |
| Roe Boulevard | 124+23 | | LEFT | Art Sculpture | 1 | Each |
| Roe Boulevard | 125+70 | 126+20 | RIGHT | Retaining Wall | 50 | Ln. Ft. |
| Roe Boulevard | 127+52 | 128+92 | RIGHT | Retaining Wall | 161 | Ln. Ft. |
| Roe Boulevard | 128+61 | 128+70 | LEFT | Fence | 14 | Ln. Ft. |
| Roe Boulevard | 128+87 | 129+55 | LEFT | Fence | 68 | Ln. Ft. |
| Roe Boulevard | 129+72 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 130+02 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 130+41 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 131+19 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 131+52 | 131+52 | LEFT | Fence | 12 | Ln. Ft. |
| Roe Boulevard | 131+87 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 132+11 | 132+51 | LEFT | Retaining Wall | 40 | Ln. Ft. |
| Roe Boulevard | 132+25 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 132+56 | | LT/RT | Art Sculpture | 1 | Each |
| Roe Boulevard | 132+72 | 133+15 | LEFT | Retaining Wall | 43 | Ln. Ft. |
| Roe Boulevard | 133+31 | 133+74 | LEFT | Retaining Wall | 43 | Ln. Ft. |
| Roe Boulevard | 133+89 | 134+35 | LEFT | Retaining Wall | 46 | Ln. Ft. |
| Roe Boulevard | 133+93 | | RIGHT | Junction Box Top | 1 | Each |
| Roe Boulevard | 134+53 | | RIGHT | Curb Inlet Top | 1 | Each |
| Roe Boulevard | 134+53 | 134+60 | LT/RT | 36" x 24" Squashed CMP | 71 | Ln. Ft. |
| Roe Boulevard | 134+57 | 135+48 | RIGHT | 36" RCP | 91 | Ln. Ft. |
| Roe Boulevard | 134+60 | | LEFT | Curb Inlet | 1 | Each |
| Roe Boulevard | 135+23 | | LEFT | Curb Inlet | 1 | Each |
| Roe Boulevard | 135+51 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 135+51 | | RIGHT | Curb Inlet | 1 | Each |
| Roe Boulevard | 135+51 | 135+72 | LT/RT | 42" x 24" Squashed CMP | 72 | Ln. Ft. |
| Roe Boulevard | 135+72 | | LEFT | Junction Box | 1 | Each |
| Roe Boulevard | 135+74 | 136+73 | LEFT | 36" x 21" Squashed CMP | 100 | Ln. Ft. |
| Roe Boulevard | 135+79 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 136+07 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 136+76 | | LEFT | Junction Box Top | 1 | Each |
| Roe Boulevard | 136+76 | 136+77 | LEFT | 42" x 26" Squashed CMP | 21 | Ln. Ft. |
| Roe Boulevard | 136+77 | | LEFT | Junction Box Top | 1 | Each |
| Roe Boulevard | 139+60 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 140+23 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 140+86 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 141+22 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 146+82 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 146+89 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 148+70 | | LEFT | Curb Inlet Top | 1 | Each |
| Roe Boulevard | 150+13 | | RIGHT | Curb Inlet | 1 | Each |
| Roe Boulevard | 150+17 | 150+18 | LEFT | 24" RCP | 15 | Ln. Ft. |
| Roe Boulevard | 150+18 | | LEFT | Curb Inlet | 1 | Each |
| Roe Boulevard | 150+54 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 150+86 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 151+78 | | RIGHT | Curb Inlet | 1 | Each |
| Roe Boulevard | 151+78 | 151+81 | RIGHT | 18" CMP | 7 | Ln. Ft. |
| Roe Boulevard | 151+81 | | RIGHT | Junction Box Top | 1 | Each |
| Roe Boulevard | 151+83 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 152+04 | | LEFT | Curb Inlet | 1 | Each |
| Roe Boulevard | 153+32 | | RIGHT | Curb Inlet | 1 | Each |
| Roe Boulevard | 154+05 | | LEFT | Manhole Top | 1 | Each |
| Roe Boulevard | 154+52 | | LEFT | Curb Inlet Top | 1 | Each |
| Roe Boulevard | 154+84 | | RIGHT | Curb Inlet | 1 | Each |
| Roe Boulevard | 156+46 | | RIGHT | Curb Inlet | 1 | Each |
| Roe Boulevard | 156+46 | | RIGHT | 30" RCP | 3 | Ln. Ft. |
| Roe Boulevard | 156+46 | 156+47 | RIGHT | 30" RCP | 5 | Ln. Ft. |
| Roe Boulevard | 156+54 | | LEFT | Curb Inlet Top | 1 | Each |
| Roe Boulevard | 156+54 | 156+54 | LEFT | 30" RCP | 10 | Ln. Ft. |
| Roe Boulevard | 157+35 | | LEFT | Curb Inlet Top | 1 | Each |
| Roe Boulevard | 158+46 | | LEFT | Manhole Top | 1 | Each |
| Roe Boulevard | 158+70 | | LEFT | Junction Box | 1 | Each |
| Roe Boulevard | 158+71 | 158+77 | LEFT | 18" RCP | 7 | Ln. Ft. |
| Roe Boulevard | 158+77 | | LEFT | Curb Inlet | 1 | Each |
| Roe Boulevard | 164+11 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 164+89 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 165+29 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 166+09 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 166+63 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 167+17 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 167+40 | | RIGHT | Tree | 1 | Each |
| Roe Boulevard | 168+03 | | LEFT | Tree | 1 | Each |

## REMOVALS CONT. (FOR INFORMATION ONLY)

| LOCATION | STATION TO STATION | | SIDE | DESCRIPTION | QUANTITY | UNIT |
|---|---|---|---|---|---|---|
| Roe Boulevard | 168+59 | | LEFT | Tree | 1 | Each |
| Roe Boulevard | 169+20 | | RIGHT | Tree | 1 | Each |
| Roe Boulevard | 169+47 | | LT/RT | Landscape Monument | 1 | Each |
| W 57th Street | 1+13 | | LEFT | Tree | 2 | Each |
| W 57th Street | 1+27 | | LEFT | Tree | 1 | Each |
| W 57th Street | 1+33 | | LEFT | Tree | 1 | Each |
| W 57th Street | 1+36 | | RIGHT | Curb Inlet Top | 1 | Each |
| Linden Street | 5+57 | | LEFT | Curb Inlet Top | 1 | Each |
| Linden Street | 6+07 | | LEFT | Curb Inlet Top | 1 | Each |
| Rosewood Drive | 36+13 | | RIGHT | 15" RCP | 16 | Ln. Ft. |
| Rosewood Drive | 36+25 | | RIGHT | Junction Box | 1 | Each |
| Rosewood Drive | 36+26 | 36+61 | RIGHT | 15" RCP | 52 | Ln. Ft. |
| Rosewood Drive | 36+63 | | RIGHT | Curb Inlet | 1 | Each |
| W 50th Terrace | 66+33 | | LEFT | Curb Inlet | 1 | Each |
| W 50th Terrace | 66+33 | 66+35 | LEFT | 15" RCP | 11 | Ln. Ft. |
| W 50th Terrace | 66+35 | | LEFT | Junction Box | 1 | Each |
| W 50th Terrace | 66+35 | 66+36 | LT/RT | 18" RCP | 43 | Ln. Ft. |
| W 50th Terrace | 66+36 | | RIGHT | Curb Inlet | 1 | Each |
| W 50th Terrace | 66+37 | 66+55 | LEFT | 18" RCP | 19 | Ln. Ft. |
| W 50th Terrace | 66+57 | | LEFT | Junction Box | 1 | Each |
| W 50th Terrace | 66+57 | | LT/RT | 24" RCP | 47 | Ln. Ft. |
| W 50th Terrace | 66+58 | | LEFT | 24" RCP | 20 | Ln. Ft. |
| Roe Lane | 71+69 | | LEFT | Junction Box Top | 1 | Each |
| Roe Lane | 71+44 | 71+99 | RIGHT | Handrail | 70 | Ln. Ft. |
| Skyline Drive | 75+29 | 76+17 | LEFT | 21" CMP | 88 | Ln. Ft. |

## SIDEWALK RAMP

| STATION TO STATION | | SIDE | SIDEWALK RAMP (SQ. YD.) |
|---|---|---|---|
| 104+32.32 | 104+44.30 | LEFT | 9.3 |
| 104+73.72 | 104+85.69 | LEFT | 9.3 |
| 104+75.42 | 104+98.99 | RIGHT | 13.4 |
| 105+82.65 | 106+03.55 | LEFT | 24.1 |
| 106+87.62 | 107+21.83 | LEFT | 35.2 |
| 107+43.55 | 107+55.73 | LEFT | 6.6 |
| 107+54.55 | 107+67.44 | LEFT | 8.8 |
| 110+11.27 | 110+32.57 | RIGHT | 12.9 |
| 110+64.51 | 110+85.62 | RIGHT | 12.8 |
| 113+60.01 | 113+89.46 | LEFT | 23.8 |
| 114+25.85 | 114+60.64 | LEFT | 27.4 |
| 116+47.47 | 116+87.27 | RIGHT | 31.8 |
| 116+53.47 | 116+84.89 | LEFT | 35.1 |
| 117+28.49 | 117+53.19 | LEFT | 25.5 |
| 117+29.36 | 117+52.31 | RIGHT | 20.5 |
| 119+95.66 | 120+28.48 | RIGHT | 19.9 |
| 120+76.73 | 121+09.54 | RIGHT | 19.9 |
| 124+33.18 | 124+53.53 | RIGHT | 16.7 |
| 124+94.99 | 125+21.62 | RIGHT | 15.9 |
| 126+04.79 | 126+15.79 | RIGHT | 7.0 |
| 126+30.35 | 126+48.38 | LEFT | 25.4 |
| 126+57.43 | 126+79.91 | LEFT | 16.9 |
| 126+85.59 | 127+12.21 | RIGHT | 16.1 |
| 127+27.28 | 127+51.99 | LEFT | 19.0 |
| 127+49.21 | 127+66.26 | RIGHT | 13.0 |
| 133+19.84 | 133+44.49 | RIGHT | 14.4 |
| 133+93.29 | 134+12.92 | RIGHT | 15.1 |
| 135+53.73 | 135+74.73 | RIGHT | 10.4 |
| 136+26.13 | 136+39.92 | RIGHT | 7.0 |
| 136+35.91 | 136+51.88 | LEFT | 10.6 |
| 137+03.36 | 137+19.03 | LEFT | 10.9 |
| 138+44.34 | 138+71.87 | RIGHT | 15.8 |
| 138+68.19 | 138+77.86 | LEFT | 7.7 |
| 139+09.65 | 139+19.79 | LEFT | 7.8 |
| 139+16.40 | 139+44.02 | RIGHT | 16.0 |
| 141+89.60 | 142+17.89 | LEFT | 29.8 |
| 141+91.08 | 142+19.20 | RIGHT | 25.2 |
| 142+66.88 | 143+02.55 | RIGHT | 26.9 |
| 142+77.49 | 143+02.60 | LEFT | 26.2 |
| 144+59.17 | 144+65.96 | RIGHT | 4.2 |
| 145+10.95 | 145+26.56 | RIGHT | 6.8 |
| 145+75.41 | 146+04.35 | LEFT | 40.3 |
| 145+79.56 | 146+20.28 | RIGHT | 35.5 |
| 146+42.18 | 146+50.26 | RIGHT | 3.9 |
| 146+70.13 | 147+08.66 | LEFT | 48.1 |
| 146+79.25 | 146+88.93 | RIGHT | 5.5 |
| 146+88.60 | 146+93.41 | RIGHT | 5.2 |
| 146+88.60 | 146+99.74 | RIGHT | 5.2 |
| 146+88.61 | 146+93.61 | RIGHT | 4.7 |
| 146+88.61 | 146+93.67 | LT/RT | 4.7 |
| 147+13.93 | 147+36.73 | RIGHT | 17.6 |
| 151+82.99 | 152+08.60 | RIGHT | 19.4 |
| 152+05.04 | 152+32.86 | LEFT | 31.0 |
| 152+19.58 | 152+28.73 | LEFT | 4.7 |
| 152+34.34 | 152+50.65 | LEFT | 11.9 |
| | | | |
| SUBTOTAL | | | 938.8 |

## SIDEWALK RAMP CONT.

| STATION TO STATION | | SIDE | SIDEWALK RAMP (SQ. YD.) |
|---|---|---|---|
| 152+42.38 | 152+58.69 | RIGHT | 8.9 |
| 152+50.86 | 152+64.42 | LEFT | 10.9 |
| 152+56.61 | 152+77.19 | RIGHT | 10.0 |
| 152+64.39 | 152+80.09 | LEFT | 11.8 |
| 152+65.95 | 152+73.04 | RIGHT | 7.5 |
| 152+91.70 | 153+12.76 | RIGHT | 21.7 |
| 152+98.26 | 153+32.13 | LEFT | 28.4 |
| 156+54.60 | 156+80.19 | RIGHT | 25.2 |
| 156+90.93 | 157+13.25 | RIGHT | 20.3 |
| 157+13.25 | 157+27.34 | LEFT | 15.4 |
| 157+55.47 | 157+96.06 | RIGHT | 5.3 |
| 157+61.60 | 157+27.34 | RIGHT | 9.9 |
| 157+75.82 | 157+96.06 | RIGHT | 24.1 |
| 157+94.23 | 157+71.88 | RIGHT | 6.3 |
| 157+99.71 | 157+95.26 | LEFT | 24.6 |
| 158+20.71 | 158+28.02 | RIGHT | 17.8 |
| 158+28.02 | 158+19.49 | RIGHT | 15.1 |
| 158+36.03 | 158+32.11 | LEFT | 7.5 |
| 158+69.87 | 158+37.21 | LEFT | 6.1 |
| 160+40.04 | 158+60.53 | LEFT | 19.2 |
| 158+69.87 | 158+86.44 | LEFT | 21.3 |
| 160+40.04 | 160+54.29 | RIGHT | 6.6 |
| | | | |
| TOTAL | | | 1,262.7 |

## SIDEWALK

| STATION TO STATION | | SIDE | SIDEWALK CONSTRUCTION (4") (KCMMB4K) (SQ. YD.) |
|---|---|---|---|
| 101+08.30 | 104+32.32 | LEFT | 289.4 |
| 104+85.69 | 105+87.88 | LEFT | 92.9 |
| 104+98.99 | 105+29.35 | RIGHT | 16.9 |
| 105+39.31 | 105+90.94 | RIGHT | 28.7 |
| 105+97.17 | 106+19.82 | LEFT | 20.1 |
| 106+04.89 | 106+49.30 | RIGHT | 24.7 |
| 106+59.30 | 106+71.02 | RIGHT | 6.5 |
| 106+81.02 | 107+12.95 | RIGHT | 17.7 |
| 106+95.95 | 107+57.48 | LEFT | 79.7 |
| 107+16.95 | 107+90.23 | LEFT | 61.6 |
| 107+21.45 | 107+69.94 | RIGHT | 26.9 |
| 107+84.44 | 108+25.52 | RIGHT | 22.8 |
| 108+06.34 | 108+85.79 | LEFT | 69.0 |
| 108+36.52 | 108+92.33 | RIGHT | 31.0 |
| 109+01.79 | 109+83.66 | LEFT | 72.8 |
| 109+04.33 | 109+46.45 | RIGHT | 23.4 |
| 109+62.45 | 110+11.27 | RIGHT | 27.1 |
| 109+94.43 | 110+55.54 | LEFT | 54.3 |
| 110+65.73 | 111+15.27 | LEFT | 44.0 |
| 110+85.62 | 111+34.10 | RIGHT | 26.9 |
| 111+23.91 | 111+74.95 | LEFT | 45.4 |
| 111+42.10 | 111+47.05 | RIGHT | 2.7 |
| 111+89.05 | 111+91.69 | RIGHT | 0.5 |
| 111+91.77 | 112+32.76 | LEFT | 36.4 |
| 112+08.19 | 112+13.08 | RIGHT | 1.4 |
| 112+47.01 | 112+52.01 | RIGHT | 1.4 |
| 112+50.92 | 113+07.39 | LEFT | 48.6 |
| 112+68.51 | 113+13.68 | RIGHT | 26.1 |
| 113+21.82 | 113+60.01 | LEFT | 32.3 |
| 113+31.68 | 113+45.05 | RIGHT | 4.9 |
| 113+62.55 | 113+82.37 | RIGHT | 9.2 |
| 114+08.37 | 114+57.61 | RIGHT | 28.8 |
| 114+60.64 | 115+32.04 | LEFT | 60.8 |
| 114+75.61 | 115+31.25 | RIGHT | 33.1 |
| 115+40.41 | 115+52.45 | LEFT | 5.3 |
| 115+48.25 | 115+92.07 | RIGHT | 25.2 |
| 115+60.36 | 116+54.47 | LEFT | 84.0 |
| 116+09.57 | 116+22.55 | RIGHT | 4.7 |
| 116+31.05 | 116+47.47 | RIGHT | 10.1 |
| 116+54.47 | 116+60.47 | LEFT | 3.6 |
| 117+24.67 | 117+34.74 | LEFT | 13.0 |
| 117+25.91 | 117+34.05 | RIGHT | 22.6 |
| 117+49.47 | 118+48.07 | LEFT | 83.4 |
| 117+49.62 | 117+79.45 | RIGHT | 16.9 |
| 117+96.45 | 118+55.83 | RIGHT | 35.6 |
| 118+62.71 | 119+07.44 | LEFT | 34.4 |
| 118+71.83 | 119+95.66 | RIGHT | 80.6 |
| 119+20.14 | 119+57.49 | LEFT | 27.9 |
| 119+92.64 | 119+98.64 | LEFT | 2.7 |
| 120+30.64 | 120+36.46 | LEFT | 2.5 |
| 120+45.99 | 121+07.34 | LEFT | 49.2 |
| 121+09.54 | 121+50.24 | RIGHT | 25.1 |
| 121+30.63 | 121+83.48 | LEFT | 41.6 |
| 121+58.74 | 122+69.38 | RIGHT | 69.8 |
| 121+97.42 | 122+39.03 | LEFT | 31.7 |
| 122+54.94 | 123+97.92 | LEFT | 121.8 |
| 122+77.88 | 122+98.17 | RIGHT | 9.5 |
| 123+11.03 | 123+41.79 | RIGHT | 17.1 |
| 123+57.24 | 124+33.65 | RIGHT | 41.2 |
| 124+18.71 | 124+68.41 | LEFT | 38.9 |
| 124+45.26 | 124+56.67 | RIGHT | 27.6 |
| 124+79.10 | 125+49.57 | LEFT | 59.7 |
| 125+21.62 | 125+73.35 | RIGHT | 28.7 |
| 125+66.14 | 126+30.46 | LEFT | 56.9 |
| 126+21.79 | 126+22.29 | RIGHT | 0.3 |
| 126+30.29 | 126+85.59 | RIGHT | 30.7 |
| 126+36.78 | 126+85.60 | LEFT | 50.7 |
| 126+42.87 | 126+58.41 | LEFT | 18.3 |
| 126+87.74 | 127+34.55 | RIGHT | 44.8 |
| 127+47.02 | 127+60.26 | RIGHT | 15.1 |
| 127+51.01 | 128+73.45 | LEFT | 108.4 |
| 127+66.26 | 128+93.31 | RIGHT | 70.6 |
| 128+84.62 | 129+57.04 | LEFT | 64.4 |
| 129+11.31 | 129+18.40 | RIGHT | 3.9 |
| 129+33.40 | 130+06.05 | LEFT | 40.4 |
| 129+68.46 | 130+16.69 | LEFT | 42.9 |
| 130+23.55 | 130+81.56 | RIGHT | 32.2 |
| 130+24.44 | 130+70.97 | LEFT | 41.4 |
| 130+88.38 | 131+31.73 | LEFT | 38.5 |
| 131+02.56 | 131+37.86 | RIGHT | 19.6 |
| 131+48.52 | 131+93.53 | LEFT | 40.0 |
| 131+48.86 | 131+80.18 | RIGHT | 17.4 |
| 131+92.18 | 132+23.92 | RIGHT | 17.6 |
| 132+10.92 | 132+12.07 | LEFT | 1.0 |
| 132+35.92 | 132+61.40 | RIGHT | 14.2 |
| 132+46.07 | 132+55.18 | LEFT | 8.1 |
| 132+70.74 | 133+15.50 | LEFT | 39.8 |
| 132+81.40 | 133+19.86 | RIGHT | 21.4 |
| 133+28.98 | 133+76.95 | LEFT | 42.6 |
| | | | |
| SUBTOTAL | | | 3,263.6 |

## SIDEWALK CONT.

| STATION TO STATION | | SIDE | SIDEWALK CONSTRUCTION (4") (KCMMB4K) (SQ. YD.) |
|---|---|---|---|
| 133+85.14 | 133+88.64 | LEFT | 3.1 |
| 133+97.64 | 134+03.34 | RIGHT | 1.6 |
| 134+12.92 | 135+53.73 | RIGHT | 78.6 |
| 134+34.63 | 134+37.69 | LEFT | 2.7 |
| 134+45.39 | 134+98.10 | LEFT | 46.8 |
| 135+07.60 | 135+53.38 | LEFT | 40.7 |
| 135+69.26 | 136+15.31 | LEFT | 40.9 |
| 136+26.30 | 136+35.91 | LEFT | 8.5 |
| 136+36.71 | 138+44.34 | RIGHT | 115.0 |
| 137+19.03 | 138+68.19 | LEFT | 132.6 |
| 139+19.79 | 141+89.74 | LEFT | 240.5 |
| 139+44.02 | 141+92.22 | RIGHT | 137.3 |
| 141+98.53 | 142+06.81 | LEFT | 9.9 |
| 142+12.43 | 142+19.74 | RIGHT | 14.3 |
| 142+63.56 | 142+72.12 | RIGHT | 17.0 |
| 143+01.70 | 145+75.41 | LEFT | 242.9 |
| 143+02.14 | 144+59.17 | RIGHT | 87.2 |
| 145+26.56 | 145+80.59 | RIGHT | 29.8 |
| 145+86.88 | 146+04.86 | LEFT | 71.0 |
| 146+13.93 | 147+49.20 | RIGHT | 145.8 |
| 146+44.41 | 146+73.98 | LEFT | 76.0 |
| 147+00.47 | 147+67.27 | RIGHT | 86.5 |
| 147+03.82 | 152+05.08 | LEFT | 427.4 |
| 147+36.63 | 151+82.99 | RIGHT | 254.8 |
| 151+99.33 | 152+09.11 | RIGHT | 4.7 |
| 152+25.42 | 152+56.96 | LEFT | 101.6 |
| 152+27.27 | 152+36.25 | LEFT | 4.3 |
| 152+68.04 | 152+95.31 | RIGHT | 46.2 |
| 153+12.76 | 156+56.49 | RIGHT | 199.3 |
| 153+32.14 | 157+81.24 | LEFT | 398.1 |
| 156+74.97 | 156+81.75 | RIGHT | 2.7 |
| 157+20.22 | 158+02.38 | RIGHT | 64.5 |
| 157+87.88 | 158+03.04 | LEFT | 13.9 |
| 158+17.28 | 160+40.04 | RIGHT | 124.6 |
| 158+72.62 | 158+84.71 | LEFT | 42.1 |
| | | | |
| TOTAL | | | 6,576.5 |

## SUMMARY OF INTEGRAL SIDEWALK RETAINING WALL QUANTITIES

| WALL | STATION TO STATION | | SIDE | CONCRETE (GRADE 4.0) (KCMMB4K) (CU. YD.) | REINFORCING STEEL ✳ (GRADE 60) (LBS.) |
|---|---|---|---|---|---|
| 1 | 111+47.05 | 111+89.05 | RIGHT | 5.46 | 411 |
| 2 | 112+12.93 | 112+47.01 | RIGHT | 5.12 | 338 |
| 3 | 119+98.64 | 120+30.64 | LEFT | 5.87 | 442 |
| 4 | 125+73.35 | 126+15.79 | RIGHT | 5.75 | 427 |
| 5 | 132+12.07 | 132+46.07 | LEFT | 6.29 | 473 |
| 6 | 133+88.64 | 134+34.64 | LEFT | 8.45 | 633 |
| 7 | 146+50.26 | 147+10.63 | RIGHT | 11.87 | 2,057 |
| | | | | | |
| TOTAL | | | | 48.81 | 4,781 |

✳ Bar weights based on out-to-out dimensions.

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| - | ____ | _____ | ___ | ___ |
| 2 | 1-14-08 | Rem. Drainage Structure summary | S.W.K. | J.O.B. |
| 1 | 1-9-91 | Detailed on CADD _____ | R.J.S | J.O.B. |

KANSAS DEPARTMENT OF TRANSPORTATION

## SUMMARY OF QUANTITIES

RD050

| | | | |
|---|---|---|---|
| FHWA APPROVAL 5-28-08 | | APP'D. James O. Brewer | |
| DESIGNED ___ | DETAILED ___ | QUANTITIES ___ | TRACED B.N.B. |
| DESIGN CK. ___ | DETAIL CK. ___ | QUAN.CK. ___ | TRACE CK. S.W.K. |

Plotted :25-APR-2019 13:00

Drawn By : lrosenbaum
File : 13668R0401.dgn

## DRIVEWAYS AND ENTRANCES

| STATION TO STATION | | SIDE | CONCRETE PAVEMENT (6" UNIFORM) (KCMMB4K) (PLAIN) (SQ. YD.) | PLANT MIX ASPHALT MIXTURE - OVERLAND PARK (SURFACE) (TON) | PLANT MIX ASPHALT MIXTURE - OVERLAND PARK (BASE) (TON) |
|---|---|---|---|---|---|
| 104+37.54 | 104+80.47 | LEFT | 60.6 | | |
| 105+24.38 | 105+44.39 | RIGHT | 22.1 | | |
| 105+86.00 | 106+10.00 | RIGHT | 30.3 | | |
| 106+44.30 | 106+64.30 | RIGHT | 26.2 | | |
| 106+66.02 | 106+86.02 | RIGHT | 18.8 | | |
| 107+07.95 | 107+26.45 | RIGHT | 23.0 | | |
| 107+64.94 | 107+89.44 | RIGHT | 31.5 | | |
| 107+85.12 | 108+11.22 | LEFT | 26.6 | | |
| 108+20.52 | 108+41.52 | RIGHT | 19.6 | | |
| 108+80.79 | 109+06.79 | LEFT | 53.8 | | |
| 108+87.33 | 109+09.33 | RIGHT | 25.6 | | |
| 109+41.45 | 109+67.45 | RIGHT | 33.8 | | |
| 109+78.66 | 110+01.63 | LEFT | 48.1 | | |
| 110+50.54 | 110+70.73 | LEFT | 38.0 | | |
| 111+10.27 | 111+32.72 | LEFT | 38.9 | | |
| 111+29.10 | 111+47.10 | RIGHT | 18.6 | | |
| 111+69.95 | 111+96.77 | LEFT | 26.5 | | |
| 111+74.95 | 111+91.77 | LEFT | | 1.1 | 2.2 |
| 111+85.69 | 112+14.19 | RIGHT | 54.6 | | |
| 112+27.76 | 112+55.92 | LEFT | 28.5 | | |
| 112+32.76 | 112+50.92 | LEFT | | 3 | 6 |
| 112+46.01 | 112+74.51 | RIGHT | 53.2 | | |
| 113+02.32 | 113+26.72 | LEFT | 50.8 | | |
| 113+07.68 | 113+37.68 | RIGHT | 18.0 | | |
| 113+13.68 | 113+31.68 | RIGHT | | 2.1 | 4.2 |
| 113+39.05 | 114+14.37 | RIGHT | 128.4 | | |
| 114+51.61 | 114+81.61 | RIGHT | 59.4 | | |
| 115+25.25 | 115+54.25 | RIGHT | 60.3 | | |
| 115+26.04 | 115+46.45 | LEFT | 23.0 | | |
| 115+46.45 | 115+66.36 | LEFT | 24.0 | | |
| 115+86.07 | 116+15.57 | RIGHT | 33.5 | | |
| 116+16.55 | 116+37.05 | RIGHT | 29.6 | | |
| 116+74.68 | 116+92.06 | RIGHT | 21.9 | | |
| 117+73.45 | 118+02.45 | RIGHT | 47.4 | | |
| 118+22.42 | 118+48.07 | LEFT | 48.5 | | |
| 118+42.07 | 118+68.71 | LEFT | 78.3 | | |
| 118+49.83 | 118+77.83 | RIGHT | 40.1 | | |
| 119+01.44 | 119+26.14 | LEFT | 76.1 | | |
| 119+51.49 | 119+79.78 | LEFT | 97.1 | | |
| 119+79.78 | 119+98.64 | LEFT | 15.0 | | |
| 119+84.21 | 120+45.99 | LEFT | | 11.1 | 22.2 |
| 120+16.33 | 120+36.56 | RIGHT | 23.6 | | |
| 120+30.46 | 120+51.99 | LEFT | 14.9 | | |
| 120+63.43 | 120+74.91 | RIGHT | 23.8 | | |
| 121+01.34 | 121+36.63 | LEFT | 36.4 | | |
| 121+44.24 | 121+64.74 | RIGHT | 21.3 | | |
| 121+77.48 | 122+03.42 | LEFT | 19.3 | | |
| 121+83.48 | 121+97.42 | LEFT | | 1.1 | 2.2 |
| 122+33.03 | 122+60.92 | LEFT | 38.0 | | |
| 122+63.38 | 122+83.88 | RIGHT | 27.5 | | |
| 122+92.19 | 123+16.24 | RIGHT | 27.0 | | |
| 123+35.79 | 123+63.48 | RIGHT | 32.7 | | |
| 123+91.92 | 124+24.69 | LEFT | 63.4 | | |
| 124+62.41 | 124+85.08 | LEFT | 26.7 | | |
| 125+42.29 | 125+72.56 | LEFT | 71.7 | | |
| 126+02.21 | 126+31.79 | LEFT | 94.8 | | |
| 126+17.29 | 126+35.29 | RIGHT | 19.5 | | |
| 126+73.85 | 127+01.50 | LEFT | 32.5 | | |
| 127+22.67 | 127+88.93 | LEFT | 64.1 | | |
| 127+33.39 | 127+47.67 | LEFT | 10.2 | | |
| 128+68.45 | 128+89.62 | LEFT | 22.0 | | |
| 128+73.47 | 128+87.87 | LEFT | | 1.6 | 3.3 |
| 128+88.31 | 129+14.85 | RIGHT | 22.7 | | |
| 128+93.31 | 129+11.31 | RIGHT | | 2.7 | 5.4 |
| 129+14.85 | 129+38.40 | RIGHT | 32.3 | | |
| 129+52.04 | 129+73.46 | LEFT | 24.1 | | |
| 130+01.05 | 130+28.55 | RIGHT | 25.7 | | |
| 130+11.69 | 130+29.44 | LEFT | 16.3 | | |
| 130+16.69 | 130+24.44 | LEFT | | 0.9 | 1.9 |
| 130+65.97 | 130+93.38 | LEFT | 33.3 | | |
| 130+76.56 | 131+07.56 | RIGHT | 31.1 | | |
| 131+26.73 | 131+53.52 | LEFT | 40.7 | | |
| 131+32.86 | 131+53.86 | RIGHT | 23.5 | | |
| 131+75.18 | 131+97.18 | RIGHT | 35.3 | | |
| 131+88.53 | 132+15.92 | LEFT | 47.6 | | |
| 132+18.92 | 132+40.92 | RIGHT | 24.6 | | |
| 132+50.18 | 132+75.74 | LEFT | 52.8 | | |
| 132+56.40 | 132+86.40 | RIGHT | 45.0 | | |
| 133+10.50 | 133+33.86 | LEFT | 45.0 | | |
| 133+71.77 | 133+90.14 | LEFT | 20.8 | | |
| 134+32.69 | 134+50.39 | LEFT | 20.8 | | |
| 134+93.10 | 135+12.60 | LEFT | 15.9 | | |
| 134+98.10 | 135+07.60 | LEFT | | 0.6 | 1.3 |
| 135+48.38 | 135+74.26 | LEFT | 39.9 | | |
| 136+10.31 | 136+30.66 | LEFT | 16.8 | | |
| 136+39.26 | 137+16.22 | LEFT | 90.5 | | |
| 138+72.64 | 139+15.35 | LEFT | 48.8 | | |
| 144+65.97 | 145+18.63 | RIGHT | 82.4 | | |
| 160+43.51 | 161+12.30 | RIGHT | 148.4 | | |
| | | | | | |
| TOTAL | | | 3,183.4 | 24.2 | 48.7 |

## CURB AND GUTTER

| STATION TO STATION | | SIDE | CURB AND GUTTER, COMBINED (KCMMB4K) (SPECIAL) (LN. FT.) | CURB , PROTECTION (KCMMB4K) (SPECIAL) (LN. FT.) |
|---|---|---|---|---|
| 100+98.32 | 104+21.12 | RIGHT | 324.3 | |
| 100+98.99 | 104+45.01 | LEFT | 358.8 | |
| 101+08.24 | 104+11.31 | LEFT | | 304.0 |
| 101+08.24 | 104+11.31 | LT/RT | | 304.0 |
| 104+37.54 | 104+80.47 | LEFT | 42.9 | |
| 104+71.39 | 110+36.42 | RIGHT | 590.8 | |
| 104+73.01 | 106+19.82 | LEFT | 183.5 | |
| 106+06.31 | 106+52.17 | LEFT | 59.0 | |
| 106+09.56 | 106+52.17 | LEFT | | 46.8 |
| 106+14.75 | 106+54.31 | LEFT | | 43.1 |
| 106+14.75 | 106+54.31 | LEFT | 87.5 | |
| 106+83.30 | 113+95.08 | LEFT | 782.8 | |
| 106+84.19 | 106+91.52 | LEFT | 19.6 | |
| 107+18.48 | 107+31.76 | LEFT | 15.7 | |
| 107+36.67 | 116+53.64 | LT/RT | | 1,838.1 |
| 107+40.15 | 107+55.39 | LEFT | 17.0 | |
| 107+58.24 | 107+63.32 | LEFT | 6.0 | |
| 110+60.87 | 116+92.57 | RIGHT | 707.0 | |
| 114+19.64 | 116+88.77 | LEFT | 347.4 | |
| 117+24.23 | 127+47.67 | LEFT | 1,167.7 | |
| 117+25.91 | 120+36.56 | RIGHT | 407.0 | |
| 117+54.48 | 124+25.17 | RIGHT | | 670.7 |
| 117+54.48 | 124+25.17 | LT/RT | | 671.2 |
| 120+63.29 | 124+56.69 | RIGHT | 478.1 | |
| 124+83.90 | 127+22.31 | RIGHT | 333.9 | |
| 125+22.28 | 126+35.88 | LEFT | | 241.7 |
| 125+82.81 | 126+10.12 | RIGHT | | 27.3 |
| 126+16.45 | 126+65.18 | LT/RT | | 111.8 |
| 127+20.50 | 136+58.80 | LEFT | 1,090.2 | |
| 127+44.03 | 133+49.43 | RIGHT | 693.3 | |
| 127+67.69 | 133+08.24 | RIGHT | | 540.6 |
| 127+67.69 | 133+08.24 | LEFT | | 540.6 |
| 133+79.43 | 135+82.86 | RIGHT | 244.9 | |
| 135+64.88 | 136+35.60 | RIGHT | 71.2 | |
| 136+26.05 | 138+78.54 | RIGHT | 290.9 | |
| 136+39.26 | 137+16.22 | LEFT | 77.0 | |
| 137+03.36 | 138+77.96 | LEFT | 366.2 | |
| 138+48.29 | 138+52.79 | LEFT | 12.0 | |
| 138+72.64 | 139+15.35 | LEFT | 42.7 | |
| 139+09.73 | 142+21.88 | RIGHT | 360.6 | |
| 139+10.64 | 142+24.41 | LEFT | 402.3 | |
| 142+43.34 | 142+53.60 | LEFT | 37.2 | |
| 142+60.85 | 144+59.40 | RIGHT | 265.2 | |
| 142+72.03 | 146+05.21 | LEFT | 492.2 | |
| 143+11.20 | 145+71.60 | LT/RT | | 261.4 |
| 143+11.20 | 145+71.60 | LT/RT | | 261.4 |
| 144+65.97 | 145+18.63 | RIGHT | 52.7 | |
| 144+98.92 | 147+49.20 | RIGHT | 350.8 | |
| 146+44.41 | 152+58.91 | LEFT | 921.9 | |
| 146+79.07 | 146+88.13 | RIGHT | | 35.0 |
| 146+80.43 | 146+94.56 | RIGHT | | 58.6 |
| 146+93.83 | 147+03.83 | RIGHT | | 32.9 |
| 146+94.05 | 152+29.53 | RIGHT | | 1,086.8 |
| 147+16.16 | 152+21.02 | RIGHT | 764.9 | |
| 152+36.53 | 152+72.33 | RIGHT | | 231.5 |
| 152+43.47 | 152+75.02 | RIGHT | | 80.3 |
| 152+48.89 | 152+84.02 | LEFT | 62.5 | |
| 152+52.81 | 152+78.01 | LEFT | | 25.2 |
| 152+55.40 | 152+73.17 | LEFT | | 17.8 |
| 152+55.40 | 152+94.63 | LEFT | 365.0 | |
| 152+65.95 | 156+83.51 | RIGHT | 595.8 | |
| 152+69.05 | 156+97.63 | LEFT | | 428.3 |
| 152+71.32 | 156+97.63 | LT/RT | | 428.9 |
| 152+90.83 | 158+50.85 | LEFT | 804.7 | |
| 156+79.31 | 157+09.37 | RIGHT | | 73.7 |
| 156+96.60 | 157+22.45 | RIGHT | | 83.6 |
| 157+18.70 | 157+29.20 | RIGHT | | 28.7 |
| 157+20.22 | 160+64.86 | RIGHT | 400.7 | |
| 157+44.58 | 157+96.77 | RIGHT | | 136.4 |
| 157+60.36 | 158+27.36 | RIGHT | | 157.5 |
| 158+01.21 | 128+28.94 | RIGHT | | 62.4 |
| 158+18.82 | 158+27.36 | LEFT | | 25.7 |
| 158+25.60 | 158+53.92 | LEFT | | 85.3 |
| 158+36.70 | 158+40.74 | RIGHT | | 17.2 |
| 158+36.70 | 158+66.38 | LEFT | | 69.3 |
| 158+58.59 | 159+50.53 | LEFT | | 91.9 |
| 158+58.59 | 159+50.53 | RIGHT | | 91.9 |
| 158+65.13 | 159+50.53 | LEFT | 221.4 | |
| 160+43.51 | 161+12.28 | RIGHT | 68.8 | |
| 160+92.82 | 161+25.98 | RIGHT | 55.0 | |
| | | | | |
| TOTAL | | | 15,039.1 | 9,211.6 |

## STAMPED CONCRETE

| STATION TO STATION | | SIDE | CONCRETE (GRADE 3.0) (KCMMB4K) (CU. YD.) |
|---|---|---|---|
| 101+08.24 | 104+11.31 | LEFT | 15.00 |
| 104+84.22 | 105+29.35 | RIGHT | 1.08 |
| 106+06.31 | 106+52.17 | LEFT | 2.32 |
| 106+95.88 | 107+25.02 | LEFT | 1.21 |
| 107+41.05 | 107+85.97 | LEFT | 0.44 |
| 107+53.57 | 107+59.19 | LEFT | 0.12 |
| 113+25.52 | 113+73.33 | LEFT | 0.81 |
| 113+39.53 | 116+53.64 | LEFT | 16.22 |
| 116+35.05 | 116+53.97 | RIGHT | 0.40 |
| 116+37.37 | 116+53.97 | LEFT | 0.60 |
| 116+60.93 | 116+81.05 | RIGHT | 0.68 |
| 116+60.97 | 116+77.10 | LEFT | 1.03 |
| 117+25.07 | 117+31.05 | LEFT | 0.11 |
| 117+26.16 | 117+31.68 | RIGHT | 0.16 |
| 117+44.98 | 117+58.08 | RIGHT | 0.12 |
| 117+44.98 | 117+57.72 | LEFT | 0.12 |
| 117+54.48 | 120+50.03 | RIGHT | 15.03 |
| 123+16.03 | 123+36.46 | RIGHT | 0.12 |
| 123+61.88 | 124+44.45 | RIGHT | 1.93 |
| 124+49.35 | 124+56.69 | RIGHT | 0.41 |
| 125+06.00 | 125+49.57 | LEFT | 0.53 |
| 126+16.29 | 126+21.66 | RIGHT | 0.13 |
| 126+42.88 | 126+66.73 | LEFT | 0.93 |
| 127+43.38 | 127+52.04 | LEFT | 0.12 |
| 134+00.49 | 134+46.65 | RIGHT | 1.21 |
| 134+58.22 | 135+46.23 | RIGHT | 1.77 |
| 136+26.30 | 136+38.84 | LEFT | 0.32 |
| 136+31.47 | 138+60.54 | RIGHT | 5.50 |
| 137+16.57 | 138+71.99 | LEFT | 7.32 |
| 138+37.96 | 138+77.96 | LEFT | 2.21 |
| 139+27.73 | 141+98.66 | RIGHT | 6.49 |
| 142+02.88 | 142+05.50 | LEFT | 0.02 |
| 142+05.03 | 142+11.83 | RIGHT | 0.13 |
| 142+15.10 | 142+21.88 | RIGHT | 0.84 |
| 142+62.83 | 142+71.52 | RIGHT | 0.27 |
| 142+78.03 | 142+90.68 | RIGHT | 0.09 |
| 142+86.13 | 142+91.45 | LEFT | 0.13 |
| 142+96.86 | 144+62.92 | RIGHT | 3.92 |
| 143+11.20 | 145+71.60 | LT/RT | 12.91 |
| 145+24.92 | 145+86.23 | RIGHT | 1.68 |
| 145+87.36 | 145+99.75 | LEFT | 0.82 |
| 145+92.29 | 146+05.21 | LEFT | 1.49 |
| 145+92.35 | 146+15.00 | RIGHT | 1.21 |
| 146+15.17 | 146+28.25 | RIGHT | 0.78 |
| 146+68.28 | 146+85.95 | LEFT | 1.64 |
| 146+79.07 | 146+88.13 | RIGHT | 0.98 |
| 146+80.43 | 146+94.56 | RIGHT | 1.98 |
| 146+93.83 | 147+03.83 | RIGHT | 0.81 |
| 146+98.76 | 147+65.10 | RIGHT | 2.56 |
| 151+19.79 | 151+77.00 | RIGHT | 1.32 |
| 151+82.99 | 151+94.63 | RIGHT | 0.17 |
| 152+25.41 | 152+41.37 | LEFT | 0.33 |
| 152+26.61 | 152+58.91 | LEFT | 5.09 |
| 152+43.47 | 152+75.02 | RIGHT | 2.77 |
| 152+48.89 | 152+84.02 | LEFT | 5.02 |
| 152+85.21 | 153+01.25 | RIGHT | 1.19 |
| 156+56.66 | 156+74.26 | RIGHT | 0.57 |
| 156+79.31 | 157+09.37 | RIGHT | 3.02 |
| 157+18.70 | 157+29.20 | RIGHT | 0.57 |
| 157+44.15 | 157+61.66 | RIGHT | 0.56 |
| 157+44.84 | 157+96.77 | RIGHT | 3.17 |
| 157+81.56 | 157+88.11 | LEFT | 0.21 |
| 157+91.53 | 157+96.56 | LEFT | 0.13 |
| 158+01.21 | 158+28.94 | RIGHT | 0.72 |
| 158+18.82 | 158+27.36 | LEFT | 0.51 |
| 158+36.70 | 158+40.74 | RIGHT | 0.24 |
| 158+36.70 | 158+66.38 | LEFT | 1.48 |
| 158+58.59 | 162+03.43 | LT/RT | 21.39 |
| 170+55.93 | 173+65.98 | RIGHT | 24.78 |
| | | | |
| TOTAL | | | 189.94 |

## FENCE

| STATION TO STATION | | SIDE | FENCE (CHAIN LINK) (4'-0") (LN. FT.) | POSTS (END) (CHAIN LINK) (EACH) |
|---|---|---|---|---|
| 131+52 | 131+52 | LEFT | 12.0 | 1 |
| | | | | |
| | | | | |
| TOTAL | | | 12.0 | 1 |

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 118 | 393 |

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| - | ___ | _____ | ___ | ___ |
| 2 | 1-14-08 | Rem. Drainage Structure summary | S.W.K. | J.Q.B. |
| 1 | 1-9-91 | Detailed on CADD _____ | R.J.S | J.Q.B. |

KANSAS DEPARTMENT OF TRANSPORTATION

# SUMMARY OF QUANTITIES

RD050

| | | | |
|---|---|---|---|
| FHWA APPROVAL 5-28-08 | | APP'D. James Q. Brewer ___ | |
| DESIGNED ___ | DETAILED ___ | QUANTITIES ___ | TRACED B.N.B. |
| DESIGN CK. ___ | DETAIL CK. ___ | QUAN.CK. ___ | TRACE CK. S.W.K. |

Plotted :25-APR-2019 13:00

Drawn By : lrosenbaum
File : 13668R0401.dgn

## RECAPITULATION OF ROAD QUANTITIES

| ITEM | QUANTITY | UNIT |
|---|---|---|
| Mobilization | 1 | LS |
| Contractor Construction Staking | 1 | LS |
| Field Office & Laboratory (Type A) | 1 | Each |
| Erosion Control | 1 | LS |
| Clearing & Grubbing | 1 | LS |
| Removal of Existing Structures | 1 | LS |
| Removal & Reconstruction of Existing Structures | 1 | LS |
| Common Excavation | 3,480 | Cu. Yd. |
| Rock Excavation | 6,027 | Cu. Yd. |
| Compaction of Earthwork (Type B) (MR-90) | 3,236 | Cu. Yd. |
| Concrete (Grade 3.0) (KCMMB4K) | 189.9 | Cu. Yd. |
| Curb & Gutter, Combined (KCMMB4K) (Special) | 15,039 | Ln. Ft. |
| Curb, Protection (KCMMB4K) (Special) | 9,212 | Ln. Ft. |
| Concrete Pavement (6" Uniform) (KCMMB4K) (Plain) | 3,183 | Sq. Yd. |
| Sidewalk Construction (4") (KCMMB4K) | 6,577 | Sq. Yd. |
| Sidewalk Ramp (KCMMB4K) | 1,263 | Sq. Yd. |
| Concrete (Grade 4.0) (KCMMB4K) | 48.8 | Cu. Yd. |
| Reinforcing Steel (Grade 60) | 4,780 | Lbs. |
| Fence (Chain Link) (4'-0") | 12 | Ln. Ft. |
| Posts (End) (Chain Link) | 1 | Each |
| Liner Pipe (Host) | 180 | Ln. Ft. |
| Invert Repair 60" x 220' CMP | 220 | Ln. Ft. |
| Adjustment of Manholes | 3 | Each |
| Inlet (Curb) (Setback) (Special) | 16 | Each |
| Inlet (Curb) (Type 12) | 2 | Each |
| Adjustment of Curb Inlets | 9 | Each |
| Junction Box | 3 | Each |
| Adjustment of Junction Box | 9 | Each |
| Inlet (Area) (Special) | 2 | Each |
| Storm Sewer (15") (RCP) | 319 | Ln. Ft. |
| Storm Sewer (18") (RCP) | 236 | Ln. Ft. |
| Storm Sewer (21") (RCP) | 88 | Ln. Ft. |
| Storm Sewer (24") (RCP) | 29 | Ln. Ft. |
| Storm Sewer (30") (RCP) | 19 | Ln. Ft. |
| Storm Sewer (36") (RCP) | 90 | Ln. Ft. |
| Storm Sewer (7.0 Sq. Ft.) (RCPHE) | 196 | Ln. Ft. |
| Roadside Improvements | 1 | LS |
| 4" White Thermoplastic | 225 | Ln. Ft. |
| 4" Yellow Thermoplastic | 3,411 | Ln. Ft. |
| 6" White Thermoplastic | 9,612 | Ln. Ft. |
| 12" Yellow Thermoplastic | 38 | Ln. Ft. |
| 24" White Pre-formed Thermoplastic | 521 | Ln. Ft. |
| White Right/Left Arrows Pre-formed Thermoplastic | 84 | Each |
| White Thru-Right/Left Arrows Pre-formed Thermoplastic | 3 | Each |
| Permanent Traffic Control Signs | 714 | Sq. Ft. |
| 1-3/4" x 1-3/4" Sign Posts | 880 | Ln. Ft. |
| 2" x 2" Sign Post Anchors | 320 | Ln. Ft. |
| 2-1/4" x 2-1/4" Anchor Sleeves | 200 | Ln. Ft. |
| Street Lighting | 1 | LS |
| Traffic Signals & Communication | 4 | Each |
| Traffic Control | 1 | LS |

## EARTHWORK

| LOCATION | STATION to STATION | | EXCAVATION COMMON CU.YDS. | EXCAVATION COMMON VMF | EXCAVATION ROCK CU.YDS. | EXCAVATION ROCK VMF | CONTR. FURN. CU.YDS. | COMPACTION TYPE AA MR- CU.YDS. | COMPACTION TYPE B MR-90 CU.YDS. | | NOT SUBGRADED THROUGH CUTS COMM. CU.YDS. | NOT SUBGRADED THROUGH CUTS TYPE AA CU.YDS. | | ✳EMBANKMENT (CU.YDS.) INITIAL CONSOL. | ✳EMBANKMENT (CU.YDS.) SETTLE-MENT | ⚠PLACE. SELECT SOIL CU.YDS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roe Boulevard | 100+97.58 | 173+68.20 | 3,086 | | 6,027 | | | | 2,616 | | | | | | | |
| W 55th Street | 20+47.19 | 22+57.31 | 33 | | | | | | 0 | | | | | | | |
| Rosewood Drive | 35+62.04 | 37+15.65 | 137 | | | | | | 137 | | | | | | | |
| Roe Lane | 70+30.20 | 72+36.14 | 150 | | | | | | 397 | | | | | | | |
| Skyline Drive | 75+34.67 | 76+82.36 | 43 | | | | | | 54 | | | | | | | |
| W 48th Street | 80+35.73 | 81+56.90 | 31 | | | | | | 32 | | | | | | | |
| | | | | | | | | | | | | | | | | |
| TOTAL | | | 3,480 | | 6,027 | | | | 3,236 | | | | | | | |

✳ Subsidiary (see General Note). ⚠ See General note.

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 119 | 393 |

For Surfacing Quantities, see sheet 120
For Temporary Erosion Control Quantities, see sheet 121
For Sodding Quantities, see sheet 124
For Schedule of Inlets and Manholes, see sheet 108
For Pavement Marking Quantities, see sheet 196
For Sign Quantities, see sheets 214 - 215
For Summary of Furnishing and Planting Plant Materials, see sheet L1
For Roadside Improvement Quantities, see sheet L1
For Electrical Lighting System Quantities, see sheets 136, 140, 143, 147

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| - | ____ | _____ | __ | __ |
| 2 | 1-14-08 | Rem. Drainage Structure summary. | S.W.K. | J.O.B. |
| 1 | 1-9-91 | Detailed on CADD _____ | R.L.S | J.O.B. |

KANSAS DEPARTMENT OF TRANSPORTATION

# SUMMARY OF QUANTITIES

RD050

| | | | |
|---|---|---|---|
| FHWA APPROVAL 5-28-08 | | APP'D. James O. Brewer | |
| DESIGNED ___ | DETAILED ___ | QUANTITIES ___ | TRACED B.N.B. |
| DESIGN CK. ___ | DETAIL CK. ___ | QUAN.CK. ___ | TRACE CK. S.W.K. |

Plotted 25-APR-2019 13:00
Drawn By : lrosenbaum
File : 13668R0401.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 120 | 393 |

GENERAL NOTE:

On surfacing projects, the 6" of Compaction Type AA, shown for the center portion on the roadbed, is for the purpose of restoring the original Compaction Type AA which may have been lost since grading operations. The exact locations of this Compaction Type AA, which will be required, is to be determined by the Engineer at the time of construction. This work shall be paid under the bid item "Compaction of Earthwork (Type AA)(MR- )".

Over all structures, unless otherwise directed by the Engineer, where the top of the hubguard is level with or above the finished shoulder grade, the earth cover over the structure slab shall be removed and backfilled with _____ material as directed by the Engineer. The removal of this material will be subsidiary.

The _____ material used to backfill over the structure shall be paid for at the prices shown in the contract.

The earth shoulders shall be compacted full depth (Type -MR ) except, when ordered by the Engineer, the top 3" shall be left uncompacted for seeding.

All side roads and house entrances shall be surfaced with _____ to the R/W line as indicated on the detail. All side roads and house entrances with existing asphalt surface shall be surfaced with _____ at least to the R/W line or to the end of construction, as directed by the Engineer. Each mailbox turnout (ON PROJECTS WHERE STABILIZED SHOULDERS ARE NOT SPECIFIED) shall be surfaced with _____ to the limits shown on the detail.

Surfacing material (SA-_____) shall be used for surfacing house entrances and side roads (_____C.Y./SQ. YD.) beyond the limits of the asphalt surface to the limits of construction as determined by the Engineer.

The thickness of side road and entrance surfacing may be increased to the same thickness as the stabilized shoulder within the approximate limits of the shoulder.

On projects which specify both asphalt base and surface course materials, side roads, house entrances and mailbox turnouts may be surfaced with both materials at the contractors option, with the approval of the Engineer.

Quantities for aggregate for shoulders, AS-1, are calculated on the basis of 150 lbs. per cu. ft. Quantities for stabilized base course, AB-3, are calculated on the basis of 1 56 lbs. per cu. ft. Weight/cu. ft. includes moisture allowed by specification.

The base course shall be constructed to the plan thickness as shown.

Thicknesses indicated for all construction which is paid for on a weight or volume basis are approximate and may vary to correct for unevenness in the foundations or for other normal unevenness encountered in placement operations.

A tack coat of SS-1HP shall be provided between each lift of all base courses and surface courses and under the first lift of base or surface courses when they are placed on an existing asphalt, brick, or concrete surface, when so ordered by the Engineer and at the rate designated by him. Quantities are included for these tacks calculated at the rate of 0.06 gal. /sq. yd.

Asphalt Material quantities are calculated on the basis of 8.328 lbs. per gal.

Shoulder rumble strips will not be constructed as part of this project.

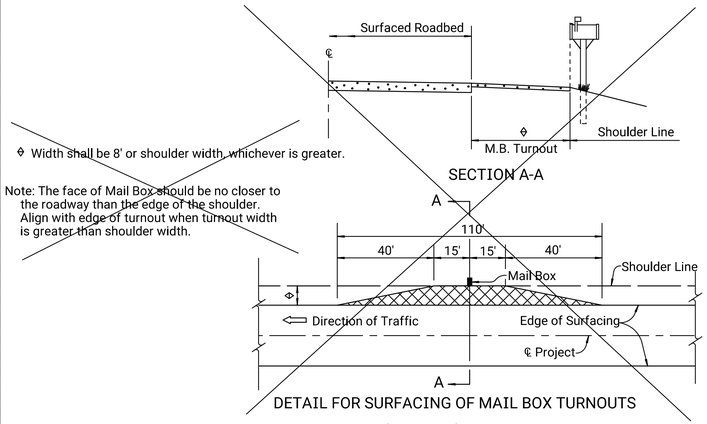
## SUMMARY OF QUANTITIES

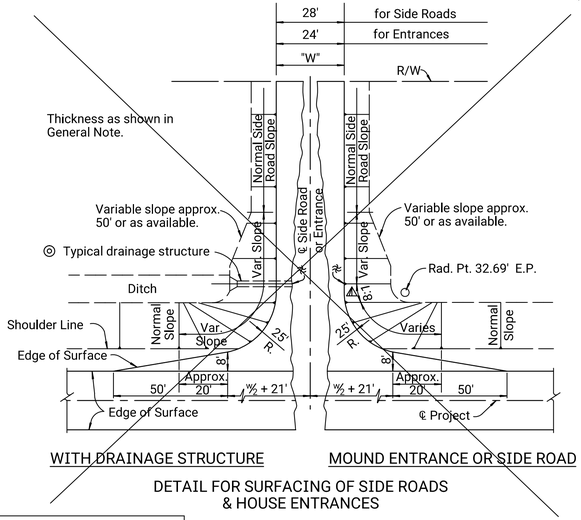
| ITEM | FULL DEPTH PAVEMENT SECTIONS: MAJOR ARTERIALS | FULL DEPTH PAVEMENT SECTIONS: MINOR ARTERIALS | FULL DEPTH PAVEMENT SECTIONS: RESIDENTIAL COLLECTORS/ COMMERCIAL PARKING | MILL AND OVERLAY SECTIONS | STREET PATCHING | DRIVEWAYS | TOTAL | UNITS |
|---|---|---|---|---|---|---|---|---|
| *ASPHALT SURFACE COURSE:* | | | | | | | | |
| † *PLANT MIX ASPHALT MIXTURE - OVERLAND PARK (SURFACE)* | *1,185.0* | *234.9* | *170.3* | *5,942.9* | | *24.2* | †† *7,557.3* | *Tons* |
| *ASPHALT BASE COURSE:* | | | | | | | | |
| † *PLANT MIX ASPHALT MIXTURE - OVERLAND PARK (BASE)* | *4,739.8* | *845.6* | *408.7* | | | *48.7* | *6,042.8* | *Tons* |
| *MILLING* | | | | *42,831.8* | | | *42,831.8* | *S.Y.* |
| † *HMA-COMMERCIAL GRADE (CLASS A) (PATCHING)* | | | | | ††† *1,301.0* | | *1,301.0* | *Tons* |

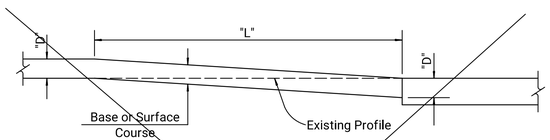
† *Computed at the rate of 148 lbs./cu. ft. (Total Mix - Aggregate & Asphalt)*

†† *Computed thickness = 2.5" to allow for surface inconsistencies.*

††† *Asphalt quantity includes street patching for cross road pipes.*




TYPICAL PROFILE AT GRADE CONTROL POINTS

The Contractor shall cut the subgrade in accordance with this profile at all grade control points, i.e.; existing pavements, grade bridges and R.R. crossings, also at changes in thickness of base or surface courses. Corresponding dimensions of "D" and "L" shall be as given in the table below.

The work of cutting the subgrade and disposing of excess excavated material shall be subsidiary to other items in the contract.

| TABLE OF DIMENSIONS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | L | D | L | D | L | D | L | D | L | D | L |
| 1" | 25' | 3" | 75' | 5" | 125' | 7" | 175' | 9" | 225' | 11" | 275' |
| 2" | 50' | 4" | 100' | 6" | 150' | 8" | 200' | 10" | 250' | 12" | 300' |

## RATES OF APPLICATION

| RATE | UNIT | ITEM | | |
|---|---|---|---|---|

## RECAPITULATION OF QUANTITIES

| ITEM | | | TOTAL | UNIT |
|---|---|---|---|---|
| *PLANT MIX ASPHALT MIXTURE - OVERLAND PARK (SURFACE)* | | | *7,557.3* | *Tons* |
| *PLANT MIX ASPHALT MIXTURE - OVERLAND PARK (BASE)* | | | *6,042.8* | *Tons* |
| *MILLING* | | | *42,831.8* | *S.Y.* |
| *HMA-COMMERCIAL GRADE (CLASS A) (PATCHING)* | | | *1,301.0* | *Tons* |

⚠ 8:1 Slope at the appropriate clear zone shall apply to all mound entrances and mound side roads to 10' fill height. Normal Slope (but not steeper than 6:1) for over 10' fill height.

◎ Normal Slope (but not steeper than appropriate clear zone width. 6:1) at approximate ℄ structure or

≠ On side roads and entrances which slope toward the highway, a low point approx. 6" deep shall be constructed to divert surface drainage into the highway ditch, unless otherwise shown on the plans.

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| – | ___ | _____ | ___ | ___ |
| – | ___ | _____ | ___ | ___ |
| – | ___ | _____ | ___ | ___ |

KANSAS DEPARTMENT OF TRANSPORTATION

# SUMMARY OF QUANTITIES (Surfacing)

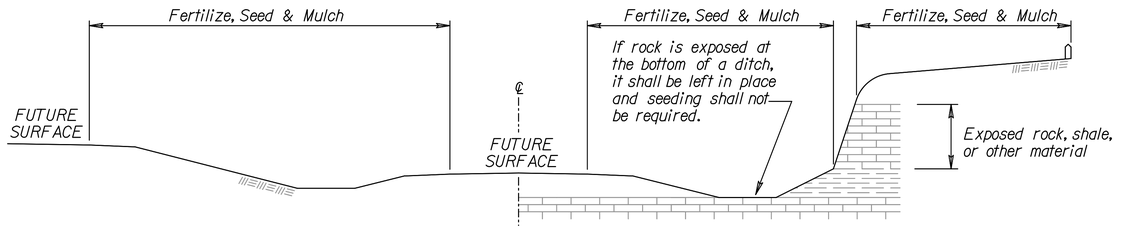
~~RD051~~

| | | | |
|---|---|---|---|
| FHWA APPROVAL 9-06-06 | | APP'D. James Q. Brewer | |
| DESIGNED ___ | DETAILED ___ | QUANTITIES ___ | TRACED Bowser |
| DESIGN CK. ___ | DETAIL CK. ___ | QUAN.CK. ___ | TRACE CK. Hecht |

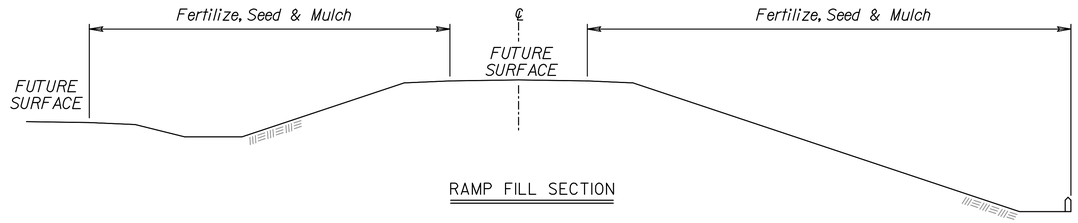
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Drawn By : lrosenbaum
File : 13668R0401.dgn

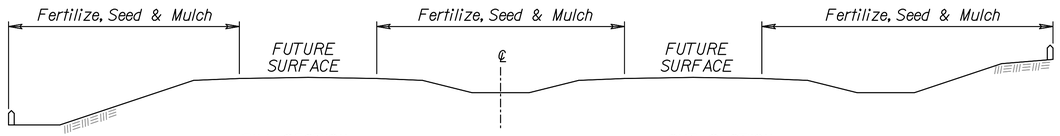
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 121 | 393 |




RAMP CUT SECTION




RAMP FILL SECTION




TYPICAL SECTION - DUAL PAVEMENT

*FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, $P_2O_5$, $K_2O$ listed in Summary of Quantities will be acceptable.*

- * - N = Nitrogen Rate of Application
- ** - $P_2O_5$ = Phosphorous Rate of Application
- *** - $K_2O$ = Potassium Rate of Application

*The Contractor will be required to finish areas of excavation, borrow and embankment in accordance with the specifications. Areas that require installation or construction of temporary water pollution control items will be finished in reasonable close conformity to the alignment, grade and cross section shown on the plans or as established by the Engineer.*

*CLT = Construction Limit Tract. This area is defined by the entire disturbed area of the project that requires seeding and erosion control measures to be placed. Any impervious areas (i.e. pavement, gravel, riprap, etc.) shall not be included in this measurement.*

*Slope = Defined by the area of the project that requires Class 1 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.*

*Channel = Defined by the area of the project that requires Class 2 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.*

## GENERAL NOTES

*The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded, and mulched. Soil preparation shall conform to the Standard Specifications.*

*Temporary seeding shall be done during any time of the year that the soil can be cultivated. After the temporary seeding has been completed on the entire project, permanent seeding shall be done during the normal seeding season.*

*MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching materials is generally as follows:*

*1¾ - 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.*

*Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.*
*Other vegetative mulches are acceptable only with the Engineer's concurrence.*

*The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.*

## SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES

| P.L.S. RATE/ ACRE | | ACRES | | BID ITEM | QUANTITY | UNIT |
|---|---|---|---|---|---|---|
| CLT | SL/CH | CLT | SL/CH | | | |
| | | | | Temporary Fertilizer ( * - ** - *** ) | | LB |
| | | | | Temporary Seed (Canada Wildrye) | | LB |
| | | | | Temporary Seed (Grain Oats) | | LB |
| | | | | Temporary Seed (Sterile Wheatgrass) | | LB |
| | | | | Soil Erosion Mix | | LB |
| | | | | Erosion Control (Class 1, Type Y) | | SQ YD |
| | | | | Erosion Control (Class 2, Type Y) | | SQ YD |
| | | | | Sediment Removal (Set Price) | 1 | CU YD |
| | | | | Synthetic Sediment Barrier | | LF |
| | | | | Temporary Berm (Set Price) | 1 | LF |
| | | | | Temporary Ditch Check (Rock) | | CU YD |
| | | | | Temporary Inlet Sediment Barrier | | EACH |
| | | | | Temporary Sediment Basin | | CU YD |
| | | | | Temporary Slope Drain | | LF |
| | | | | Temporary Stream Crossing | | EACH |
| | | | | Biodegradable Log (9") | | LF |
| | | | | Biodegradable Log (12") | | LF |
| | | | | Biodegradable Log (20") | | LF |
| | | | | Filter Sock (8") | 465 | LF |
| | | | | Geotextile (Erosion Control) | | SQ YD |
| | | | | Silt Fence | 1,751 | LF |
| | | | | SWPPP Design † | 1 | LS |
| | | | | SWPPP Inspection † | | EACH |
| | | | | Water Pollution Control Manager † | | EACH |
| 900 lbs / acre | | | | Mulch Tacking Slurry | | LB |
| 2 tons / acre | | | | Mulching | | TON |
| | | | | Water (Erosion Control) (Set Price) | 1 | MGAL |
| | | | | | | |

*NOTE: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. See Permanent Seeding Summary of Seeding Quantities sheet LA850 for further details.*

*Geotextile (Erosion Control) shall be removed prior to placement of permanent slope protection.*

*Regreen and Quick Guard are the approved sterile wheatgrass products.*

*† If the total disturbed area of the project, not just the seeding area, is 1 acre or more, then these bid items must be included.*

***** List size of material.*

*The amount of mulch and mulch tacking slurry in the bid quantities is estimated. (Acres of Seeding X 1.5 X 2 Tons/Acre). The estimated quantity includes mulching associated with both temporary and permanent seeding operations. The total mulch and mulch tacking slurry required shall be determined in the field. The bid item for mulching and mulch tacking slurry shall be paid for according to the Standard Specifications.*

## SOIL EROSION MIX

| PLS RATE | NAME | QTY (lb) |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | Total (lb) | |

*The Soil Erosion Mix is to be placed under the Class 1 and/or Class 2 erosion control material.*

*The Soil Erosion Mix consists of the Shoulder Area of the Permanent Seed Mix used on the project.*

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 3 | 12/01/17 | Revised Standard | MRD | SHS |
| 2 | 6/01/17 | Revised Standard | MRD | SHS |
| 1 | 2/01/17 | Revised Standard | MRD | SHS |

**KANSAS DEPARTMENT OF TRANSPORTATION**

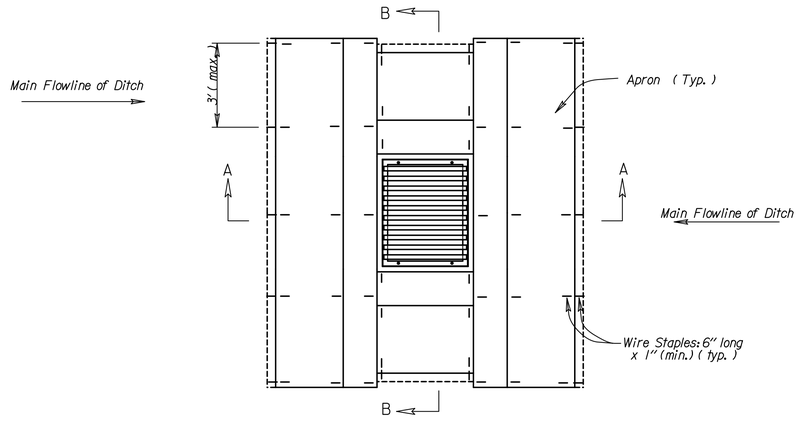
TEMPORARY EROSION AND POLLUTION CONTROL

LA852A

| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 1/26/2018 | APP'D | Scott H. Shields | |
| DESIGNED | MRD | DETAILED | MRD | QUANTITIES | CADD |
| DESIGN CK. | SHS | DETAIL CK. | SHS | QUAN.CK. | CADD CK. |

Std. Base File:
Plotted By: *rosenbaum* | Plot Location:
File: *13668P0401.dgn*
Plot Date: *25-APR-2019 14:54*

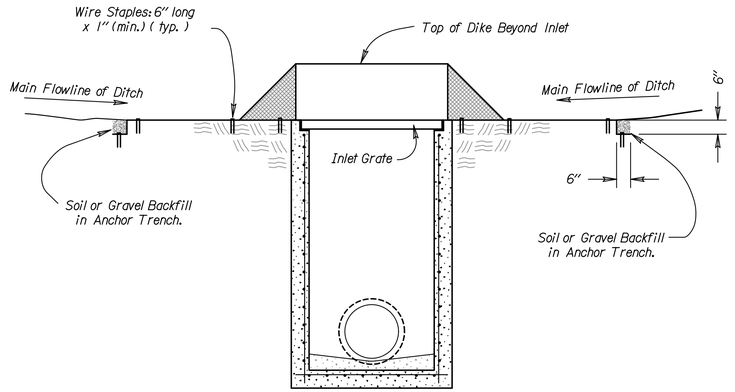
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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| KANSAS | 46 N-0661-01 | 2019 | 122 | 393 |



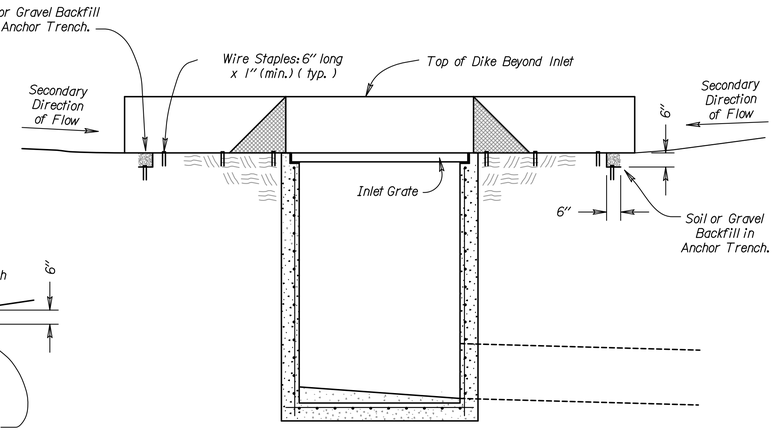

PLAN

TEMPORARY INLET SEDIMENT BARRIER
(TRIANGULAR SILT DIKE METHOD)

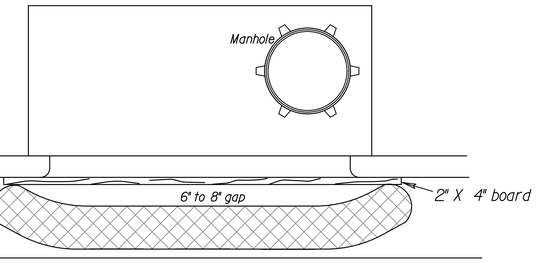
*NO SCALE*




SECTION A - A




SECTION B - B

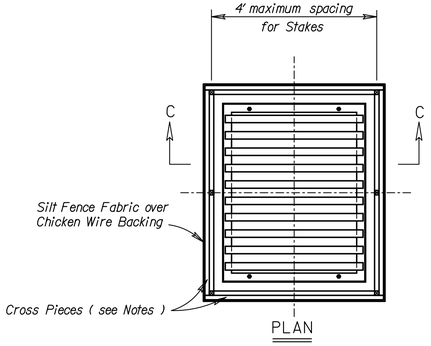



Bags = synthetic net (3mm mesh) or burlap bags

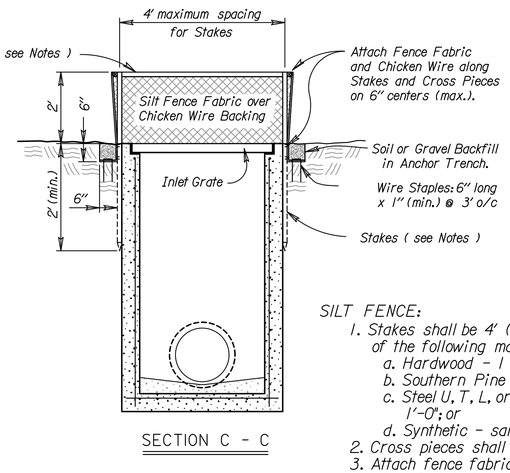
Rock = approximately 1" to 2" diameter

CURB INLET PROTECTION

1. If multiple gravel bags are required, place them in such a way that no gaps are evident.
2. Height of bags (8" minimum diameter) must not be above top of curb.
3. Alternative products may be used other than gravel bags such as the "Gutter Buddy". Products must be approved by the Engineer.
4. Curb inlet protection will be measured and paid for as Filter Sock.




PLAN



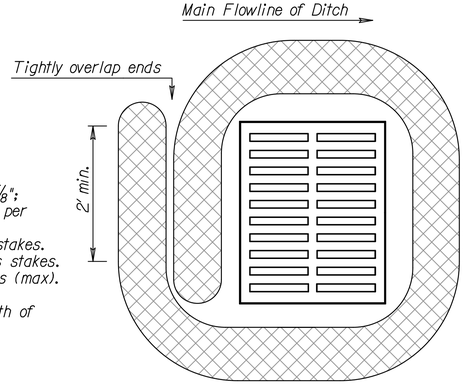

SECTION C - C

TEMPORARY INLET SEDIMENT BARRIER
( SILT FENCE METHOD )

*NO SCALE*

SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1 3/16" x 1 3/16";
   b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
   d. Synthetic - same strength as wood stakes.
2. Cross pieces shall be of same material as stakes.
3. Attach fence fabric securely on 6" centers (max).
4. Use of high flow material is acceptable.
5. Refer to plan sheets to estimate the length of silt fence required.




Note: 25% of log shall be keyed into ground during installation.

Stake every 4'

Drop inlet use
1'-6" TO 1'-8" diameter log

BIODEGRADABLE LOG/FILTER SOCK
DROP INLET PROTECTION

| Material Requirements |
|---|
| Use 100% shredded mulch or other non-compost biodegradable material as fill for logs. |
| No compost or fines. |
| No hay or straw. |
| Do not use material which prohibits water infiltration. |
| Log Mesh: Use mesh with 1/4" openings or larger. Mesh must allow water infiltration but also hold fill materal in place. |

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 3 | 3/01/15 | Revised Standard | RA | SHS |
| 2 | 6/01/13 | Revised Standard | MRM | SHS |
| 1 | 3/01/13 | Revised Standard | MRM | SHS |

KANSAS DEPARTMENT OF TRANSPORTATION

# TEMPORARY EROSION AND POLLUTION CONTROL

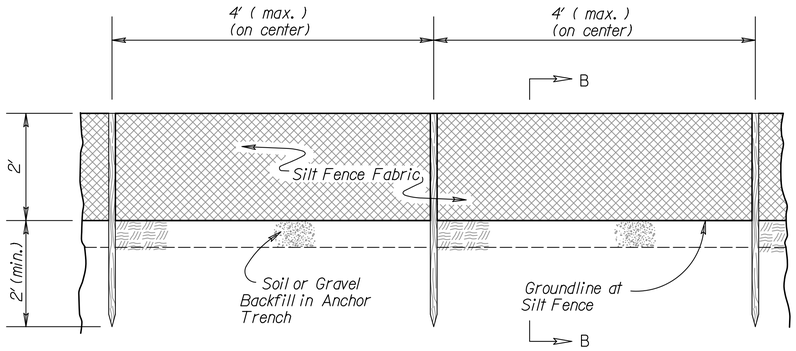
TEMP. INLET SEDIMENT BARRIER (SILT FENCE)
TEMP. INLET SEDIMENT BARRIER (T.S.D.)
CURB INLET PROTECTION
DROP INLET PROTECTION

LA852C

| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 3/10/2015 | APP'D | Scott H. Shields | |
| DESIGNED | RA | DETAILED | RA | QUANTITIES | CADD |
| DESIGN CK. | SHS | DETAIL CK. | SHS | QUAN.CK. | CADD CK. |

Std. Base File:
Plotted By: Irosenbaum | Plot Location:
File: 1366BR040I.dgn
Plot Date: 25-APR-2019 13:00

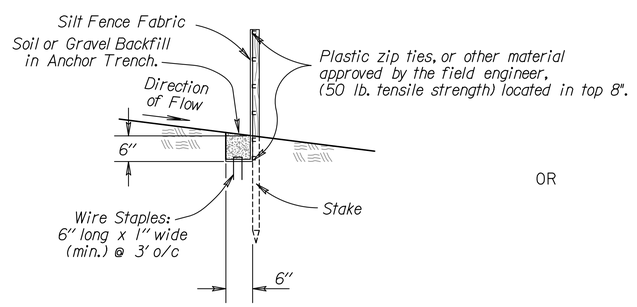
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 123 | 393 |




TYPICAL ELEVATION

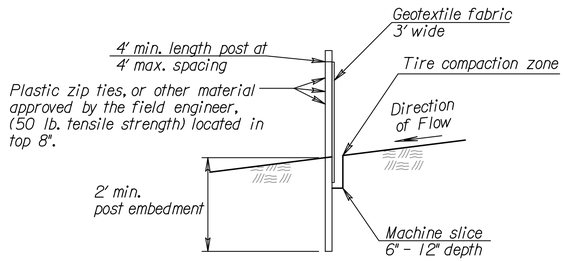
SILT FENCE BARRIER

NO SCALE




SECTION B-B

OR




SECTION B-B

## INSTALLATION NOTES

SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1 3/16" x 1 3/16";
   b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
   d. Synthetic - same strength as wood stakes.
2. Attach fence fabric with 3 zip ties within the top 8" of the fence
   Alternate attachment methods may be approved by the Engineer on a performance basis.
3. Use of high flow material is acceptable.
4. Refer to plan sheets to estimate the length of silt fence required.

BIODEGRADABLE LOG OR FILTER SOCK

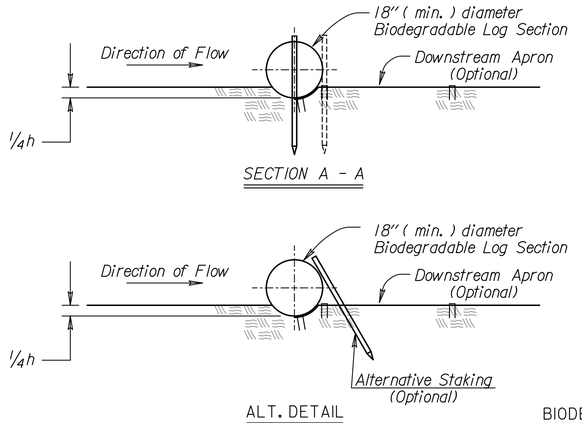
1. Place biodegradable logs or filter sock tightly together minimum overlap of 18".
2. Wood stakes shall be 2" x 2" (nom.).
3. Refer to plan sheets to estimate length of biodegradable log and filter sock required.
4. Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.
5. Length of stakes should be 2 times the height of the log at a minimum with minimum ground embedment equal to the height of the log / sock.

Biodegradable Log or Filter Sock Slope Interruptions

| Slope Gradient | PRODUCT | 9" Sediment Log or 8" Filter Sock (ft) | 12" Sediment Log or 12" Filter Sock (ft) | 20" Sediment Log or 18" Filter Sock (ft) |
|---|---|---|---|---|
| | ≤4H:1V | 40 | 60 | 80 |
| | 3H:1V | 30 | 45 | 60 |
| | | | | |
| | | | | |

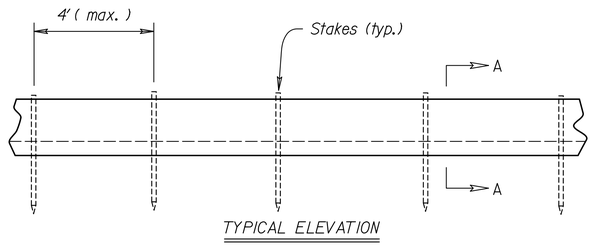
Deviations should be approved by the Field Engineer.

| | BIODEGRADABLE LOG MATERIAL | |
|---|---|---|
| | LOW FLOW | HIGH FLOW |
| 9" | Straw/Compost | Excelsior / Wood Chips / Coconut Fiber |
| 12" | Straw/Compost | Excelsior / Wood Chips / Coconut Fiber |
| 18"-20" | Straw/Compost | Excelsior / Wood Chips / Coconut Fiber |




ALT. DETAIL

OPTIONAL




TYPICAL ELEVATION

BIODEGRADABLE LOG SLOPE INTERRUPTIONS

OR Filter Sock

## GENERAL NOTES

1) Slope interruptions shall be placed along contour lines, with a short section turned upgrade at each end of the barrier.
2) The maximum length of the slope interruptions shall not exceed 250 feet, and the barrier ends need to be staggered.
3) Interruptions damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
4) Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 3 | 6/28/16 | Revised Standard | RA | SHS |
| 2 | 3/01/15 | Revised Standard | RA | SHS |
| 1 | 6/01/13 | Revised Standard | MRM | SHS |

KANSAS DEPARTMENT OF TRANSPORTATION

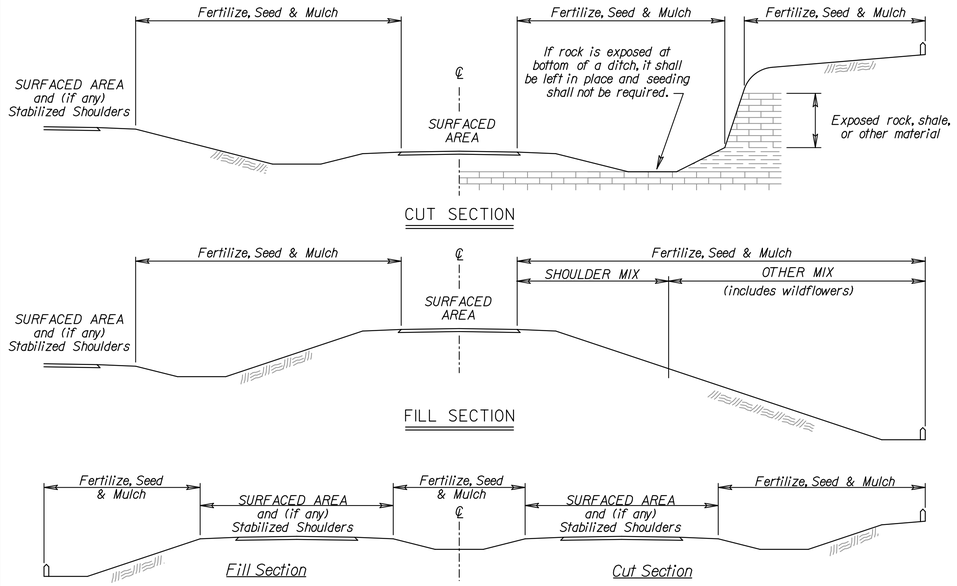
# TEMPORARY EROSION AND POLLUTION CONTROL

## SLOPE INTERRUPTIONS BIODEGRADABLE LOG / SILT FENCE

LA852D

| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 9/14/2016 | APP'D | Scott H. Shields | |
| DESIGNED | SHS | DETAILED RA | QUANTITIES | CADD | |
| DESIGN CK. | SHS | DETAIL CK. | QUAN.CK. | CADD CK. | |

Std. Base File:
Plotted By: lrosenbaum | Plot Location:
File: 1366BR0401.dgn
Plot Date: 25-APR-2019 13:00




TYPICAL SECTION - DUAL PAVEMENT

## SEEDING PERIODS

| COOL SEASON | WARM SEASON |
|---|---|
| February 15 to April 20 and August 15 to Sept. 30 | November 15 to June 1 |
| SPECIES | SPECIES |
| Bluegrasses | Big Bluestem |
| Bromegrasses | Blue Grama |
| Canada Wildrye | Buffalograss |
| Fescues | Indiangrass |
| Prairie Junegrass | Little Bluestem |
| Ryegrasses | Sand Bluestem |
| Sterile Wheatgrass | Sand Dropseed |
| Tall Dropseed | Sand Lovegrass |
| Western Wheatgrass | Side Oats Grama |
| | Switchgrass |
| | Wildflower Mixes |

In areas of 1 acre or more, if Cool Season grasses are mixed with Warm Season grasses, seed the area during the Warm Season seeding period.

When the area to be seeded is less than 1 acre, seed the area any time of the year.

## SODDING PERIODS

| COOL SEASON | WARM SEASON |
|---|---|
| March 1 to April 15 | May 15 to September 15 |
| SPECIES | SPECIES |
| Bluegrass Sod | Buffalograss Sod |
| Fescue Sod | |

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 124 | 393 |

## GENERAL NOTES

*The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded and mulched. Soil preparation shall conform to the Standard Specifications except as noted below.*

*All borrow areas shown on the plans are to be fertilized, seeded, and mulched. However, operation in borrow areas where crops are growing may be omitted when requested by the owner.*

*If temporary cover has provided stable slopes with no erosion, seed the permanent grasses into the existing cover. If there has been erosion that requires repair prior to seeding, then it may be necessary to regrade the area, resulting in bare ground.*

*FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, $P_2O_5$, $K_2O$ listed in Summary of Seeding Quantities will be acceptable.*

*MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching material is generally as follows:*

*1¾ - 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.*

*Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.*

*Other vegetative mulches are acceptable only with the Engineer's concurrence.*

*The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.*

## NATIVE WILDFLOWER MIX 1

| PLS RATE | NAME | QTY (lb) |
|---|---|---|
| 0.3 | Butterfly Milkweed | |
| 0.3 | Common Milkweed | |
| 0.3 | Black Eyed Susan | |
| 0.5 | Blanket Flower | |
| 0.5 | False Sunflower | |
| 0.5 | Lance-Leaf Coreopsis | |
| 0.2 | Maximilian Sunflower | |
| 0.1 | New England Aster | |
| 0.2 | Pinnate Prairie Coneflower | |
| 0.2 | Plains Coreopsis | |
| 0.3 | Purple Coneflower | |
| 0.3 | Upright Prairie Coneflower | |
| 0.3 | Dames Rocket | |
| 0.3 | Lemon Mint | |
| 0.2 | Pitcher Sage | |
| 0.2 | Wild Bergamot | |
| 1.0 | Illinois Bundleflower | |
| 0.2 | Common Evening Primrose | |
| 0.1 | Hoary Verbena | |
| 0.8 | Purple Prairie Clover | |
| 0.3 | Roundhead Lespedeza | |
| 3.0 | Showy Partridge Pea | |
| 0.2 | White Prairie Clover | |
| 10.3 | Total (lb) | |

## NATIVE WILDFLOWER MIX 2

| PLS RATE | NAME | QTY (lb) |
|---|---|---|
| 0.3 | Butterfly Milkweed | |
| 0.3 | Black Eyed Susan | |
| 0.5 | Black Sampson Coneflower | |
| 1.0 | Blanket Flower | |
| 0.2 | Maximilian Sunflower | |
| 0.2 | Plains Coreopsis | |
| 0.2 | Upright Prairie Coneflower | |
| 0.2 | Western Yarrow | |
| 0.3 | Lemon Mint | |
| 0.4 | Pitcher Sage | |
| 1.5 | Illinois Bundleflower | |
| 0.2 | Common Evening Primrose | |
| 1.0 | Blue Wild Indigo | |
| 0.4 | Leadplant | |
| 0.4 | Purple Prairie Clover | |
| 0.3 | White Prairie Clover | |
| 7.4 | Total (lb) | |

*Package and deliver the wildflower seed separately from the grass seed mix. Package and deliver the Tall Drop Seed separately from the grass seed and the wildflower mix. Place the grass seed (except Tall Drop Seed) in the large seed box and drill (cover) seed 1/8" - 1/4". Place the wildflower seed in a separate seed box and drill (cover) seed 1/16" maximum. Place the Tall Drop Seed in a separate (third) seed box and place the seed (using the seed drill) on the soil surface.*

*OPTION: Broadcast Tall Drop Seed on the soil surface.*

## SUMMARY OF SEEDING QUANTITIES

| P.L.S. RATE/ACRE SHLDR | P.L.S. RATE/ACRE OTHER | ACRES SHLDR | ACRES OTHER | BID ITEM | QUANTITY | UNIT |
|---|---|---|---|---|---|---|
| | | | | Sod (Tall Turf Type Fescue) (Strips) | 25,039 | 25,039 |
| 200 | | 5.173 | | Fertilizer (12-12-12) | 1,035 | 1,035 |
| | | | | Mulching * | | |

*SHLDR = Seeded with the Shoulder Mix. Typically 15 feet for 2-lane roads and 30 feet for 4-lane roads. Includes outside roadsides, turfed portions of shoulders, and turfed portion of the median.*

*OTHER = Seeded with the "Other" Mix. Designated as all other turf areas, except the Shoulder. Usually includes a Native Wildflower Mix.*

*NOTE: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. All disturbed areas shall be seeded, fertilized and mulched at the listed rate per acre. The acres are estimated.*

** See LA852A for mulching quantity. The quantity of mulch is estimated (Acres of Seeding X 1.5 X 2 Tons/Acre). The total mulch required shall be determined in the field. The bid item for mulching shall be paid for according to the Standard Specifications.*

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 3 | 12/01/17 | Revised Standard | MRD | SHS |
| 2 | 6/01/17 | Revised Standard | MRD | SHS |
| 1 | 2/01/17 | Revised Standard | MRD | SHS |

**KANSAS DEPARTMENT OF TRANSPORTATION**

PERMANENT SEEDING
SUMMARY OF SEEDING QUANTITIES

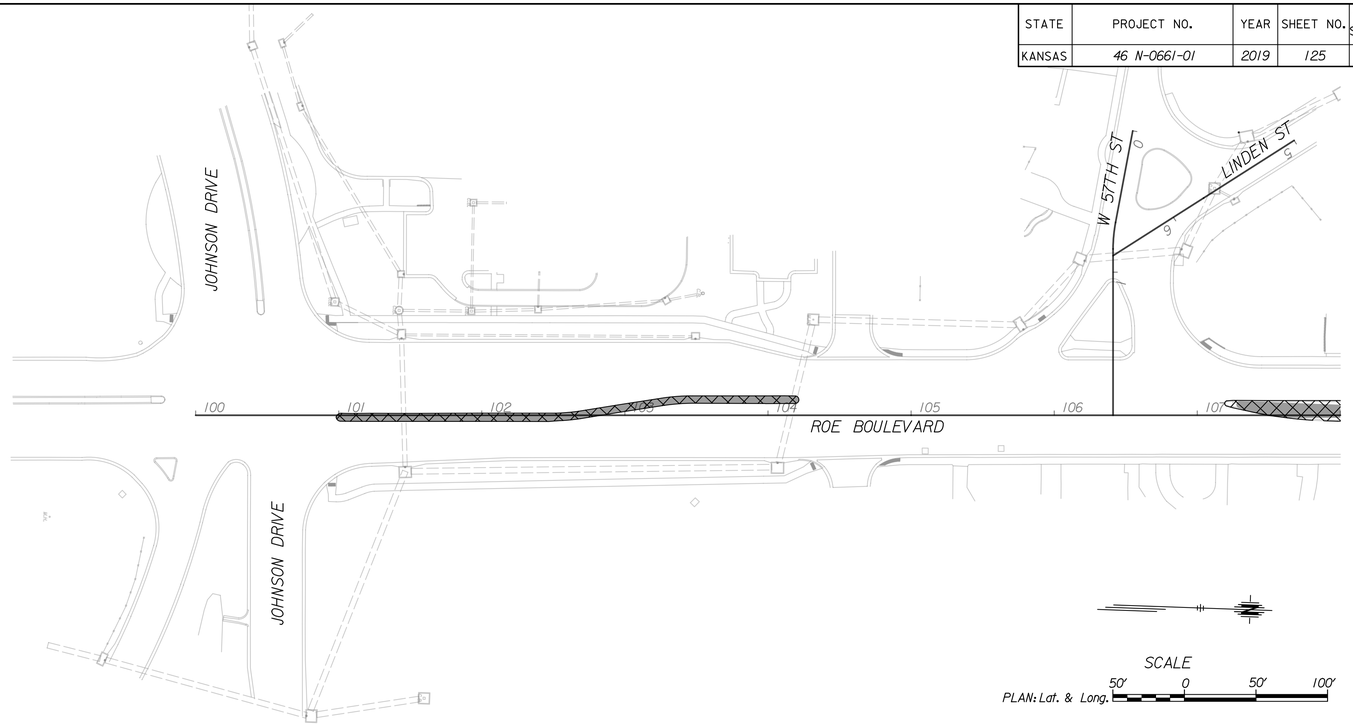
LA850

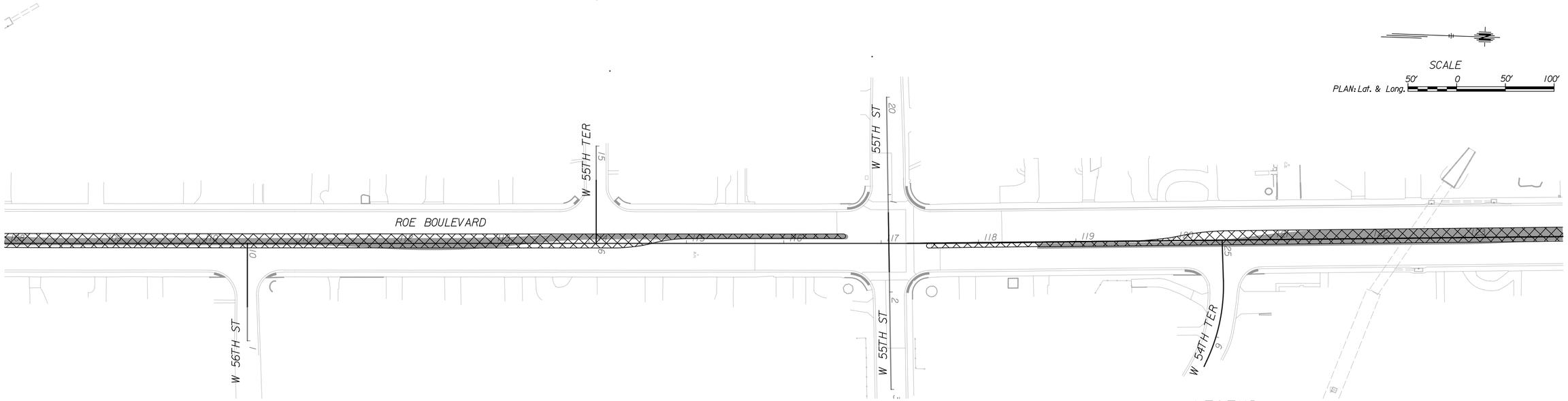
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|---|---|---|---|
| FHWA APPROVAL | 1/26/2018 | APP'D | Scott H. Shields |
| DESIGNED MRD | DETAILED MRD | QUANTITIES | CADD |
| DESIGN CK. | DETAIL CK. | QUAN.CK. | CADD CK. |

Std. Base File:
Plotted By: *lrasenbaum* Plot Location:
File: *1366BR0401.dgn*
Plot Date: *25-APR-2019 13:00*

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 125 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

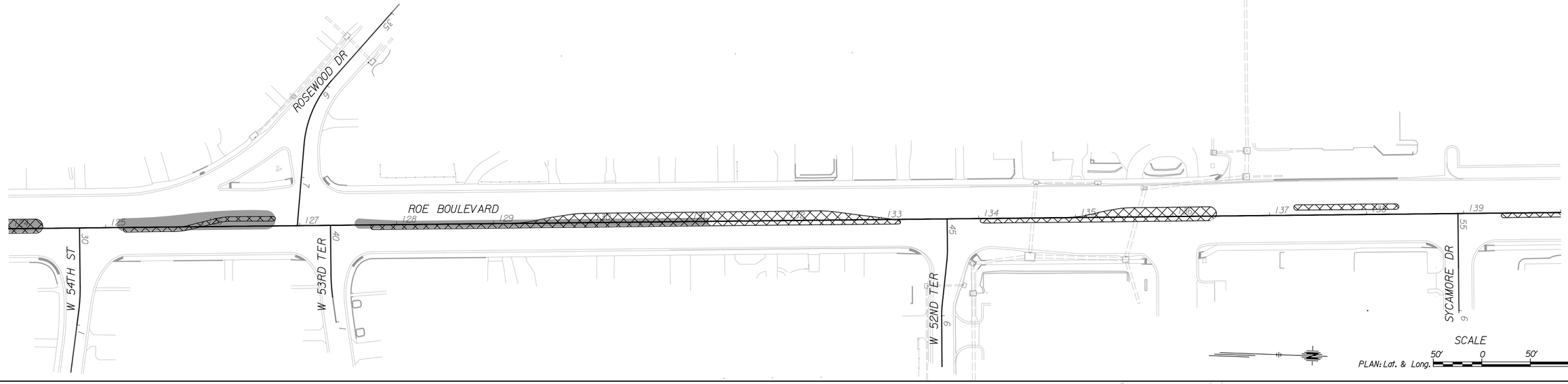


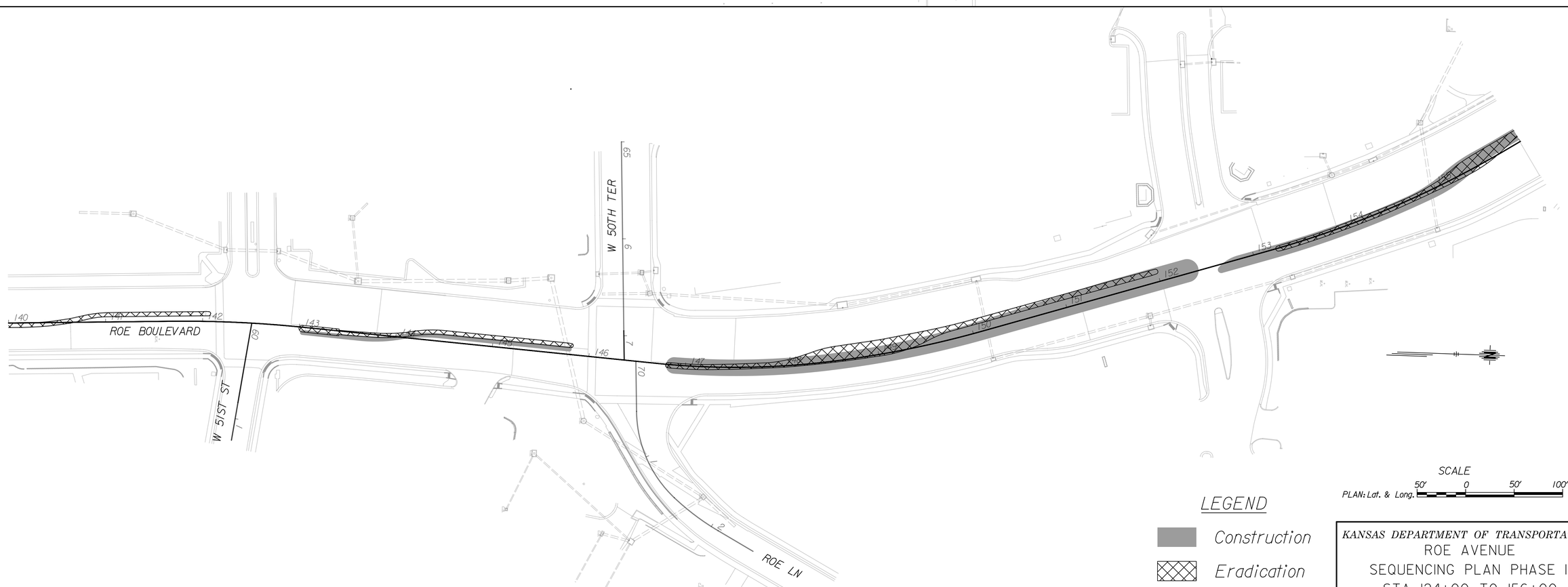




KANSAS DEPARTMENT OF TRANSPORTATION
ROE AVENUE
SEQUENCING PLAN PHASE I
STA. 100+00 TO 124+00

Plotted : 25-APR-2019 13:00
Drawn By : lrosenbaum
File : 13668T5301.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 126 | 393 |



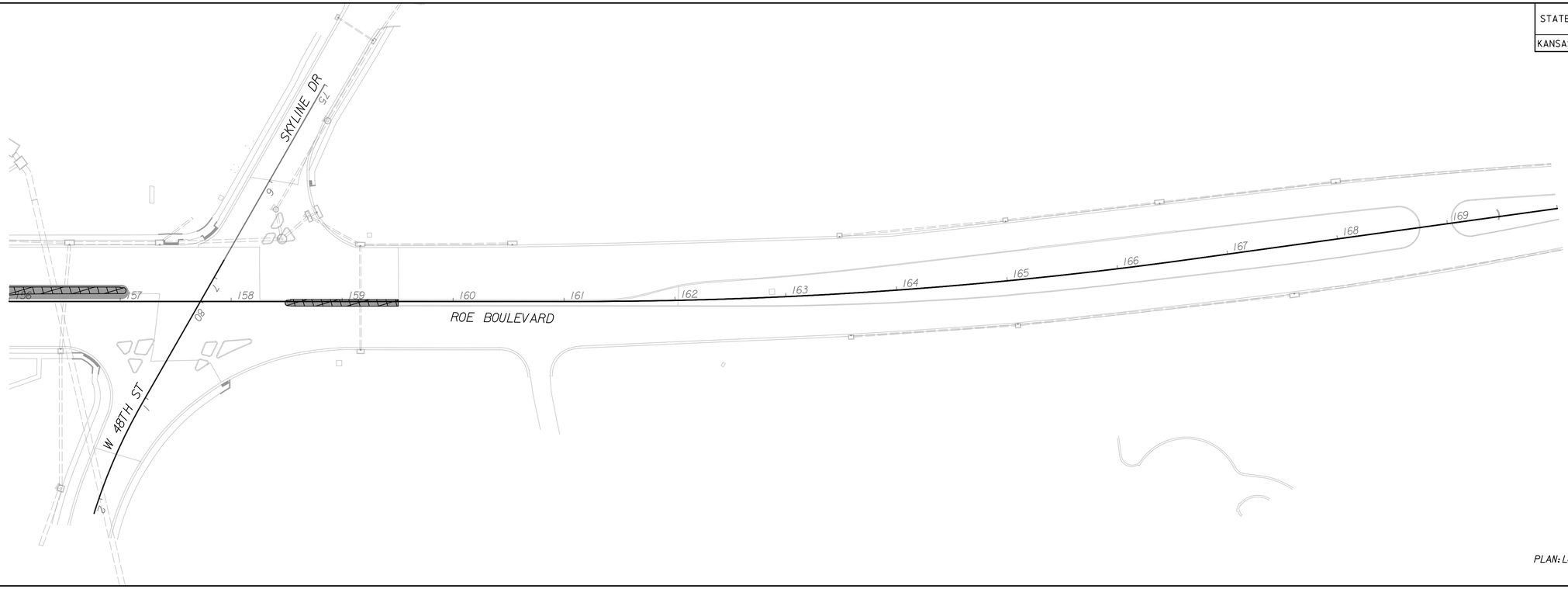

KANSAS DEPARTMENT OF TRANSPORTATION
ROE AVENUE
SEQUENCING PLAN PHASE I
STA. 124+00 TO 156+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:00

Drawn By : lrosenbaum
File : 13668T5302.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 127 | 393 |




SCALE
50' 0 50' 100'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

LEGEND

Construction

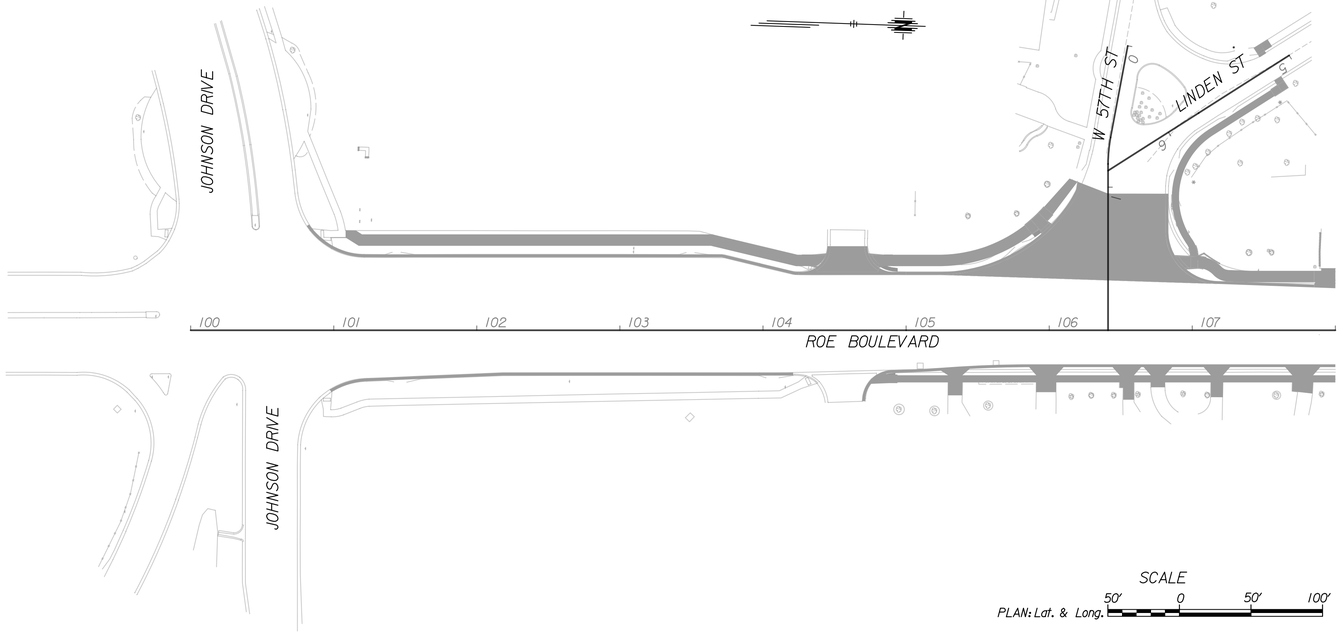
Eradication

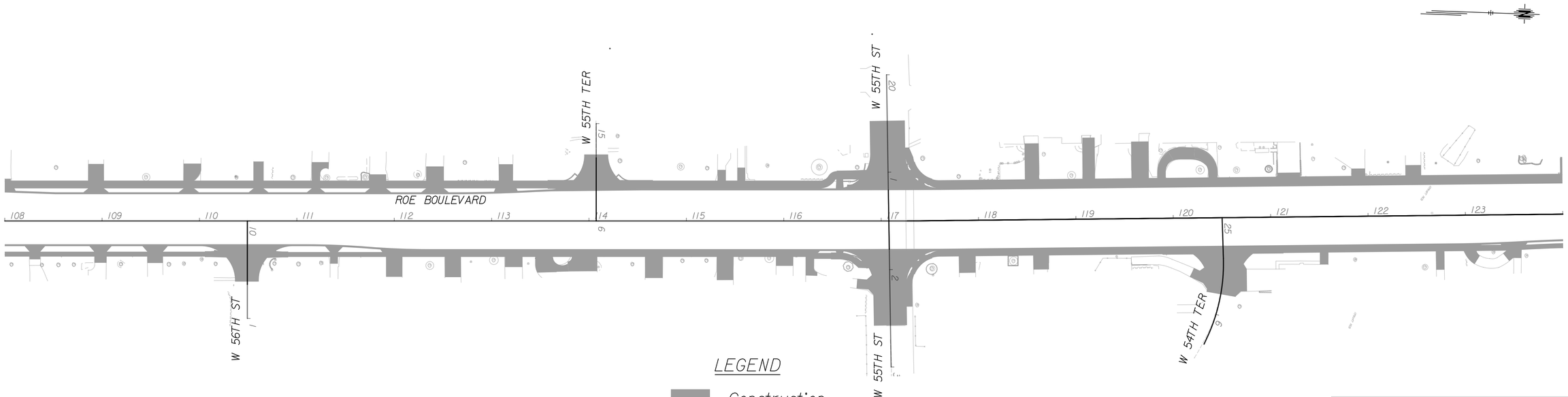
KANSAS DEPARTMENT OF TRANSPORTATION
ROE AVENUE
SEQUENCING PLAN PHASE 3
STA. 156+00 TO 170+00

Plotted : 25-APR-2019 13:00
Drawn By : Irosenbaum
File : 13668T5303.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 128 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




KANSAS DEPARTMENT OF TRANSPORTATION

ROE AVENUE

SEQUENCING PLAN PHASE 2

STA. 100+00 TO 124+00

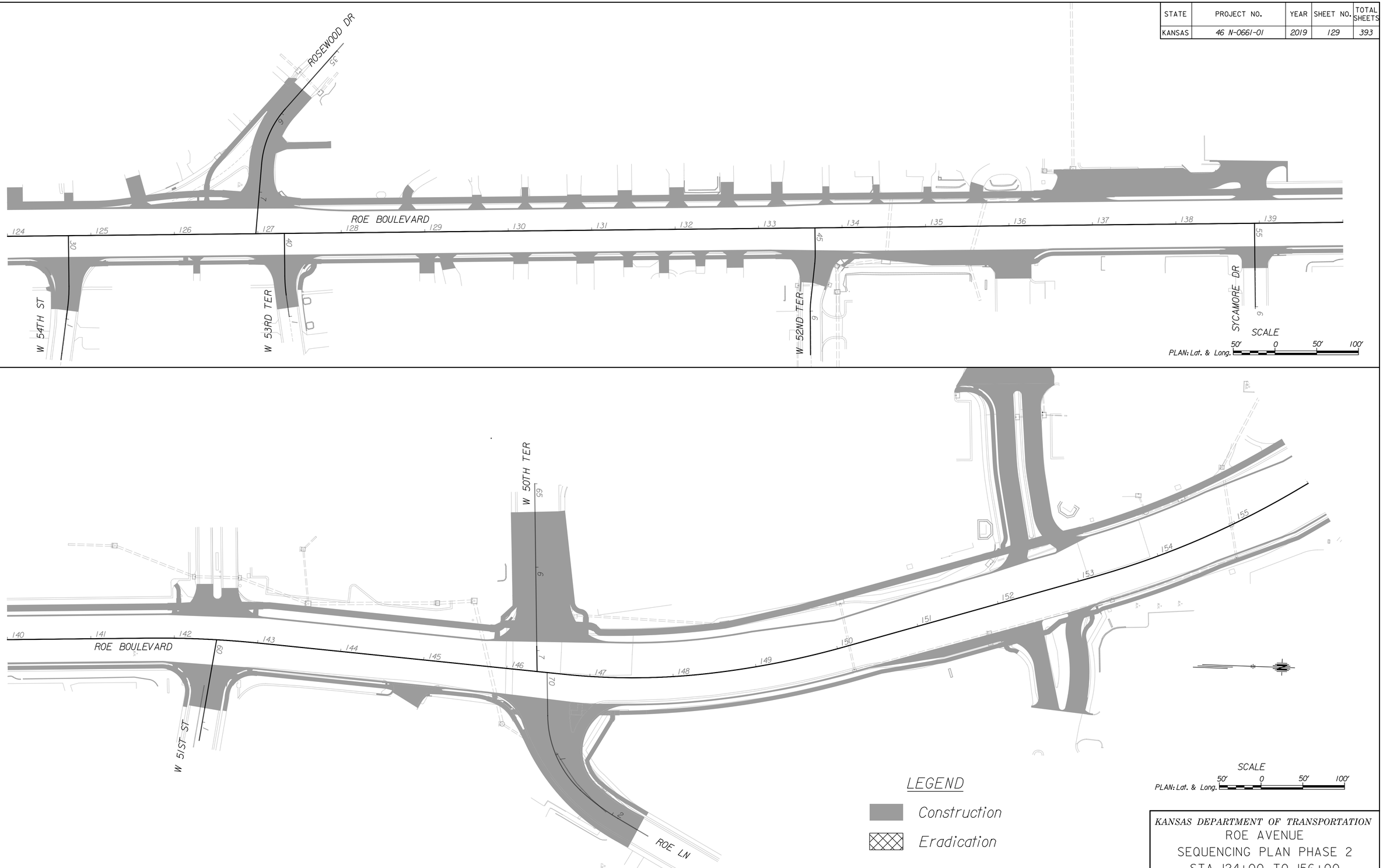
Plotted : 25-APR-2019 13:00

Drawn By : lrosenbaum

File : 13668T5304.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 129 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




KANSAS DEPARTMENT OF TRANSPORTATION

ROE AVENUE

SEQUENCING PLAN PHASE 2

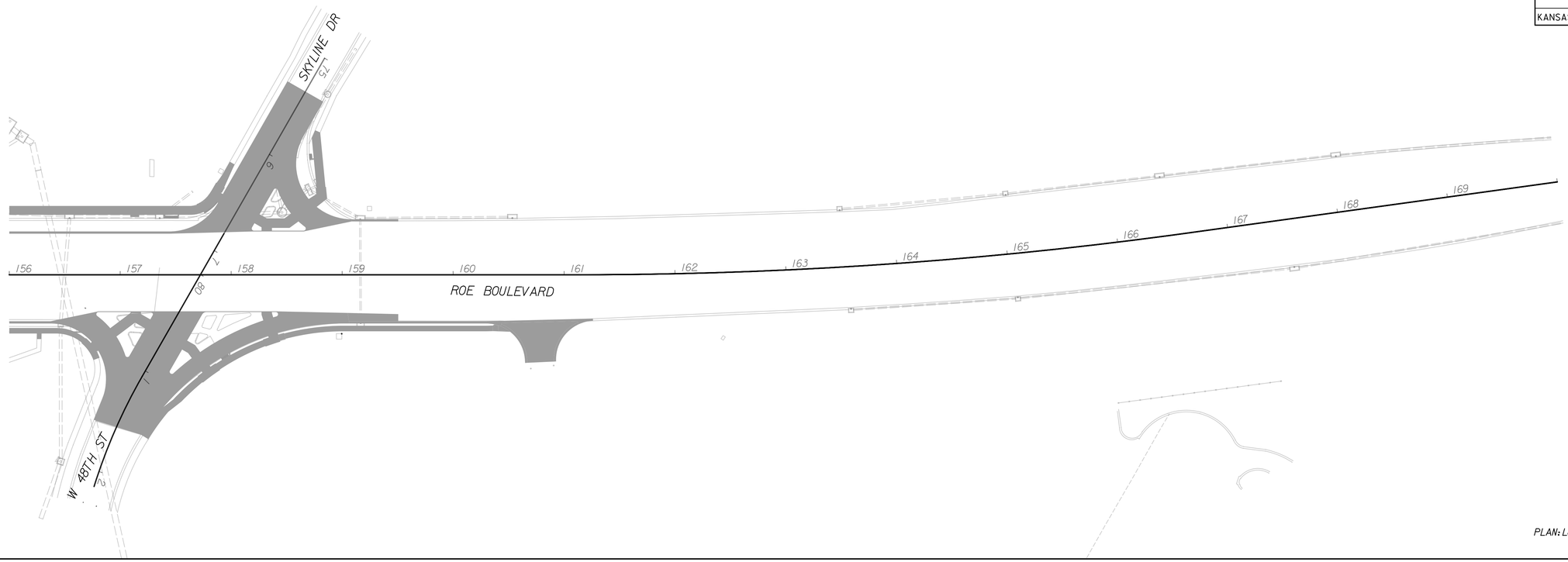
STA. 124+00 TO 156+00

Plotted : 25-APR-2019 13:00

Drawn By : lrosenbaum

File : 136681T5305.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 130 | 393 |




SCALE
50' 0 50' 100'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

LEGEND

Construction

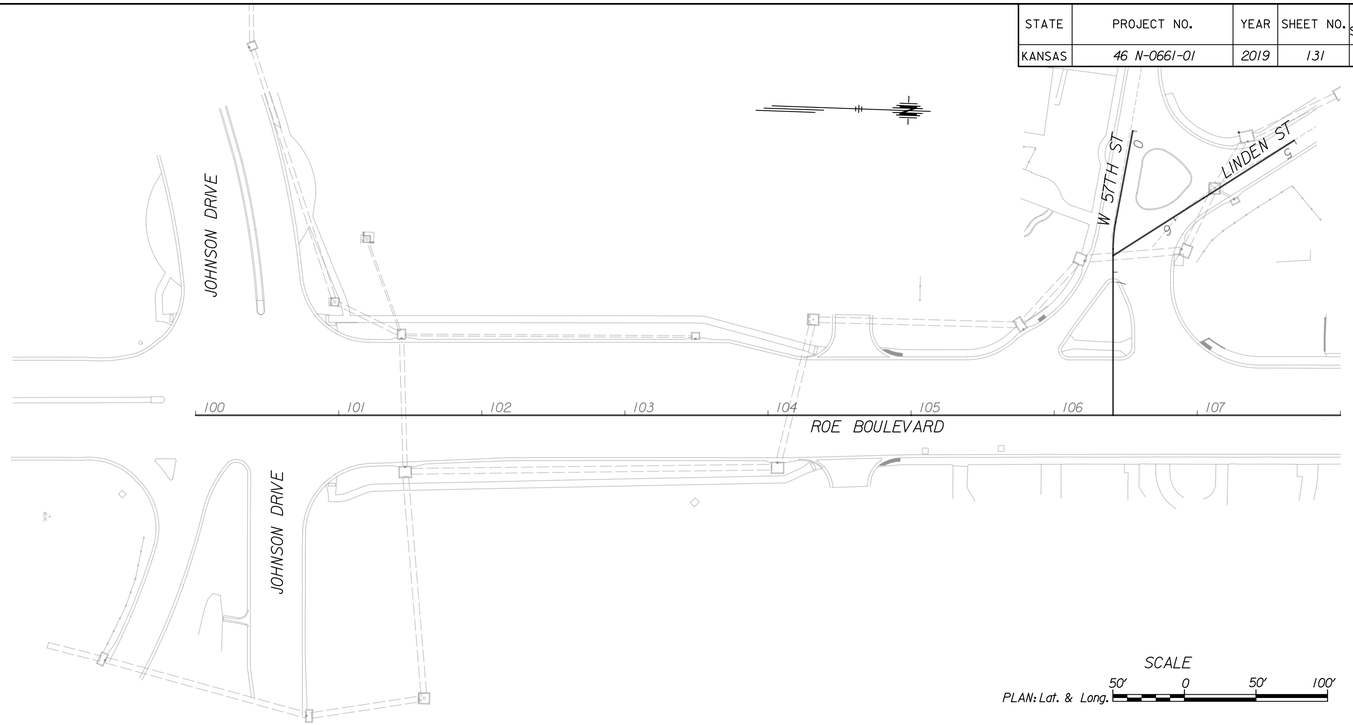
Eradication

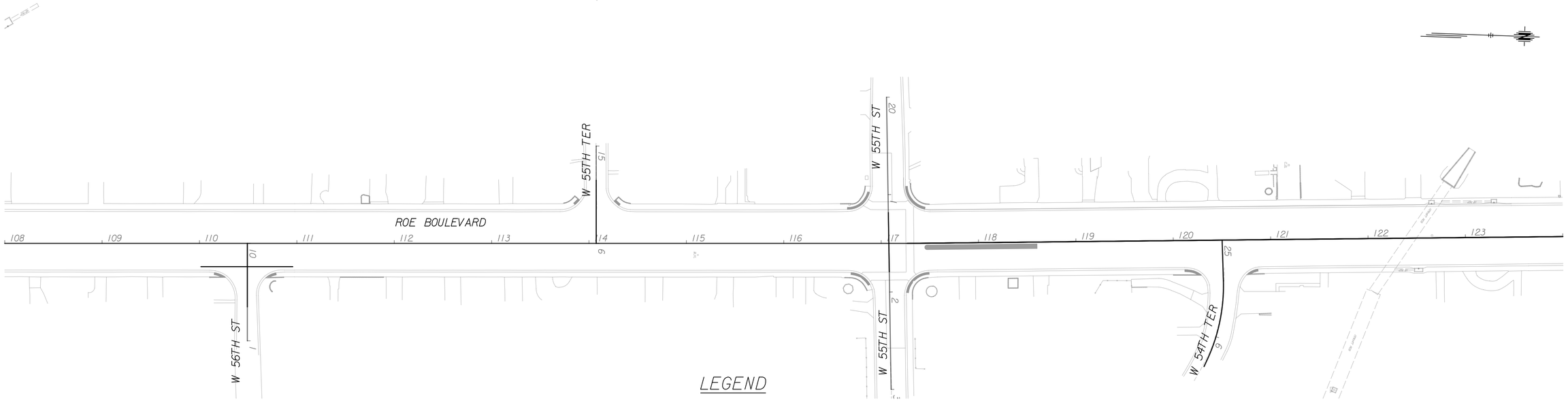
KANSAS DEPARTMENT OF TRANSPORTATION
ROE AVENUE
SEQUENCING PLAN PHASE 2
STA. 156+00 TO 170+00

Plotted : 25-APR-2019 13:00
Drawn By : lrosenbaum
File : 13668T5306.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 131 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




KANSAS DEPARTMENT OF TRANSPORTATION

ROE AVENUE

SEQUENCING PLAN PHASE 3

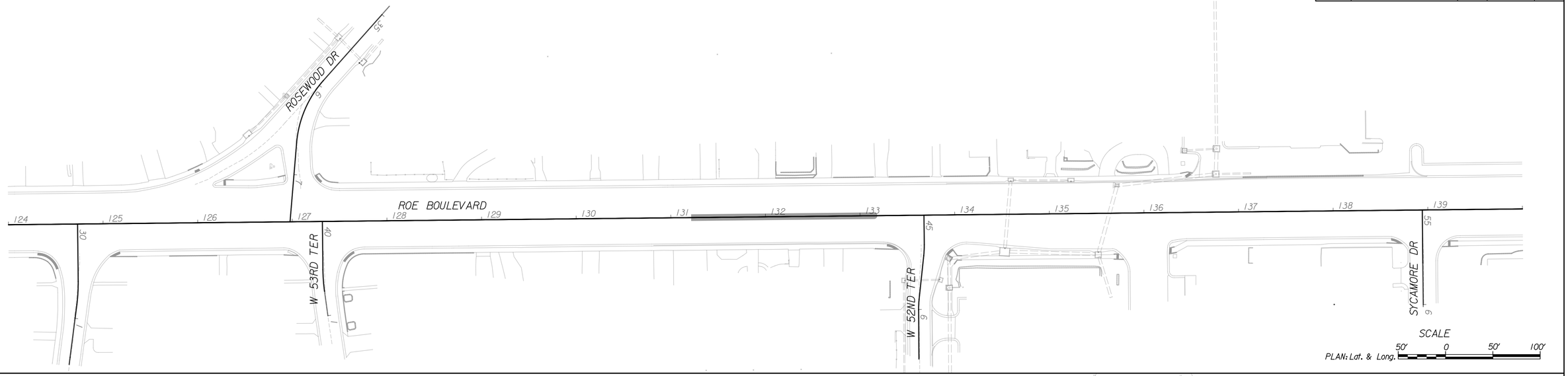
STA. 100+00 TO 124+00

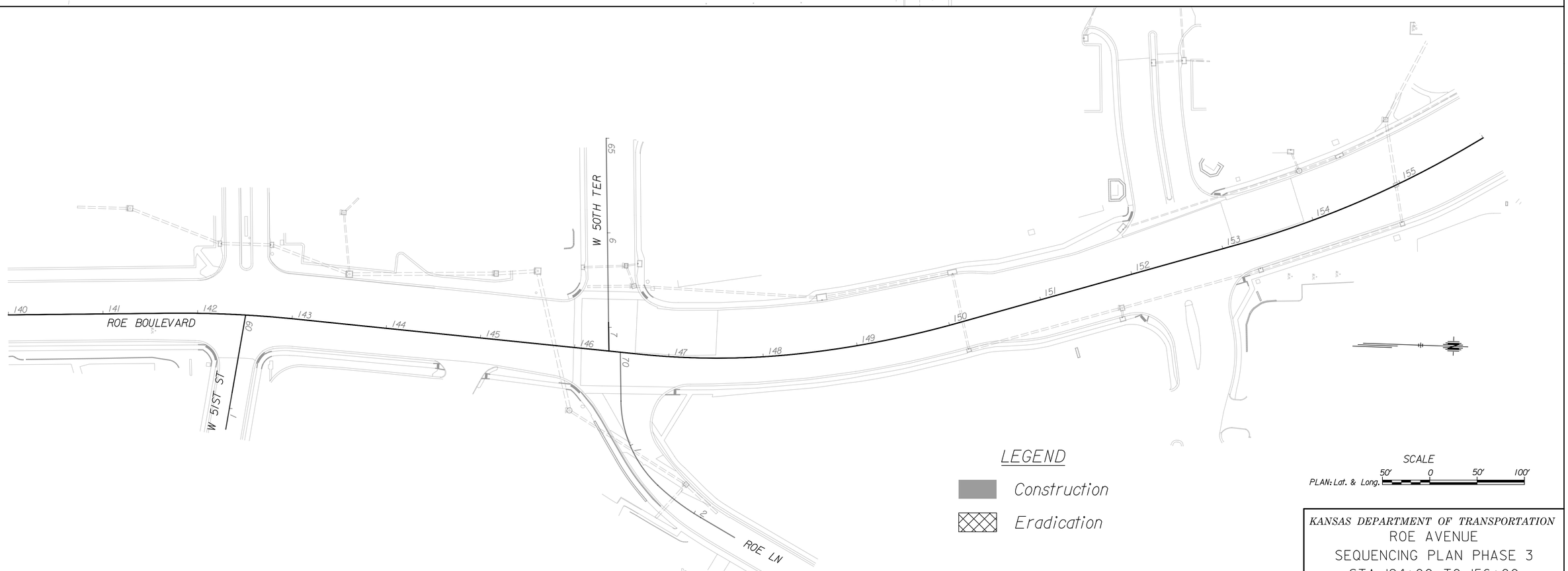
Plotted : 25-APR-2019 13:00

Drawn By : lrosenbaum

File : 13668T5307.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 132 | 393 |




KANSAS DEPARTMENT OF TRANSPORTATION

ROE AVENUE

SEQUENCING PLAN PHASE 3

STA. 124+00 TO 156+00

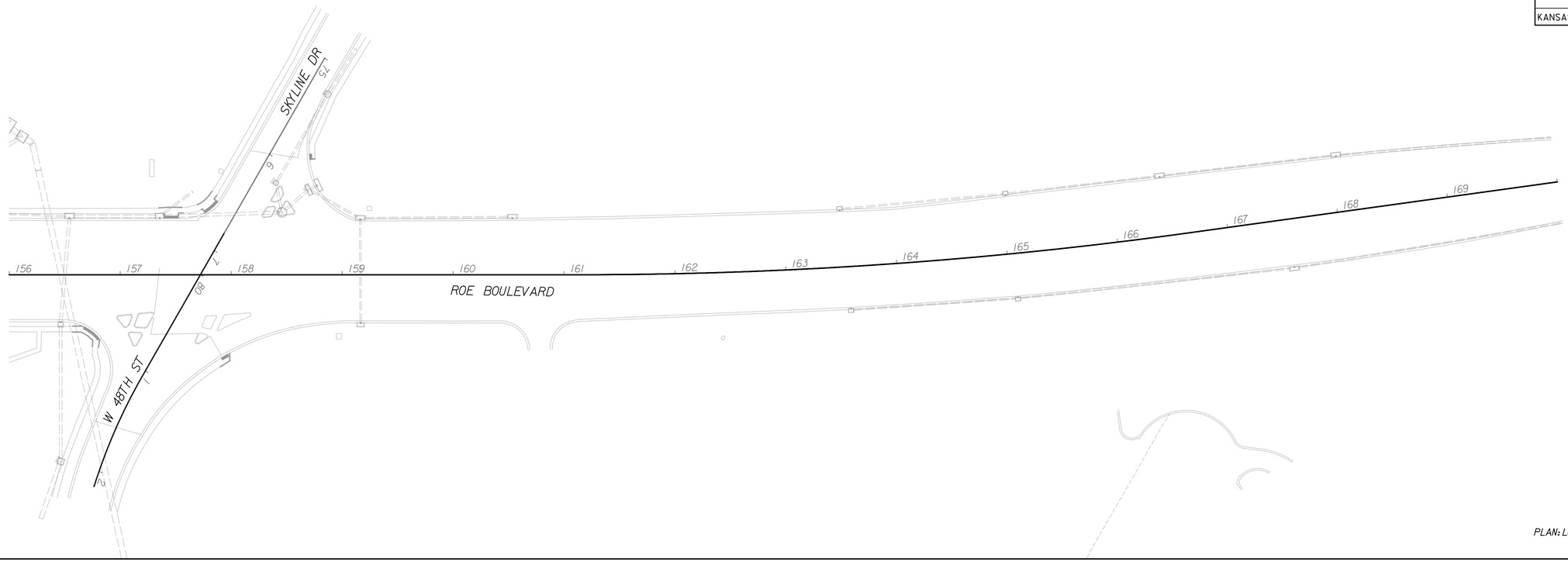
| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

Plotted : 25-APR-2019 13:00

Drawn By : lrosenbaum

File : 13668T5308.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 133 | 393 |




SCALE
50' 0 50' 100'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

LEGEND

Construction

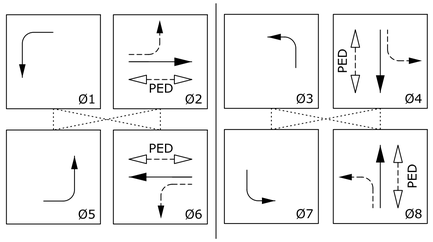
Eradication

KANSAS DEPARTMENT OF TRANSPORTATION
ROE AVENUE
SEQUENCING PLAN PHASE 3
STA. 156+00 TO 170+00

Plotted : 25-APR-2019 13:00
Drawn By : lrosenbaum
File : 13668T5309.dgn

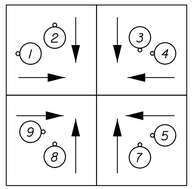
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 134 | 393 |

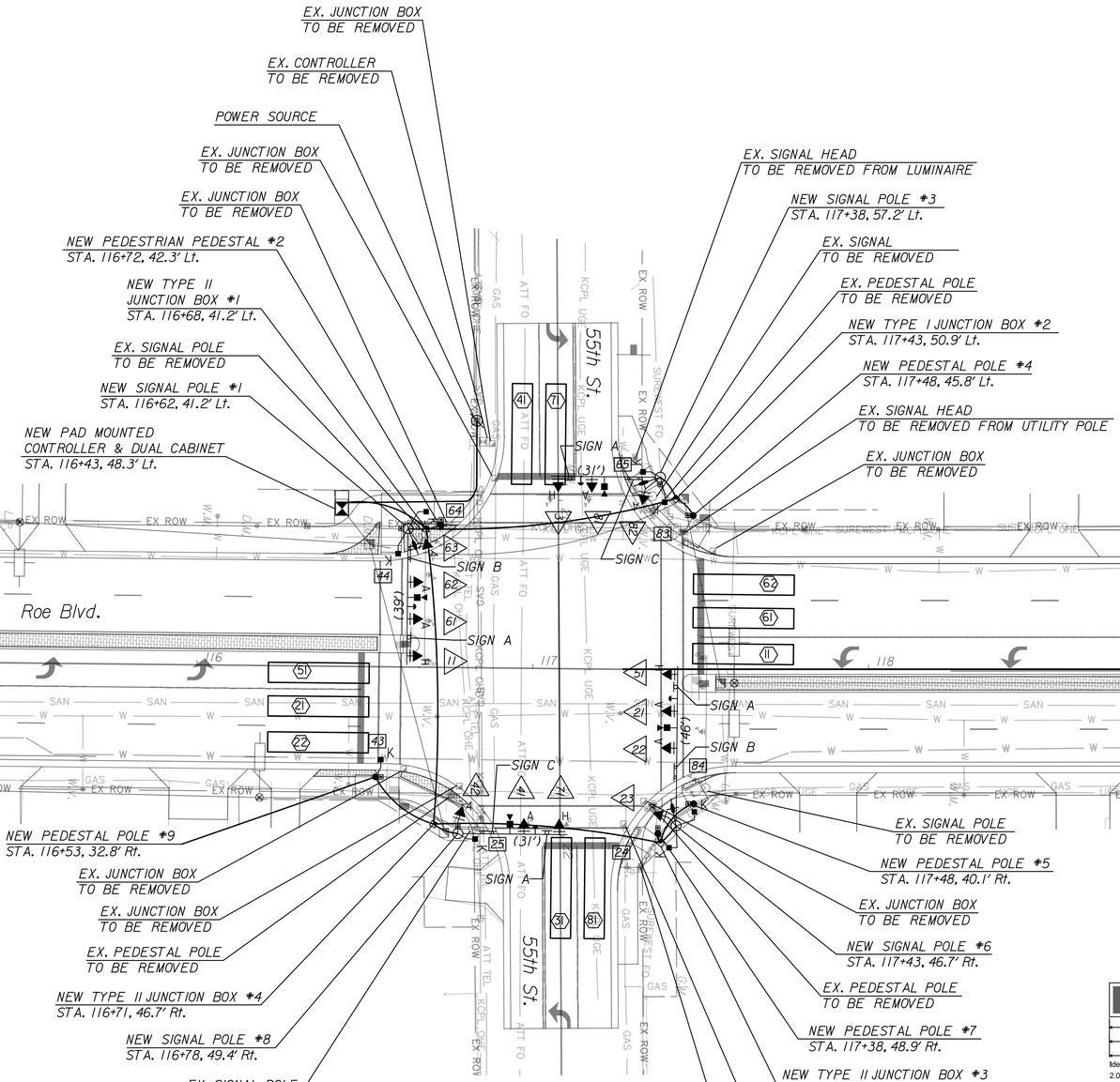
# PHASE DIAGRAM




NOTE: DOTTED LINES CONNECTING PHASES INDICATE PHASES THAT CAN OCCUR CONCURRENTLY.

## PEDESTRIAN PUSH BUTTON LAYOUT




## LEGEND

- LED LUMINAIRE AND POLE
- MAST ARM MOUNTED TRAFFIC SIGNAL W/BACK PLATE
- VERTICAL BRACKET MOUNTED TRAFFIC SIGNAL
- TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION
- PEDESTRIAN SIGNAL HEAD
- STREET NAME SIGN
- EMERGENCY VEHICLE DETECTOR
- TRAFFIC SIGNAL POLE
- CCTV CAMERA
- VIDEO DETECTION
- PAD MOUNTED CONTROLLER & DUAL CABINET
- JUNCTION BOX
- SERVICE BOX
- VIDEO DETECTION ZONE
- VEHICLE DETECTOR
- 3" CONDUIT
- 2" CONDUIT
- 1 ½" CONDUIT

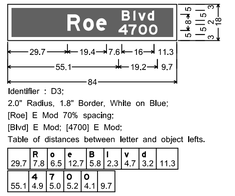
10' 0 10' 20'

SCALE

SIGN LOCATIONS

| SIGN | SIGN TYPE | POLE NUMBER | SPACING ON ARM* | LEGEND |
|---|---|---|---|---|
| A | KR10-12 | 1 | 32.3' | FYA |
| B | D3 | 1 | 7.3' | 55TH STREET |
| A | KR10-12 | 3 | 27.1' | FYA |
| C | D3 | 3 | 7.8' | ROE BLVD |
| A | KR10-12 | 6 | 41.3' | FYA |
| B | D3 | 6 | 16.0' | 55TH STREET |
| A | KR10-12 | 8 | 26.5' | FYA |
| C | D3 | 8 | 8.8' | ROE BLVD |

*To Center of Sign




Identifier : D3;
2.0" Radius, 1.8" Border, White on Blue;
[Roe] E Mod 70% spacing;
[Blvd] E Mod; [4700] E Mod;
Table of distances between letter and object lefts.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | R | o | e | B | l | v | d | | | | |
| 29.7 | 7.8 | 6.5 | 12.7 | 5.8 | 2.3 | 4.7 | 3.2 | 11.3 | | | |
| | 4 | 7 | 0 | 0 | | | | | | | |
| 55.1 | 4.9 | 5.0 | 5.2 | 4.1 | 9.7 | | | | | | |




Identifier : D3;
2.0" Radius, 1.8" Border, White on Blue;
[W 55th St] E Mod 70% spacing;
Table of distances between letter and object lefts.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | W | 5 | 5 | t | h | S | t | | |
| 27.8 | 16.4 | 7.8 | 7.8 | 5.8 | 13.1 | 7.5 | 4.0 | 5.8 | |

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING SIGNAL FOUNDATIONS A MINIMUM OF 24" BELOW FINISHED GRADE.
2. NEW SIGNAL CONSTRUCTION & EXISTING SIGNAL MODIFICATIONS SHALL BE COORDINATED WITH & APPROVED BY THE CITY OF ROELAND PARK TRAFFIC SIGNAL MAINTENANCE SUPERVISOR - NAME NAME (XXX) XXX-XXXX.
3. EXISTING SIGNAL SHALL REMAIN IN USE THROUGH CONSTRUCTION OR UNTIL THE NEW SIGNAL IS OPERATIONAL.
4. CONTRACTOR SHALL PROVIDE 30' MINIMUM OF SLACK WIRE AT THE SIGNAL CONTROLLER CABINET.
5. CONTRACTOR SHALL USE CITY APPROVED COLOR CODE FOR ALL SIGNAL WIRES.
6. CONTRACTOR SHALL INSTALL ALL SIGNAL HEADS ORIENTED HORIZONTALLY.

*NOTE: ALL STATIONS AND OFFSETS REFERENCE ROE BLVD ALIGNMENT*

*KANSAS DEPARTMENT OF TRANSPORTATION*

TRAFFIC SIGNAL PLAN

ROE BLVD. AND 55TH ST.

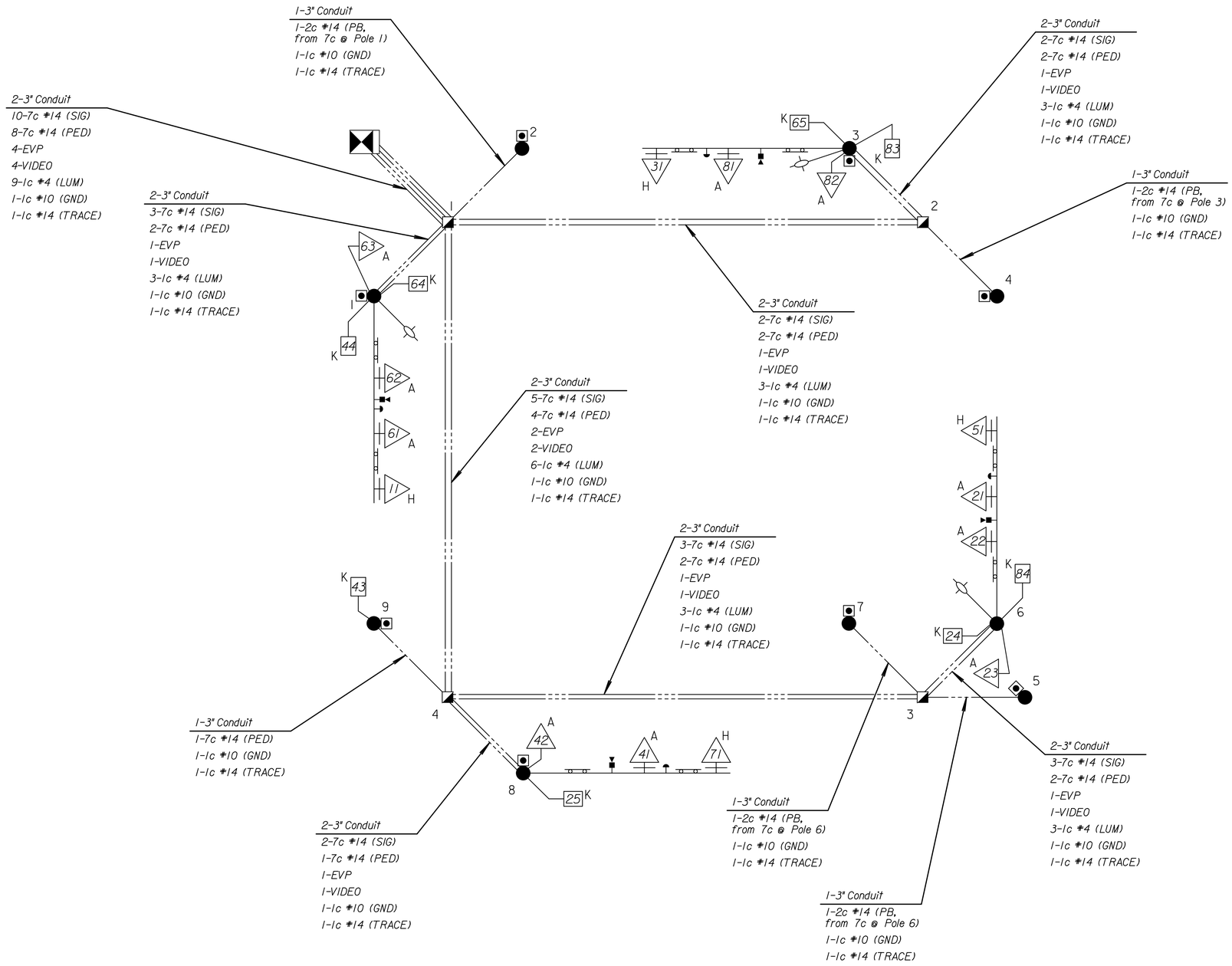
| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |

Plotted : 25-APR-2019 13:00

Drawn By : lrosenbaum
File : 13668T5000.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 135 | 393 |

NOT TO SCALE




## LEGEND

- TRAFFIC SIGNAL POLE WITH MAST ARM
- LED LUMINAIRE AND POLE
- TRAFFIC SIGNAL HEAD & TYPE DESIGNATION (W/HEAD NO.)
- PEDESTRIAN SIGNAL HEAD (W/HEAD NO.)
- STREET NAME SIGN
- EMERGENCY VEHICLE DETECTOR
- CCTV CAMERA
- VIDEO DETECTION
- PAD MOUNTED CONTROLLER
- SERVICE BOX
- JUNCTION BOX
- VEHICLE DETECTOR (W/LOOP NO.)
- 3" CONDUIT
- 2" CONDUIT
- 1 ½" CONDUIT

KANSAS DEPARTMENT OF TRANSPORTATION

# TRAFFIC SIGNAL PLAN
## WIRING DIAGRAM
## ROE BLVD. AND 55TH ST.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

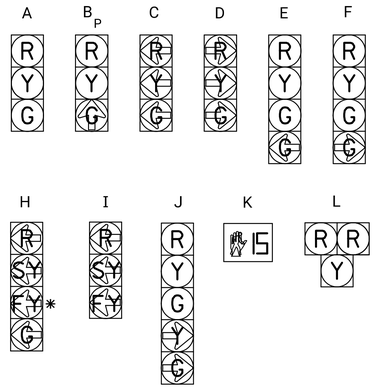
Plotted : 25-APR-2019 13:01

Drawn By : lrosenbaum
File : 13668T5000a.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 136 | 393 |

## CHART A SIGNAL SUMMARY

| Signal Face Arrangement | No. Sections (per Face) | Signal Mounting Type | Quantity |
|---|---|---|---|
| | | Mast Arm w / Backplate | |
| | | Mast Arm w / Backplate | |
| | | Mast Arm w / Backplate | |
| | | | |
| | | Side-of-Pole | |
| | | Side-of-Pole | |
| | | Side-of-POole | |



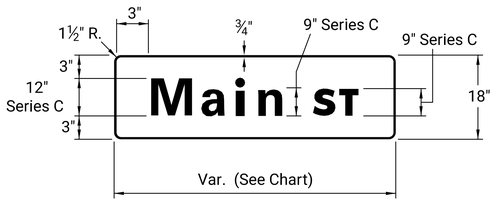

NOTES:
1) ✳ Shall not be displayed when operating in the protected only mode.
2) All lenses are L.E.D. unless otherwise noted.
3) Subscript "P" indicated programmed signals.
4) The traffic signal system shall be complete and the contractor shall furnish and install all equipment and materials necessary for the satisfactory operation of electrical apparatus and for complete operation of the traffic signal system whether specifically mentioned or not.

## CHART B TRAFFIC SIGNAL POLES

| Pole Height | Signal Arm Length | Signal Arm Mounting Height | No. of Signals on Arm | Signal Spacing | Luminaire Arm Length | Luminaire Mounting Height | Quantity |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## CHART C OVERHEAD STREET NAME SIGNS

| Sign | Legend | Length | Quantity |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |







KR10-12

## BILL OF MATERIALS

| Item | Quant. | Unit | Spec. No. | Note |
|---|---|---|---|---|
| Controller Unit | | Each | 3.2.2.2 | |
| Malfunction Management Unit | | Each | 3.2.2.3 | |
| Surge Protector | | Each | 3.2.2.4.3 | |
| Load Switch | | Each | 3.2.2.5.1 | |
| Flasher | | Each | 3.2.2.5.2 | |
| Flash Transfer Relay | | Each | 3.2.2.5.3 | |
| Detector, 2-Channel | | Each | 3.2.4.1 | |
| Detector, 4-Channel | | Each | 3.2.4.1 | |
| Pole Mounted Cabinet | | Each | 3.2.2.6.2 | |
| Pad Mounted Cabinet | | Each | 3.2.2.6.3 | |
| Bus Interface Unit | | Each | 3.2.2.7 | |
| | | | | |
| Battery Backup System (BBS/UPS) | | Each | 3.4.1 | |
| Video Detection Camera | | Each | 3.2.4.2 | Video Detection System (L.S.) |
| Radar Detection Device | | Each | 3.2.4.3 | Radar Detection System (L.S.) |
| Combination Video / Radar Detection Device | | Each | 3.2.4.2, 3.2.4.3 | Video / Radar Detection Sys (L.S.) |
| Traffic Signal Head | Chart A | Each | 3.2.5 | |
| Signal Head Mounting Bracket | Chart A | Each | 3.2.6 | |
| Retroreflective Backplate | Chart A | Each | 3.2.7 | |
| Vehicle Traffic Signal LED Modules | | Each | 3.2.5 | |
| Pedestrian Traffic Signal LED Modules | | Each | 3.2.5 | |
| | | | | |
| Pedestrian Pushbutton & Sign | | Each | 3.2.8, 3.2.9 | |
| APS Pushbutton System | | Each | 3.2.5.2.3 | |
| | | | | |
| Traffic Signal Pole | Chart B | Each | 3.2.10 | |
| Traffic Signal Pedestal Aluminum | | Each | 3.2.11 | |
| Terminal Block | | Each | 3.2.12 | |
| Junction Box | | Each | 3.2.13, 3.2.14 | |
| Service Box | | Each | 3.2.15 | |
| | | | | |
| Luminaire | | Each | 3.2.16 | |
| HPS Luminaire Lamp (150 or 250) Watt | | Each | 3.2.16.1 | |
| LED Luminaire | | Each | 3.2.17 | |
| Photocell | | Each | 3.2.18 | |
| Unfused Street Light Connector Kit | | Each | 3.2.19 | |
| Fused Street Light Connector Kit | | Each | 3.2.20 | |
| Overhead Street Name Sign | Chart C | Each | 3.2.21 | |
| R10-10 Sign (30" X 36") | | Each | 3.2.22 | |
| KR10-12 Sign (30" X 36") | | Each | 3.2.22 | |
| Blank Out Sign | | Each | 3.2.23 | |
| Entrance Head | | Each | 3.2.24 | |
| Service Enclosure, Amp. | | Each | 3.2.25 | |
| Circuit Breaker, Traffic Signal, Amp. | | Each | 3.2.26 | |
| Circuit Breaker, Luminaire, Amp. | | Each | 3.2.26 | |
| | | | | |
| Ground Rod & Clamp | | Each | 3.2.27, 3.2.28 | |
| Service Wire No. __ AWG 1/C | | Lin Ft | 3.2.29 | |
| Lighting Distribution Wire No. __ AWG 1/C | | Lin Ft | 3.2.30 | |
| Pole & Bracket Wire No. 10 AWG 1/C | | Lin Ft | 3.2.31 | |
| Ground Wire No. 6 AWG 1/C | | Lin Ft | 3.2.32 | |
| | | | | |
| Mulit-Conductor Cable No. 14 AWG 5/C | | Lin Ft | 3.2.33 | |
| Multi-Conductor Cable No. 14 AWG /C | | Lin Ft | 3.2.33 | |
| Multi-Conductor Cable No. 14 AWG /C | | Lin Ft | 3.2.33 | |
| | | | | |
| Shielded Detector Lead-in Cable No. 14 AWG 2/C | | Lin Ft | 3.2.34 | |
| Detector Loop Wire No. 14 AWG 1/C | | Lin Ft | 3.2.35 | |
| Loop Sealant | As Req'd | | 3.2.36 | |
| Pre-Formed Loop | | Each | 3.2.37 | |
| | | | | |
| Conduit, 1" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 1-1/2" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 2" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 3" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 4" & Fittings | | Lin Ft | 3.2.38 | |

## BID ITEM

| Item | Unit | Quantity |
|---|---|---|
| Traffic Signal | L.S. | L.S. |
| Video Detection System | L.S. | L.S. |
| Radar Detection System | L.S. | L.S. |
| Video / Radar Detection System | L.S. | L.S. |

-Quantities for Information Only-

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 3 | 8/1/18 | Added Video/Radar Detection to Bid Item | DJN | CPA |
| 2 | 10/25/15 | Remove Doghouse signal added HAWK, FY & KR | CPA | BDG |
| 1 | 12/24/14 | Updated R10 sizes chg. H head to I head | CPA | BDG |

KANSAS DEPARTMENT OF TRANSPORTATION

NEMA SYSTEM
TRAFFIC SIGNAL QUANTITIES SHEET

TE130A

| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 8/30/2018 | APP'D | Carla P. Anderson | |
| DESIGNED | D.J.N. | DETAILED | D.J.N. | QUANTITIES | TRACED |
| DESIGN CK. | C.P.A. | DETAIL CK. | C.P.A. | QUAN. CK. | TRACE CK. |

KDOT Graphics Certified 09-10-2018

Sh. No. 136

KDOT Graphics Certified

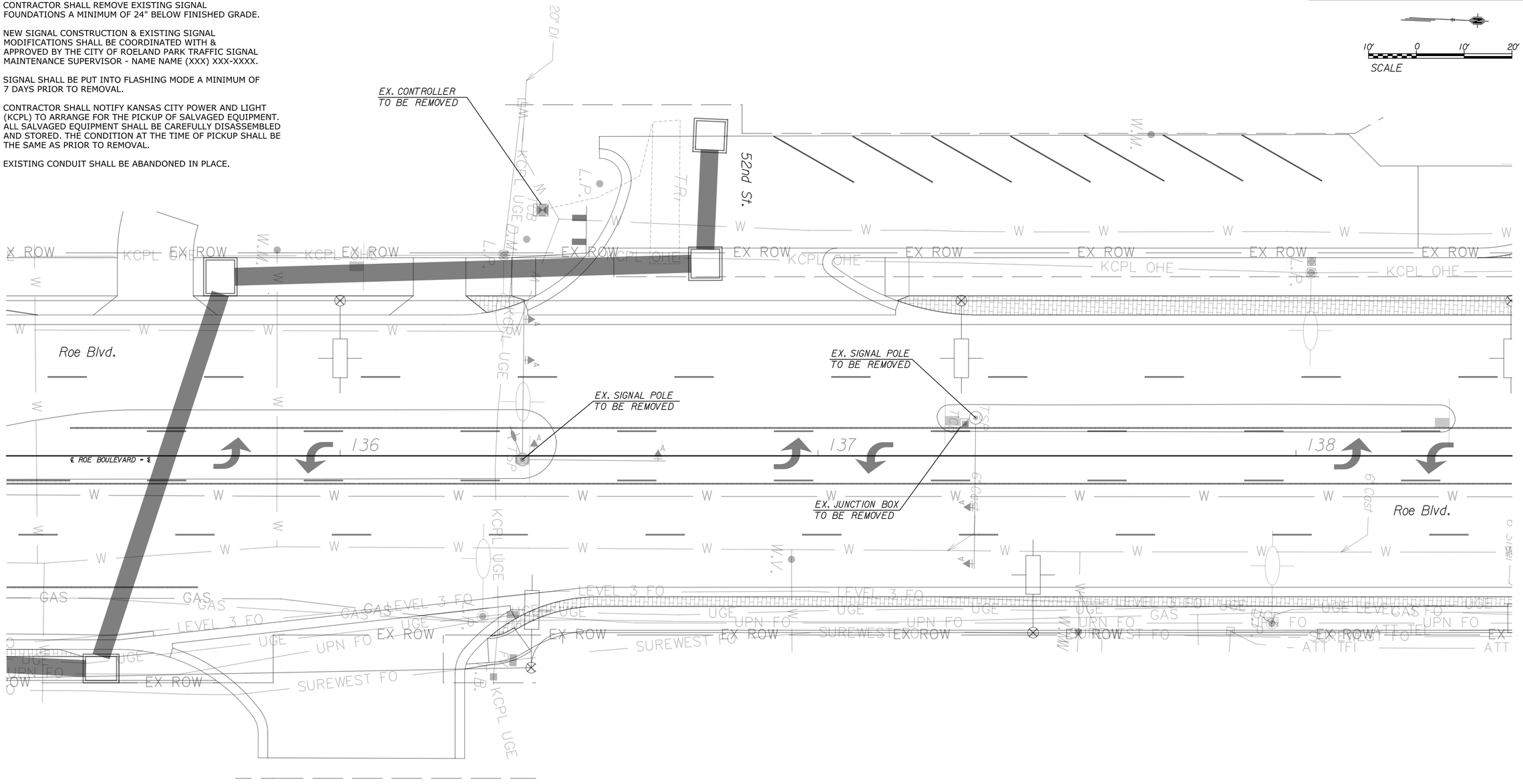
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Drawn By: lrosenbaum
File : 13668T5000b.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 137 | 393 |

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING SIGNAL FOUNDATIONS A MINIMUM OF 24" BELOW FINISHED GRADE.
2. NEW SIGNAL CONSTRUCTION & EXISTING SIGNAL MODIFICATIONS SHALL BE COORDINATED WITH & APPROVED BY THE CITY OF ROELAND PARK TRAFFIC SIGNAL MAINTENANCE SUPERVISOR - NAME NAME (XXX) XXX-XXXX.
3. SIGNAL SHALL BE PUT INTO FLASHING MODE A MINIMUM OF 7 DAYS PRIOR TO REMOVAL.
4. CONTRACTOR SHALL NOTIFY KANSAS CITY POWER AND LIGHT (KCPL) TO ARRANGE FOR THE PICKUP OF SALVAGED EQUIPMENT. ALL SALVAGED EQUIPMENT SHALL BE CAREFULLY DISASSEMBLED AND STORED. THE CONDITION AT THE TIME OF PICKUP SHALL BE THE SAME AS PRIOR TO REMOVAL.
5. EXISTING CONDUIT SHALL BE ABANDONED IN PLACE.

10' 0 10' 20'
SCALE




LEGEND

- LED LUMINAIRE AND POLE
- MAST ARM MOUNTED TRAFFIC SIGNAL W/BACK PLATE
- VERTICAL BRACKET MOUNTED TRAFFIC SIGNAL
- TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION
- PEDESTRIAN SIGNAL HEAD
- STREET NAME SIGN
- EMERGENCY VEHICLE DETECTOR
- TRAFFIC SIGNAL POLE
- CCTV CAMERA
- VIDEO DETECTION
- PAD MOUNTED CONTROLLER & DUAL CABINET
- JUNCTION BOX
- SERVICE BOX
- VIDEO DETECTION ZONE
- (6) VEHICLE DETECTOR
- 3" CONDUIT
- 2" CONDUIT
- 1 ½" CONDUIT

NOTE: ALL STATIONS AND OFFSETS REFERENCE ROE BLVD ALIGNMENT

KANSAS DEPARTMENT OF TRANSPORTATION

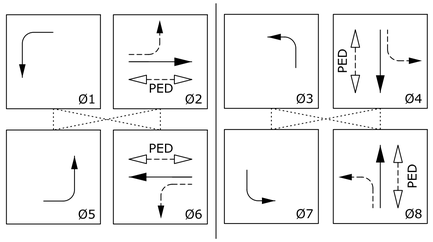
# TRAFFIC SIGNAL PLAN
# ROE BLVD. AND 52ND ST.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:01
Drawn By : lrosenbaum
File : 136681T5001.dgn

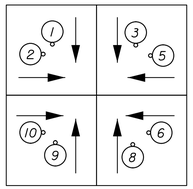
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 138 | 393 |

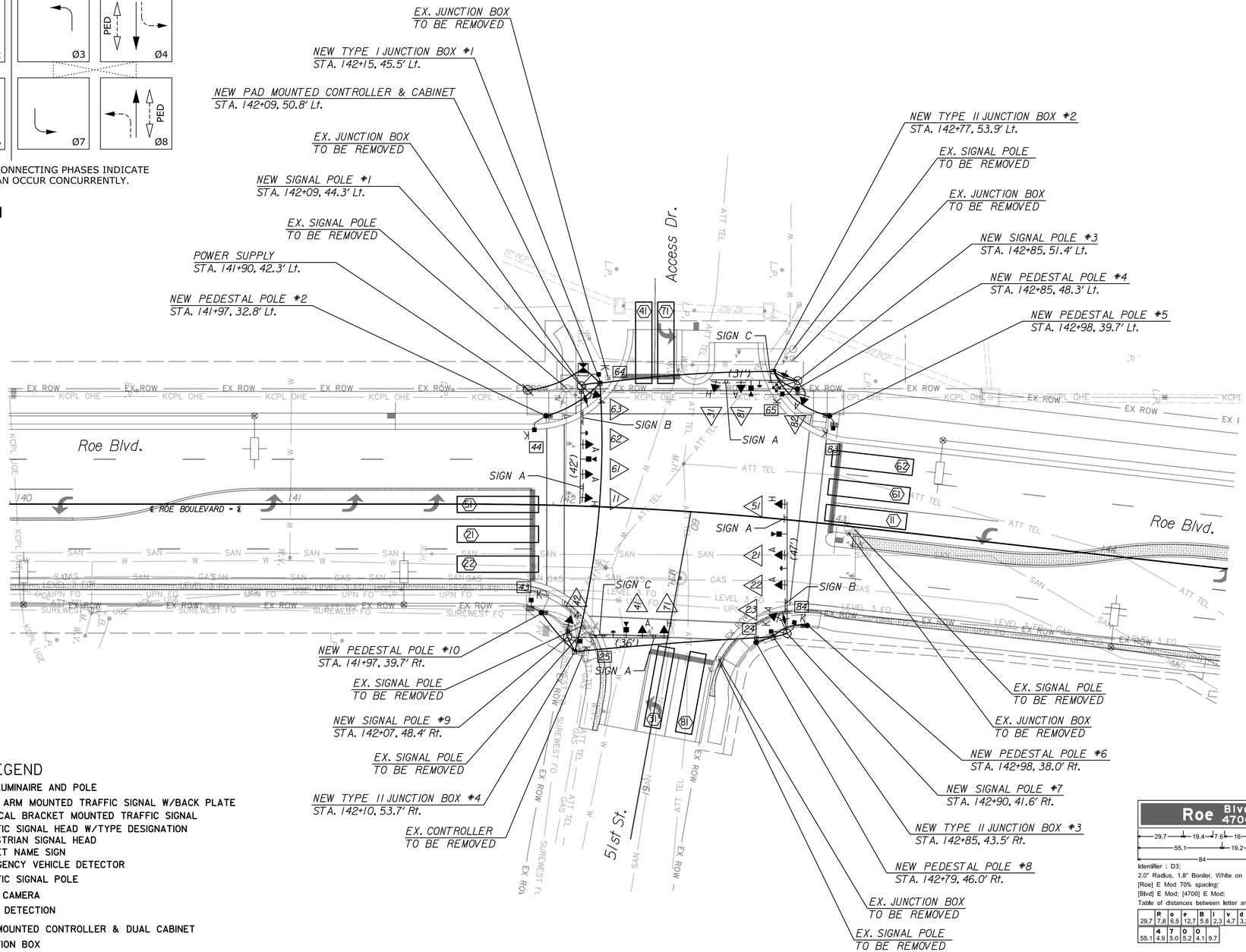
# PHASE DIAGRAM

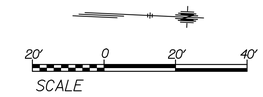



NOTE: DOTTED LINES CONNECTING PHASES INDICATE PHASES THAT CAN OCCUR CONCURRENTLY.

## PEDESTRIAN PUSH BUTTON LAYOUT



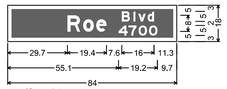

SIGN LOCATIONS

| SIGN | SIGN TYPE | POLE NUMBER | SPACING ON ARM* | LEGEND |
|---|---|---|---|---|
| A | KR10-12 | 1 | 37.4' | FYA |
| B | D3 | 1 | 11.8' | 51ST STREET |
| A | KR10-12 | 3 | 27.1' | FYA |
| C | D3 | 3 | 7.8' | ROE BLVD |
| A | KR10-12 | 7 | 41.3' | FYA |
| B | D3 | 7 | 16.0' | 51ST STREET |
| A | KR10-12 | 9 | 26.5' | FYA |
| C | D3 | 9 | 8.8' | ROE BLVD |

*To Center of Sign

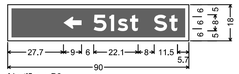
## LEGEND

- LED LUMINAIRE AND POLE
- MAST ARM MOUNTED TRAFFIC SIGNAL W/BACK PLATE
- VERTICAL BRACKET MOUNTED TRAFFIC SIGNAL
- TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION
- PEDESTRIAN SIGNAL HEAD
- STREET NAME SIGN
- EMERGENCY VEHICLE DETECTOR
- TRAFFIC SIGNAL POLE
- CCTV CAMERA
- VIDEO DETECTION
- PAD MOUNTED CONTROLLER & DUAL CABINET
- JUNCTION BOX
- SERVICE BOX
- VIDEO DETECTION ZONE
- VEHICLE DETECTOR
- 3" CONDUIT
- 2" CONDUIT
- 1 ½" CONDUIT




Identifier : D3;
2.0" Radius, 1.8" Border, White on Blue;
[Roe] E Mod 70% spacing;
[Blvd] E Mod: [4700] E Mod:
Table of distances between letter and object lefts.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 29.7 | R | 7.8 | o | 6.5 | e | 12.7 | B | 5.8 | l | 2.3 | v | 4.7 | d | 3.2 | 11.3 |
| 55.1 | 4 | 4.9 | 7 | 5.0 | 0 | 5.2 | 0 | 4.1 | 9.7 | | | | | | |




Identifier : D3:
2.0" Radius, 1.8" Border, White on Blue;
Standard Arrow Custom 9.0" X 6.0" 180°:
[51st St] E Mod 70% spacing:
Table of distances between letter and object lefts.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27.7 | 15.0 | 5 | 7.8 | l | 4.1 | s | 6.2 | t | 12.0 | 5 | 7.5 | t | 4.0 | 5.7 |
| | | | | | | | | | | | | | | |

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING SIGNAL FOUNDATIONS A MINIMUM OF 24" BELOW FINISHED GRADE.
2. NEW SIGNAL CONSTRUCTION & EXISTING SIGNAL MODIFICATIONS SHALL BE COORDINATED WITH & APPROVED BY THE CITY OF ROELAND PARK TRAFFIC SIGNAL MAINTENANCE SUPERVISOR - NAME NAME (XXX) XXX-XXXX.
3. EXISTING SIGNAL SHALL REMAIN IN USE THROUGH CONSTRUCTION OR UNTIL THE NEW SIGNAL IS OPERATIONAL.
4. CONTRACTOR SHALL PROVIDE 30' MINIMUM OF SLACK WIRE AT THE SIGNAL CONTROLLER CABINET.
5. CONTRACTOR SHALL USE CITY APPROVED COLOR CODE FOR ALL SIGNAL WIRES.
6. CONTRACTOR SHALL INSTALL ALL SIGNAL HEADS ORIENTED HORIZONTALLY.

NOTE: ALL STATIONS AND OFFSETS REFERENCE ROE BLVD ALIGNMENT

*KANSAS DEPARTMENT OF TRANSPORTATION*

TRAFFIC SIGNAL PLAN

ROE BLVD. AND 51ST STREET

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:01

Drawn By : lrosenbaum
File : 13668T5002.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 139 | 393 |

NOT TO SCALE

ROE BOULEVARD

51ST STREET

1-3" Conduit
1-7c #14 (PED)
1-1c #10 (GND)
1-1c #14 (TRACE)

2-3" Conduit
10-7c #14 (SIG)
8-7c #14 (PED)
4-EVP
4-VIDEO
1-CCTV
12-1c #4 (LUM)
1-1c #10 (GND)
1-1c #14 (TRACE)

2-3" Conduit
2-7c #14 (SIG)
1-7c #14 (PED)
1-EVP
1-VIDEO
1-CCTV
3-1c #4 (LUM)
1-1c #10 (GND)
1-1c #14 (TRACE)

1-3" Conduit
1-2c #14 (PB, from 7c @ Pole 3)
1-1c #10 (GND)
1-1c #14 (TRACE)

2-3" Conduit
3-7c #14 (SIG)
1-7c #14 (PED)
1-EVP
1-VIDEO
3-1c #4 (LUM)
1-1c #10 (GND)
1-1c #14 (TRACE)

1-3" Conduit
1-7c #14 (PED)
1-1c #10 (GND)
1-1c #14 (TRACE)

2-3" Conduit
2-7c #14 (SIG)
2-7c #14 (PED)
1-EVP
1-VIDEO
1-CCTV
3-1c #4 (LUM)
1-1c #10 (GND)
1-1c #14 (TRACE)

2-3" Conduit
5-7c #14 (SIG)
4-7c #14 (PED)
2-EVP
2-VIDEO
6-1c #4 (LUM)
1-1c #10 (GND)
1-1c #14 (TRACE)

2-3" Conduit
3-7c #14 (SIG)
2-7c #14 (PED)
1-EVP
1-VIDEO
3-1c #4 (LUM)
1-1c #10 (GND)
1-1c #14 (TRACE)

1-3" Conduit
1-7c #14 (PED)
1-1c #10 (GND)
1-1c #14 (TRACE)

2-3" Conduit
2-7c #14 (SIG)
2-7c #14 (PED)
1-EVP
1-VIDEO
1-CCTV
3-1c #4 (LUM)
1-1c #10 (GND)
1-1c #14 (TRACE)

1-3" Conduit
1-2c #14 (PB, from 7c @ Pole 7)
1-1c #10 (GND)
1-1c #14 (TRACE)

2-3" Conduit
2-7c #14 (SIG)
1-7c #14 (PED)
1-EVP
1-VIDEO
3-1c #4 (LUM)
1-1c #10 (GND)
1-1c #14 (TRACE)

1-3" Conduit
1-2c #14 (PB, from 7c @ Pole 7)
1-1c #10 (GND)
1-1c #14 (TRACE)

2-3" Conduit
3-7c #14 (SIG)
2-7c #14 (PED)
1-EVP
1-VIDEO
3-1c #4 (LUM)
1-1c #10 (GND)
1-1c #14 (TRACE)

## LEGEND

- TRAFFIC SIGNAL POLE WITH MAST ARM
- LED LUMINAIRE AND POLE
- TRAFFIC SIGNAL HEAD & TYPE DESIGNATION (W/HEAD NO.)
- PEDESTRIAN SIGNAL HEAD (W/HEAD NO.)
- STREET NAME SIGN
- EMERGENCY VEHICLE DETECTOR
- CCTV CAMERA
- VIDEO DETECTION
- PAD MOUNTED CONTROLLER
- SERVICE BOX
- JUNCTION BOX
- VEHICLE DETECTOR (W/LOOP NO.)
- 3" CONDUIT
- 2" CONDUIT
- 1 ½" CONDUIT

KANSAS DEPARTMENT OF TRANSPORTATION

# TRAFFIC SIGNAL PLAN
## WIRING DIAGRAM
## ROE BLVD. AND 51ST STREET

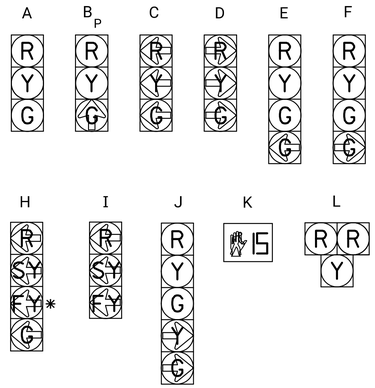
| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:01

Drawn By : lrosenbaum
File : 13668T5002a.dgn

## CHART A SIGNAL SUMMARY

| Signal Face Arrangement | No. Sections (per Face) | Signal Mounting Type | Quantity |
|---|---|---|---|
| | | Mast Arm w / Backplate | |
| | | Mast Arm w / Backplate | |
| | | Mast Arm w / Backplate | |
| | | | |
| | | Side-of-Pole | |
| | | Side-of-Pole | |
| | | Side-of-POole | |



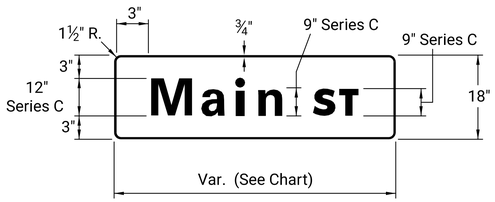

NOTES:
1) ✳ Shall not be displayed when operating in the protected only mode.
2) All lenses are L.E.D. unless otherwise noted.
3) Subscript "P" indicated programmed signals.
4) The traffic signal system shall be complete and the contractor shall furnish and install all equipment and materials necessary for the satisfactory operation of electrical apparatus and for complete operation of the traffic signal system whether specifically mentioned or not.

## CHART B TRAFFIC SIGNAL POLES

| Pole Height | Signal Arm Length | Signal Arm Mounting Height | No. of Signals on Arm | Signal Spacing | Luminaire Arm Length | Luminaire Mounting Height | Quantity |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## CHART C OVERHEAD STREET NAME SIGNS

| Sign | Legend | Length | Quantity |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |







KR10-12

## BILL OF MATERIALS

| Item | Quant. | Unit | Spec. No. | Note |
|---|---|---|---|---|
| Controller Unit | | Each | 3.2.2.2 | |
| Malfunction Management Unit | | Each | 3.2.2.3 | |
| Surge Protector | | Each | 3.2.2.4.3 | |
| Load Switch | | Each | 3.2.2.5.1 | |
| Flasher | | Each | 3.2.2.5.2 | |
| Flash Transfer Relay | | Each | 3.2.2.5.3 | |
| Detector, 2-Channel | | Each | 3.2.4.1 | |
| Detector, 4-Channel | | Each | 3.2.4.1 | |
| Pole Mounted Cabinet | | Each | 3.2.2.6.2 | |
| Pad Mounted Cabinet | | Each | 3.2.2.6.3 | |
| Bus Interface Unit | | Each | 3.2.2.7 | |
| | | | | |
| Battery Backup System (BBS/UPS) | | Each | 3.4.1 | |
| Video Detection Camera | | Each | 3.2.4.2 | Video Detection System (L.S.) |
| Radar Detection Device | | Each | 3.2.4.3 | Radar Detection System (L.S.) |
| Combination Video / Radar Detection Device | | Each | 3.2.4.2, 3.2.4.3 | Video / Radar Detection Sys (L.S.) |
| Traffic Signal Head | Chart A | Each | 3.2.5 | |
| Signal Head Mounting Bracket | Chart A | Each | 3.2.6 | |
| Retroreflective Backplate | Chart A | Each | 3.2.7 | |
| Vehicle Traffic Signal LED Modules | | Each | 3.2.5 | |
| Pedestrian Traffic Signal LED Modules | | Each | 3.2.5 | |
| | | | | |
| Pedestrian Pushbutton & Sign | | Each | 3.2.8, 3.2.9 | |
| APS Pushbutton System | | Each | 3.2.5.2.3 | |
| | | | | |
| Traffic Signal Pole | Chart B | Each | 3.2.10 | |
| Traffic Signal Pedestal Aluminum | | Each | 3.2.11 | |
| Terminal Block | | Each | 3.2.12 | |
| Junction Box | | Each | 3.2.13, 3.2.14 | |
| Service Box | | Each | 3.2.15 | |
| | | | | |
| Luminaire | | Each | 3.2.16 | |
| HPS Luminaire Lamp (150 or 250) Watt | | Each | 3.2.16.1 | |
| LED Luminaire | | Each | 3.2.17 | |
| Photocell | | Each | 3.2.18 | |
| Unfused Street Light Connector Kit | | Each | 3.2.19 | |
| Fused Street Light Connector Kit | | Each | 3.2.20 | |
| Overhead Street Name Sign | Chart C | Each | 3.2.21 | |
| R10-10 Sign (30" X 36") | | Each | 3.2.22 | |
| KR10-12 Sign (30" X 36") | | Each | 3.2.22 | |
| Blank Out Sign | | Each | 3.2.23 | |
| Entrance Head | | Each | 3.2.24 | |
| Service Enclosure, Amp. | | Each | 3.2.25 | |
| Circuit Breaker, Traffic Signal, Amp. | | Each | 3.2.26 | |
| Circuit Breaker, Luminaire, Amp. | | Each | 3.2.26 | |
| | | | | |
| Ground Rod & Clamp | | Each | 3.2.27, 3.2.28 | |
| Service Wire No. __ AWG 1/C | | Lin Ft | 3.2.29 | |
| Lighting Distribution Wire No. __ AWG 1/C | | Lin Ft | 3.2.30 | |
| Pole & Bracket Wire No. 10 AWG 1/C | | Lin Ft | 3.2.31 | |
| Ground Wire No. 6 AWG 1/C | | Lin Ft | 3.2.32 | |
| | | | | |
| Mulit-Conductor Cable No. 14 AWG 5/C | | Lin Ft | 3.2.33 | |
| Multi-Conductor Cable No. 14 AWG /C | | Lin Ft | 3.2.33 | |
| Multi-Conductor Cable No. 14 AWG /C | | Lin Ft | 3.2.33 | |
| | | | | |
| Shielded Detector Lead-in Cable No. 14 AWG 2/C | | Lin Ft | 3.2.34 | |
| Detector Loop Wire No. 14 AWG 1/C | | Lin Ft | 3.2.35 | |
| Loop Sealant | As Req'd | | 3.2.36 | |
| Pre-Formed Loop | | Each | 3.2.37 | |
| | | | | |
| Conduit, 1" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 1-1/2" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 2" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 3" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 4" & Fittings | | Lin Ft | 3.2.38 | |

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 140 | 393 |

## BID ITEM

| Item | Unit | Quantity |
|---|---|---|
| Traffic Signal | L.S. | L.S. |
| Video Detection System | L.S. | L.S. |
| Radar Detection System | L.S. | L.S. |
| Video / Radar Detection System | L.S. | L.S. |

-Quantities for Information Only-

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 3 | 8/1/18 | Added Video/Radar Detection to Bid Item | DJN | CPA |
| 2 | 10/25/15 | Remove Doghouse signal added HAWK, FY & KR | CPA | BDG |
| 1 | 12/24/14 | Updated R10 sizes chg. H head to I head | CPA | BDG |

KANSAS DEPARTMENT OF TRANSPORTATION

NEMA SYSTEM
TRAFFIC SIGNAL QUANTITIES SHEET

TE130A

| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 8/30/2018 | APP'D | Carla P. Anderson | |
| DESIGNED | D.J.N. | DETAILED | D.J.N. | QUANTITIES | TRACED |
| DESIGN CK. | C.P.A. | DETAIL CK. | C.P.A. | QUAN. CK. | TRACE CK. |

KDOT Graphics Certified 09-10-2018

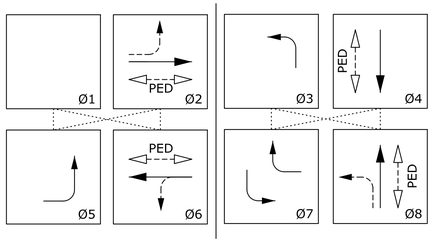
Sh. No. 140

KDOT Graphics Certified

Plotted :25-APR-2019 13:01
Drawn By: lrosenbaum
File : 13668T5002b.dgn

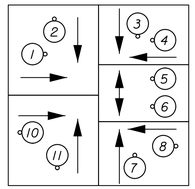
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 141 | 393 |

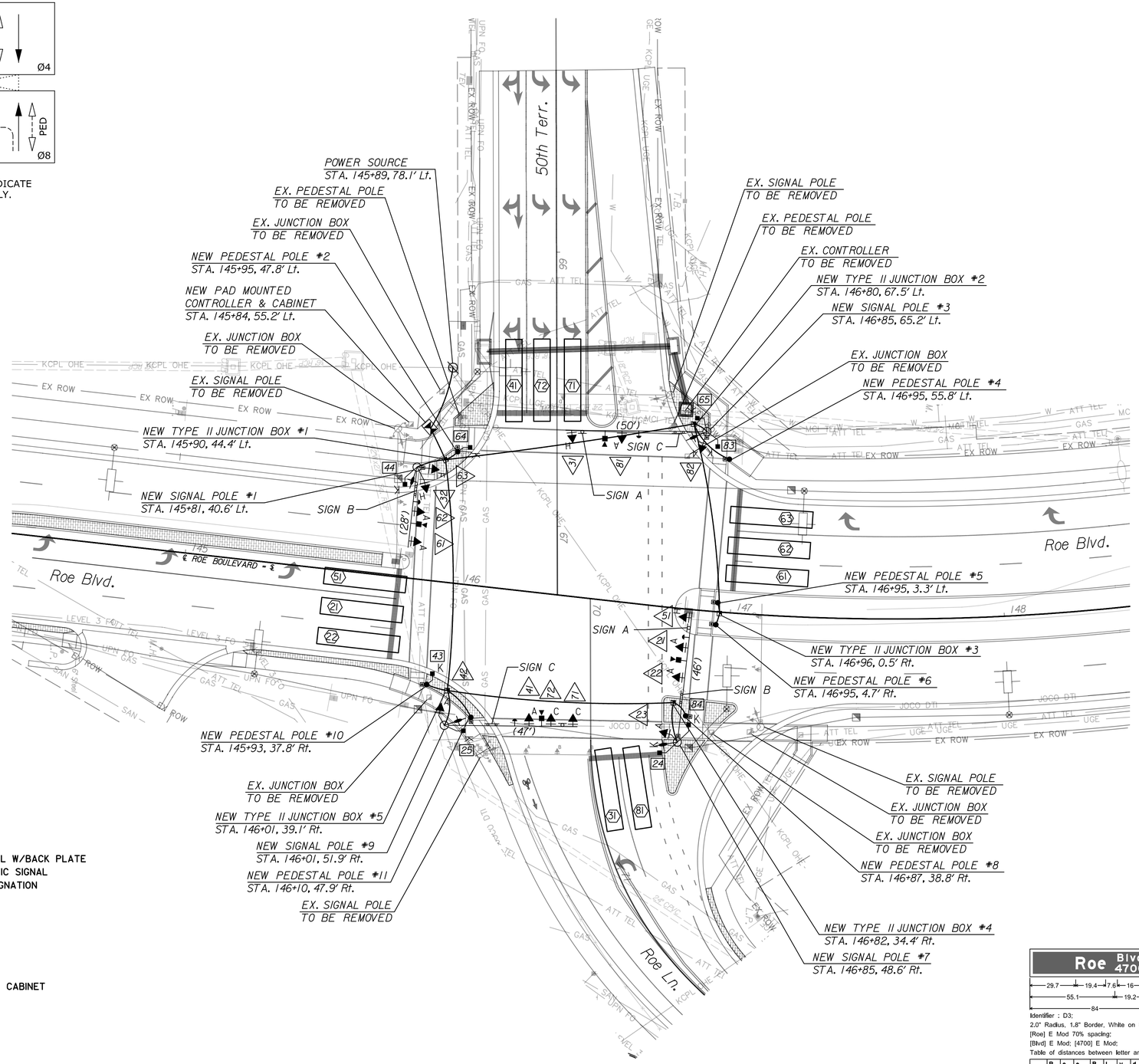
# PHASE DIAGRAM




NOTE: DOTTED LINES CONNECTING PHASES INDICATE PHASES THAT CAN OCCUR CONCURRENTLY.

## PEDESTRIAN PUSH BUTTON LAYOUT

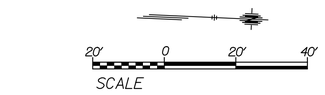


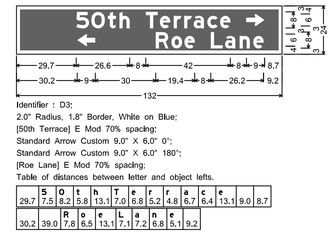



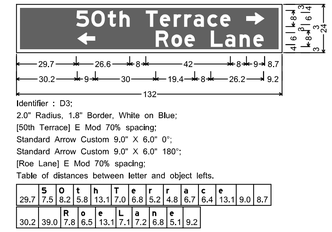

## SIGN LOCATIONS

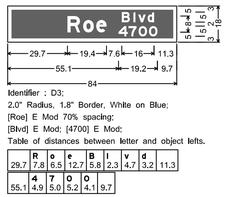
| SIGN | SIGN TYPE | POLE NUMBER | SPACING ON ARM* | LEGEND |
|---|---|---|---|---|
| B | D3 | 1 | 6.1' | 50TH TERR/ROE LN |
| A | KR10-12 | 3 | 44.9' | FYA |
| C | D3 | 3 | 8.6' | ROE BLVD |
| A | KR10-12 | 7 | 40.3' | FYA |
| B | D3 | 7 | 14.6' | 50TH TERR/ROE LN |
| C | D3 | 9 | 15.8' | ROE BLVD |
| | | | | |
| | | | | |

*To Center of Sign




NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING SIGNAL FOUNDATIONS A MINIMUM OF 24" BELOW FINISHED GRADE.
2. NEW SIGNAL CONSTRUCTION & EXISTING SIGNAL MODIFICATIONS SHALL BE COORDINATED WITH & APPROVED BY THE CITY OF ROELAND PARK TRAFFIC SIGNAL MAINTENANCE SUPERVISOR - NAME NAME (XXX) XXX-XXXX.
3. EXISTING SIGNAL SHALL REMAIN IN USE THROUGH CONSTRUCTION OR UNTIL THE NEW SIGNAL IS OPERATIONAL.
4. CONTRACTOR SHALL PROVIDE 30' MINIMUM OF SLACK WIRE AT THE SIGNAL CONTROLLER CABINET.
5. CONTRACTOR SHALL USE CITY APPROVED COLOR CODE FOR ALL SIGNAL WIRES.
6. CONTRACTOR SHALL INSTALL ALL SIGNAL HEADS ORIENTED HORIZONTALLY.

*NOTE: ALL STATIONS AND OFFSETS REFERENCE ROE BLVD ALIGNMENT*

## LEGEND

- LED LUMINAIRE AND POLE
- MAST ARM MOUNTED TRAFFIC SIGNAL W/BACK PLATE
- VERTICAL BRACKET MOUNTED TRAFFIC SIGNAL
- TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION
- PEDESTRIAN SIGNAL HEAD
- STREET NAME SIGN
- EMERGENCY VEHICLE DETECTOR
- TRAFFIC SIGNAL POLE
- CCTV CAMERA
- VIDEO DETECTION
- PAD MOUNTED CONTROLLER & DUAL CABINET
- JUNCTION BOX
- SERVICE BOX
- VIDEO DETECTION ZONE
- (6) VEHICLE DETECTOR
- 3" CONDUIT
- 2" CONDUIT
- 1 ½" CONDUIT

*KANSAS DEPARTMENT OF TRANSPORTATION*

TRAFFIC SIGNAL PLAN

ROE BLVD. AND 50TH TERR./ROE LN.

DATE | BY

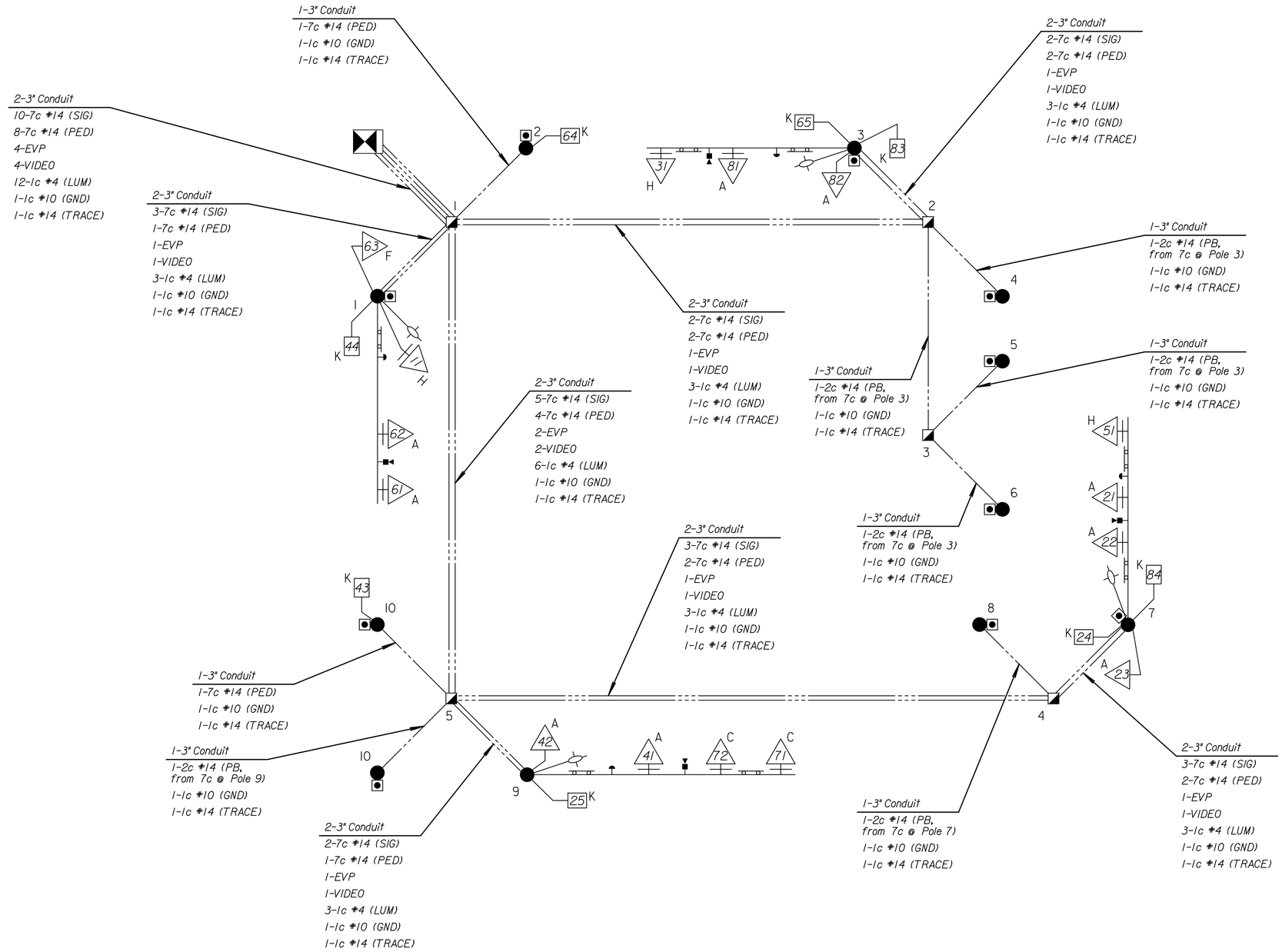
REFERENCES NOTED
REFERENCES CHECKED

Plotted :25-APR-2019 13:27

Drawn By : lrosenbaum
File : 13668T5003.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 142 | 393 |

NOT TO SCALE




KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL PLAN

WIRING DIAGRAM

ROE BLVD. AND 50TH TERR./ROE LN.

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |

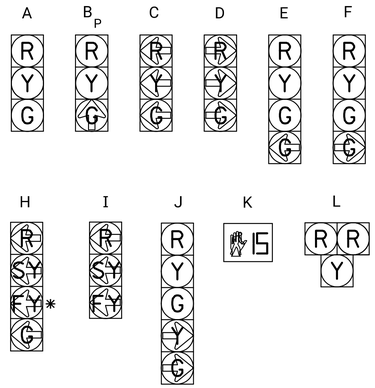
Plotted : 25-APR-2019 13:01

Drawn By : lrosenbaum

File : 13668T5003a.dgn

## CHART A SIGNAL SUMMARY

| Signal Face Arrangement | No. Sections (per Face) | Signal Mounting Type | Quantity |
|---|---|---|---|
| | | Mast Arm w / Backplate | |
| | | Mast Arm w / Backplate | |
| | | Mast Arm w / Backplate | |
| | | | |
| | | Side-of-Pole | |
| | | Side-of-Pole | |
| | | Side-of-POole | |



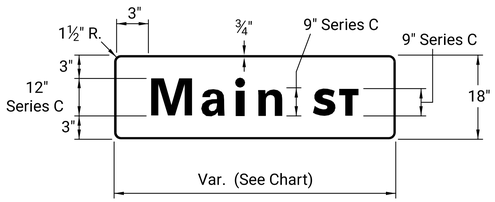

NOTES:
1) ✳ Shall not be displayed when operating in the protected only mode.
2) All lenses are L.E.D. unless otherwise noted.
3) Subscript "P" indicated programmed signals.
4) The traffic signal system shall be complete and the contractor shall furnish and install all equipment and materials necessary for the satisfactory operation of electrical apparatus and for complete operation of the traffic signal system whether specifically mentioned or not.

## CHART B TRAFFIC SIGNAL POLES

| Pole Height | Signal Arm Length | Signal Arm Mounting Height | No. of Signals on Arm | Signal Spacing | Luminaire Arm Length | Luminaire Mounting Height | Quantity |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## CHART C OVERHEAD STREET NAME SIGNS

| Sign | Legend | Length | Quantity |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |







KR10-12

## BILL OF MATERIALS

| Item | Quant. | Unit | Spec. No. | Note |
|---|---|---|---|---|
| Controller Unit | | Each | 3.2.2.2 | |
| Malfunction Management Unit | | Each | 3.2.2.3 | |
| Surge Protector | | Each | 3.2.2.4.3 | |
| Load Switch | | Each | 3.2.2.5.1 | |
| Flasher | | Each | 3.2.2.5.2 | |
| Flash Transfer Relay | | Each | 3.2.2.5.3 | |
| Detector, 2-Channel | | Each | 3.2.4.1 | |
| Detector, 4-Channel | | Each | 3.2.4.1 | |
| Pole Mounted Cabinet | | Each | 3.2.2.6.2 | |
| Pad Mounted Cabinet | | Each | 3.2.2.6.3 | |
| Bus Interface Unit | | Each | 3.2.2.7 | |
| | | | | |
| Battery Backup System (BBS/UPS) | | Each | 3.4.1 | |
| Video Detection Camera | | Each | 3.2.4.2 | Video Detection System (L.S.) |
| Radar Detection Device | | Each | 3.2.4.3 | Radar Detection System (L.S.) |
| Combination Video / Radar Detection Device | | Each | 3.2.4.2, 3.2.4.3 | Video / Radar Detection Sys (L.S.) |
| Traffic Signal Head | Chart A | Each | 3.2.5 | |
| Signal Head Mounting Bracket | Chart A | Each | 3.2.6 | |
| Retroreflective Backplate | Chart A | Each | 3.2.7 | |
| Vehicle Traffic Signal LED Modules | | Each | 3.2.5 | |
| Pedestrian Traffic Signal LED Modules | | Each | 3.2.5 | |
| | | | | |
| Pedestrian Pushbutton & Sign | | Each | 3.2.8, 3.2.9 | |
| APS Pushbutton System | | Each | 3.2.5.2.3 | |
| | | | | |
| Traffic Signal Pole | Chart B | Each | 3.2.10 | |
| Traffic Signal Pedestal Aluminum | | Each | 3.2.11 | |
| Terminal Block | | Each | 3.2.12 | |
| Junction Box | | Each | 3.2.13, 3.2.14 | |
| Service Box | | Each | 3.2.15 | |
| | | | | |
| Luminaire | | Each | 3.2.16 | |
| HPS Luminaire Lamp (150 or 250) Watt | | Each | 3.2.16.1 | |
| LED Luminaire | | Each | 3.2.17 | |
| Photocell | | Each | 3.2.18 | |
| Unfused Street Light Connector Kit | | Each | 3.2.19 | |
| Fused Street Light Connector Kit | | Each | 3.2.20 | |
| Overhead Street Name Sign | Chart C | Each | 3.2.21 | |
| R10-10 Sign (30" X 36") | | Each | 3.2.22 | |
| KR10-12 Sign (30" X 36") | | Each | 3.2.22 | |
| Blank Out Sign | | Each | 3.2.23 | |
| Entrance Head | | Each | 3.2.24 | |
| Service Enclosure, Amp. | | Each | 3.2.25 | |
| Circuit Breaker, Traffic Signal, Amp. | | Each | 3.2.26 | |
| Circuit Breaker, Luminaire, Amp. | | Each | 3.2.26 | |
| | | | | |
| Ground Rod & Clamp | | Each | 3.2.27, 3.2.28 | |
| Service Wire No. __ AWG 1/C | | Lin Ft | 3.2.29 | |
| Lighting Distribution Wire No. __ AWG 1/C | | Lin Ft | 3.2.30 | |
| Pole & Bracket Wire No. 10 AWG 1/C | | Lin Ft | 3.2.31 | |
| Ground Wire No. 6 AWG 1/C | | Lin Ft | 3.2.32 | |
| | | | | |
| Mulit-Conductor Cable No. 14 AWG 5/C | | Lin Ft | 3.2.33 | |
| Multi-Conductor Cable No. 14 AWG /C | | Lin Ft | 3.2.33 | |
| Multi-Conductor Cable No. 14 AWG /C | | Lin Ft | 3.2.33 | |
| | | | | |
| Shielded Detector Lead-in Cable No. 14 AWG 2/C | | Lin Ft | 3.2.34 | |
| Detector Loop Wire No. 14 AWG 1/C | | Lin Ft | 3.2.35 | |
| Loop Sealant | As Req'd | | 3.2.36 | |
| Pre-Formed Loop | | Each | 3.2.37 | |
| | | | | |
| Conduit, 1" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 1-1/2" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 2" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 3" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 4" & Fittings | | Lin Ft | 3.2.38 | |

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 143 | 393 |

## BID ITEM

| Item | Unit | Quantity |
|---|---|---|
| Traffic Signal | L.S. | L.S. |
| Video Detection System | L.S. | L.S. |
| Radar Detection System | L.S. | L.S. |
| Video / Radar Detection System | L.S. | L.S. |

-Quantities for Information Only-

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 3 | 8/1/18 | Added Video/Radar Detection to Bid Item | DJN | CPA |
| 2 | 10/25/15 | Remove Doghouse signal added HAWK, FY & KR | CPA | BDG |
| 1 | 12/24/14 | Updated R10 sizes chg. H head to I head | CPA | BDG |

KANSAS DEPARTMENT OF TRANSPORTATION

NEMA SYSTEM
TRAFFIC SIGNAL QUANTITIES SHEET

TE130A

| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 8/30/2018 | APP'D | Carla P. Anderson | |
| DESIGNED | D.J.N. | DETAILED | D.J.N. | QUANTITIES | TRACED |
| DESIGN CK. | C.P.A. | DETAIL CK. | C.P.A. | QUAN. CK. | TRACE CK. |

KDOT Graphics Certified 09-10-2018

Sh. No. 143

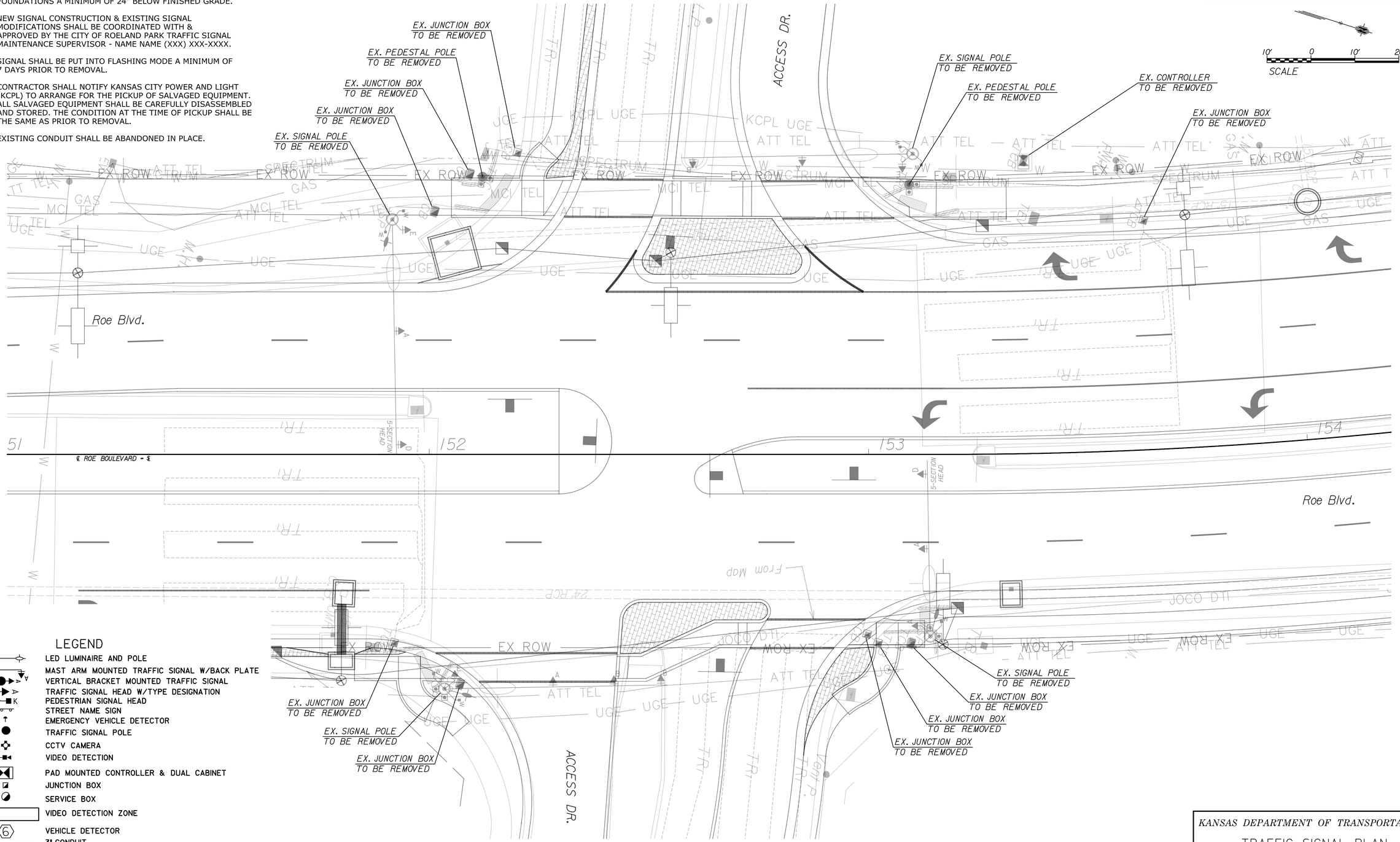
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Plotted :25-APR-2019 13:01
Drawn By: lrosenbaum
File : 13668T5003b.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 144 | 393 |

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING SIGNAL FOUNDATIONS A MINIMUM OF 24" BELOW FINISHED GRADE.
2. NEW SIGNAL CONSTRUCTION & EXISTING SIGNAL MODIFICATIONS SHALL BE COORDINATED WITH & APPROVED BY THE CITY OF ROELAND PARK TRAFFIC SIGNAL MAINTENANCE SUPERVISOR - NAME NAME (XXX) XXX-XXXX.
3. SIGNAL SHALL BE PUT INTO FLASHING MODE A MINIMUM OF 7 DAYS PRIOR TO REMOVAL.
4. CONTRACTOR SHALL NOTIFY KANSAS CITY POWER AND LIGHT (KCPL) TO ARRANGE FOR THE PICKUP OF SALVAGED EQUIPMENT. ALL SALVAGED EQUIPMENT SHALL BE CAREFULLY DISASSEMBLED AND STORED. THE CONDITION AT THE TIME OF PICKUP SHALL BE THE SAME AS PRIOR TO REMOVAL.
5. EXISTING CONDUIT SHALL BE ABANDONED IN PLACE.




## LEGEND

- LED LUMINAIRE AND POLE
- MAST ARM MOUNTED TRAFFIC SIGNAL W/BACK PLATE
- VERTICAL BRACKET MOUNTED TRAFFIC SIGNAL
- TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION
- PEDESTRIAN SIGNAL HEAD
- STREET NAME SIGN
- EMERGENCY VEHICLE DETECTOR
- TRAFFIC SIGNAL POLE
- CCTV CAMERA
- VIDEO DETECTION
- PAD MOUNTED CONTROLLER & DUAL CABINET
- JUNCTION BOX
- SERVICE BOX
- VIDEO DETECTION ZONE
- VEHICLE DETECTOR
- 3" CONDUIT
- 2" CONDUIT
- 1 ½" CONDUIT

NOTE: ALL STATIONS AND OFFSETS REFERENCE ROE BLVD ALIGNMENT

*KANSAS DEPARTMENT OF TRANSPORTATION*

TRAFFIC SIGNAL PLAN

ROE BLVD. AND ACCESS DR.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

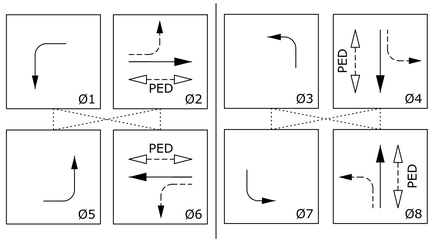
Plotted : 25-APR-2019 13:01

Drawn By : lrosenbaum

File : 136681T5004.dgn

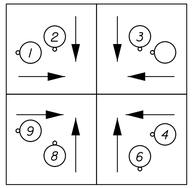
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 145 | 393 |

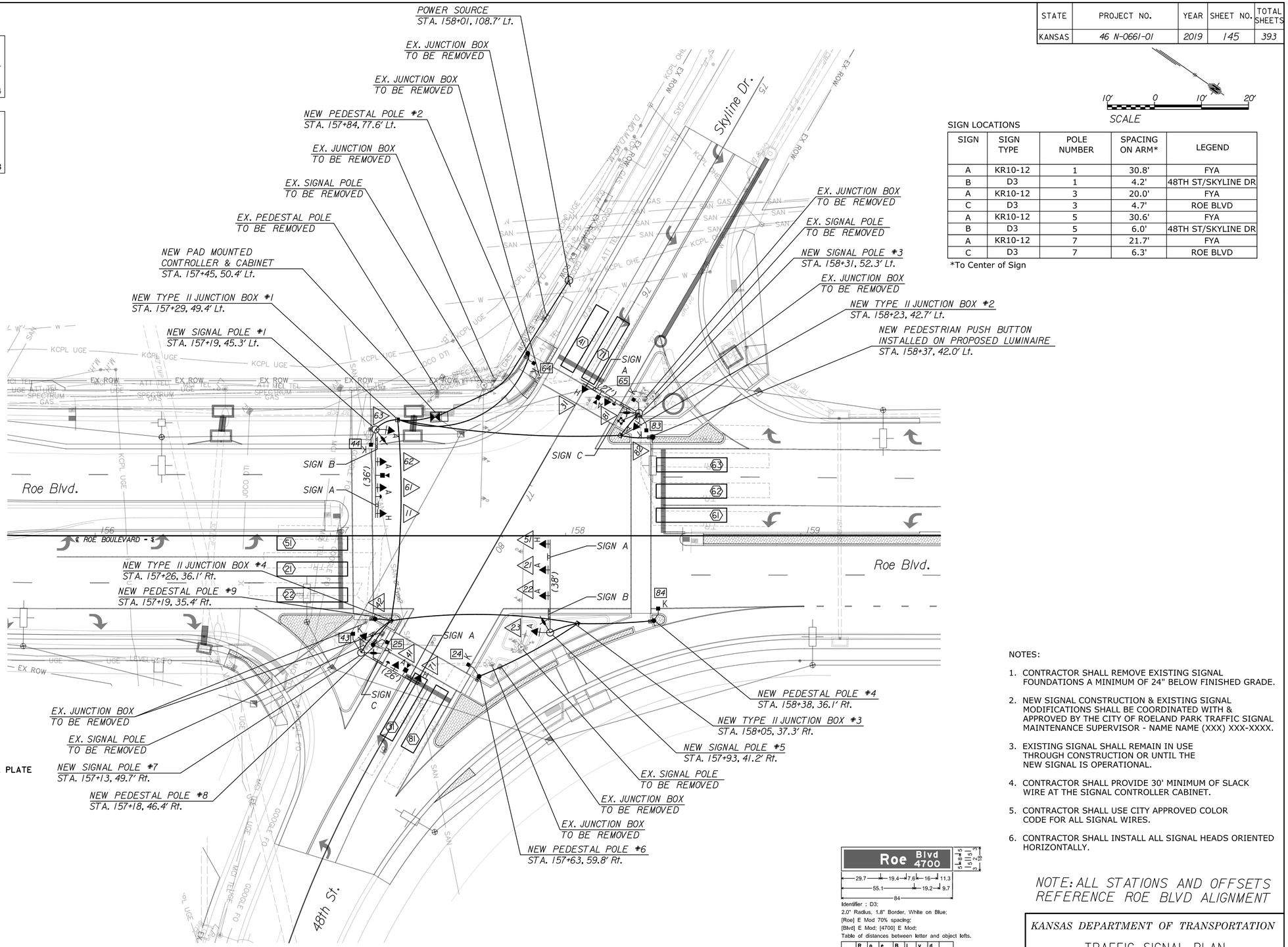
# PHASE DIAGRAM




NOTE: DOTTED LINES CONNECTING PHASES INDICATE PHASES THAT CAN OCCUR CONCURRENTLY.

## PEDESTRIAN PUSH BUTTON LAYOUT




## SIGN LOCATIONS

| SIGN | SIGN TYPE | POLE NUMBER | SPACING ON ARM* | LEGEND |
|---|---|---|---|---|
| A | KR10-12 | 1 | 30.8' | FYA |
| B | D3 | 1 | 4.2' | 48TH ST/SKYLINE DR |
| A | KR10-12 | 3 | 20.0' | FYA |
| C | D3 | 3 | 4.7' | ROE BLVD |
| A | KR10-12 | 5 | 30.6' | FYA |
| B | D3 | 5 | 6.0' | 48TH ST/SKYLINE DR |
| A | KR10-12 | 7 | 21.7' | FYA |
| C | D3 | 7 | 6.3' | ROE BLVD |

*To Center of Sign

10' 0 10' 20'
SCALE

## LEGEND

- LED LUMINAIRE AND POLE
- MAST ARM MOUNTED TRAFFIC SIGNAL W/BACK PLATE
- VERTICAL BRACKET MOUNTED TRAFFIC SIGNAL
- TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION
- PEDESTRIAN SIGNAL HEAD
- STREET NAME SIGN
- EMERGENCY VEHICLE DETECTOR
- TRAFFIC SIGNAL POLE
- CCTV CAMERA
- VIDEO DETECTION
- PAD MOUNTED CONTROLLER & DUAL CABINET
- JUNCTION BOX
- SERVICE BOX
- VIDEO DETECTION ZONE
- VEHICLE DETECTOR
- 3" CONDUIT
- 2" CONDUIT
- 1 ½" CONDUIT




Identifier : D3:
2.0" Radius, 1.8" Border, White on Blue;
[Roe] E Mod 70% spacing;
[Blvd] E Mod; [4700] E Mod;
Table of distances between letter and object lefts.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 29.7 | R | 7.8 | o | 6.5 | e | 12.7 | B | 5.8 | l | 2.3 | v | 4.7 | d | 3.2 | 11.3 |
| 55.1 | 4 | 4.9 | 7 | 5.0 | 0 | 5.2 | 0 | 4.1 | 9.7 | | | | | | |

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING SIGNAL FOUNDATIONS A MINIMUM OF 24" BELOW FINISHED GRADE.
2. NEW SIGNAL CONSTRUCTION & EXISTING SIGNAL MODIFICATIONS SHALL BE COORDINATED WITH & APPROVED BY THE CITY OF ROELAND PARK TRAFFIC SIGNAL MAINTENANCE SUPERVISOR - NAME NAME (XXX) XXX-XXXX.
3. EXISTING SIGNAL SHALL REMAIN IN USE THROUGH CONSTRUCTION OR UNTIL THE NEW SIGNAL IS OPERATIONAL.
4. CONTRACTOR SHALL PROVIDE 30' MINIMUM OF SLACK WIRE AT THE SIGNAL CONTROLLER CABINET.
5. CONTRACTOR SHALL USE CITY APPROVED COLOR CODE FOR ALL SIGNAL WIRES.
6. CONTRACTOR SHALL INSTALL ALL SIGNAL HEADS ORIENTED HORIZONTALLY.

*NOTE: ALL STATIONS AND OFFSETS REFERENCE ROE BLVD ALIGNMENT*

*KANSAS DEPARTMENT OF TRANSPORTATION*

# TRAFFIC SIGNAL PLAN

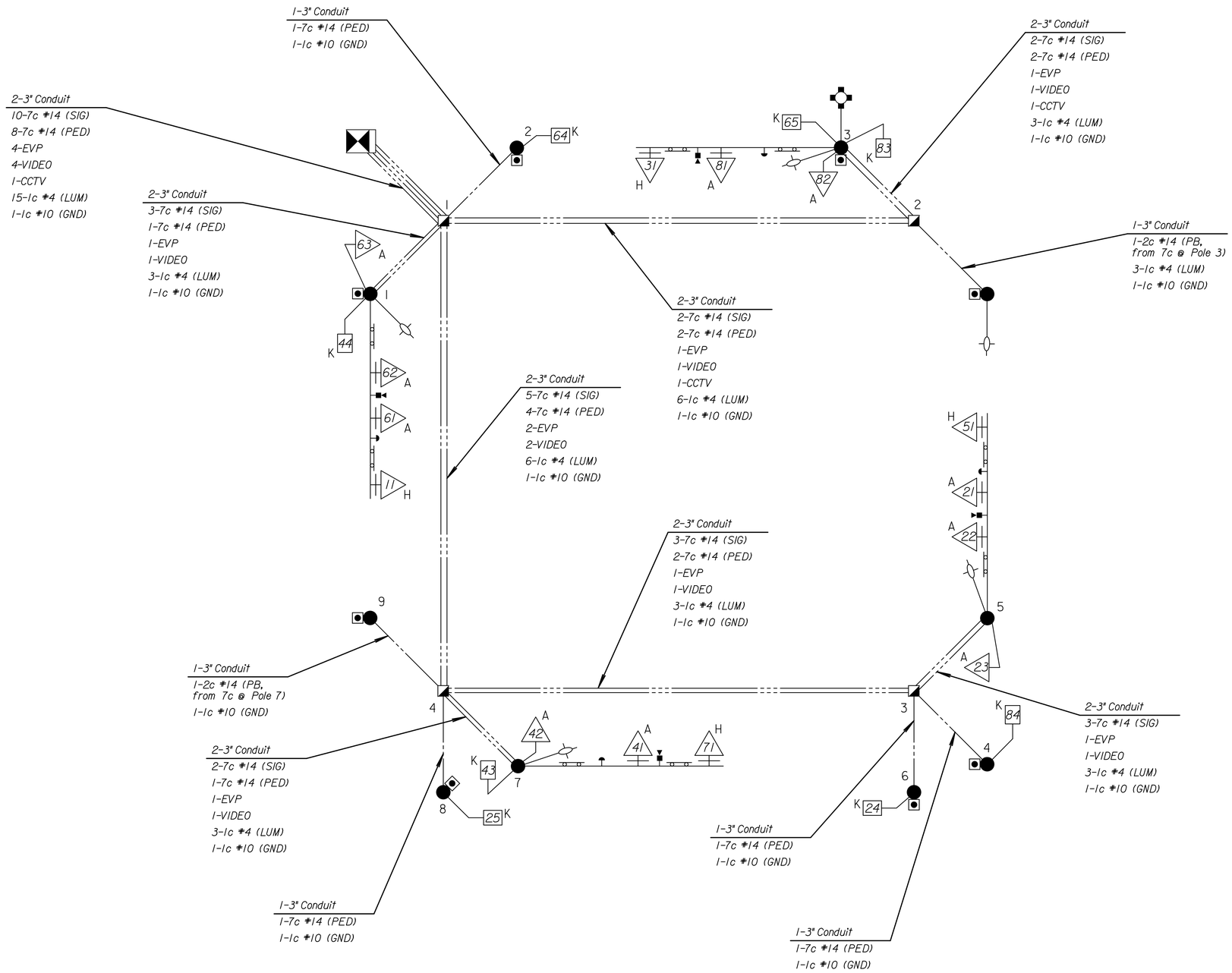
## ROE BLVD. AND 48TH ST./SKYLINE DR.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:27
Drawn By : lrosenbaum
File : 136681T5005.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 146 | 393 |

NOT TO SCALE




## LEGEND

- TRAFFIC SIGNAL POLE WITH MAST ARM
- LED LUMINAIRE AND POLE
- TRAFFIC SIGNAL HEAD & TYPE DESIGNATION (W/HEAD NO.)
- PEDESTRIAN SIGNAL HEAD (W/HEAD NO.)
- STREET NAME SIGN
- EMERGENCY VEHICLE DETECTOR
- CCTV CAMERA
- VIDEO DETECTION
- PAD MOUNTED CONTROLLER
- SERVICE BOX
- JUNCTION BOX
- VEHICLE DETECTOR (W/LOOP NO.)
- 3" CONDUIT
- 2" CONDUIT
- 1 ½" CONDUIT

*KANSAS DEPARTMENT OF TRANSPORTATION*

TRAFFIC SIGNAL PLAN

WIRING DIAGRAM

ROE BLVD. AND 48TH ST./SKYLINE DR.

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

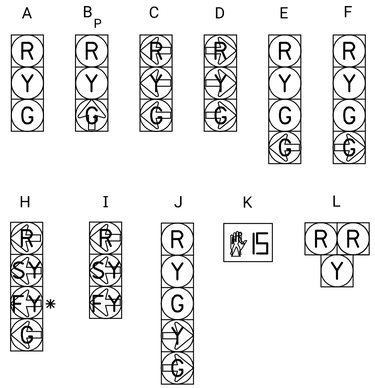
Plotted : 25-APR-2019 13:01

Drawn By : lrosenbaum

File : 13668T5005a.dgn

## CHART A SIGNAL SUMMARY

| Signal Face Arrangement | No. Sections (per Face) | Signal Mounting Type | Quantity |
|---|---|---|---|
| | | Mast Arm w / Backplate | |
| | | Mast Arm w / Backplate | |
| | | Mast Arm w / Backplate | |
| | | | |
| | | Side-of-Pole | |
| | | Side-of-Pole | |
| | | Side-of-POole | |



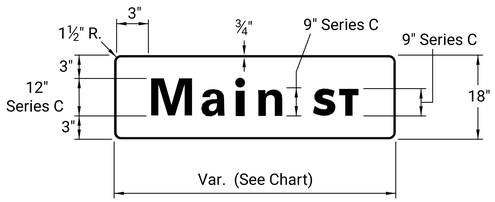

NOTES:
1) ✳ Shall not be displayed when operating in the protected only mode.
2) All lenses are L.E.D. unless otherwise noted.
3) Subscript "P" indicated programmed signals.
4) The traffic signal system shall be complete and the contractor shall furnish and install all equipment and materials necessary for the satisfactory operation of electrical apparatus and for complete operation of the traffic signal system whether specifically mentioned or not.

## CHART B TRAFFIC SIGNAL POLES

| Pole Height | Signal Arm Length | Signal Arm Mounting Height | No. of Signals on Arm | Signal Spacing | Luminaire Arm Length | Luminaire Mounting Height | Quantity |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
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## CHART C OVERHEAD STREET NAME SIGNS

| Sign | Legend | Length | Quantity |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |







KR10-12

## BILL OF MATERIALS

| Item | Quant. | Unit | Spec. No. | Note |
|---|---|---|---|---|
| Controller Unit | | Each | 3.2.2.2 | |
| Malfunction Management Unit | | Each | 3.2.2.3 | |
| Surge Protector | | Each | 3.2.2.4.3 | |
| Load Switch | | Each | 3.2.2.5.1 | |
| Flasher | | Each | 3.2.2.5.2 | |
| Flash Transfer Relay | | Each | 3.2.2.5.3 | |
| Detector, 2-Channel | | Each | 3.2.4.1 | |
| Detector, 4-Channel | | Each | 3.2.4.1 | |
| Pole Mounted Cabinet | | Each | 3.2.2.6.2 | |
| Pad Mounted Cabinet | | Each | 3.2.2.6.3 | |
| Bus Interface Unit | | Each | 3.2.2.7 | |
| | | | | |
| Battery Backup System (BBS/UPS) | | Each | 3.4.1 | |
| Video Detection Camera | | Each | 3.2.4.2 | Video Detection System (L.S.) |
| Radar Detection Device | | Each | 3.2.4.3 | Radar Detection System (L.S.) |
| Combination Video / Radar Detection Device | | Each | 3.2.4.2, 3.2.4.3 | Video / Radar Detection Sys (L.S.) |
| Traffic Signal Head | Chart A | Each | 3.2.5 | |
| Signal Head Mounting Bracket | Chart A | Each | 3.2.6 | |
| Retroreflective Backplate | Chart A | Each | 3.2.7 | |
| Vehicle Traffic Signal LED Modules | | Each | 3.2.5 | |
| Pedestrian Traffic Signal LED Modules | | Each | 3.2.5 | |
| | | | | |
| Pedestrian Pushbutton & Sign | | Each | 3.2.8, 3.2.9 | |
| APS Pushbutton System | | Each | 3.2.5.2.3 | |
| | | | | |
| Traffic Signal Pole | Chart B | Each | 3.2.10 | |
| Traffic Signal Pedestal Aluminum | | Each | 3.2.11 | |
| Terminal Block | | Each | 3.2.12 | |
| Junction Box | | Each | 3.2.13, 3.2.14 | |
| Service Box | | Each | 3.2.15 | |
| | | | | |
| Luminaire | | Each | 3.2.16 | |
| HPS Luminaire Lamp (150 or 250) Watt | | Each | 3.2.16.1 | |
| LED Luminaire | | Each | 3.2.17 | |
| Photocell | | Each | 3.2.18 | |
| Unfused Street Light Connector Kit | | Each | 3.2.19 | |
| Fused Street Light Connector Kit | | Each | 3.2.20 | |
| Overhead Street Name Sign | Chart C | Each | 3.2.21 | |
| R10-10 Sign (30" X 36") | | Each | 3.2.22 | |
| KR10-12 Sign (30" X 36") | | Each | 3.2.22 | |
| Blank Out Sign | | Each | 3.2.23 | |
| Entrance Head | | Each | 3.2.24 | |
| Service Enclosure, Amp. | | Each | 3.2.25 | |
| Circuit Breaker, Traffic Signal, Amp. | | Each | 3.2.26 | |
| Circuit Breaker, Luminaire, Amp. | | Each | 3.2.26 | |
| | | | | |
| Ground Rod & Clamp | | Each | 3.2.27, 3.2.28 | |
| Service Wire No. __ AWG 1/C | | Lin Ft | 3.2.29 | |
| Lighting Distribution Wire No. __ AWG 1/C | | Lin Ft | 3.2.30 | |
| Pole & Bracket Wire No. 10 AWG 1/C | | Lin Ft | 3.2.31 | |
| Ground Wire No. 6 AWG 1/C | | Lin Ft | 3.2.32 | |
| | | | | |
| Mulit-Conductor Cable No. 14 AWG 5/C | | Lin Ft | 3.2.33 | |
| Multi-Conductor Cable No. 14 AWG /C | | Lin Ft | 3.2.33 | |
| Multi-Conductor Cable No. 14 AWG /C | | Lin Ft | 3.2.33 | |
| | | | | |
| Shielded Detector Lead-in Cable No. 14 AWG 2/C | | Lin Ft | 3.2.34 | |
| Detector Loop Wire No. 14 AWG 1/C | | Lin Ft | 3.2.35 | |
| Loop Sealant | As Req'd | | 3.2.36 | |
| Pre-Formed Loop | | Each | 3.2.37 | |
| | | | | |
| Conduit, 1" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 1-1/2" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 2" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 3" & Fittings | | Lin Ft | 3.2.38 | |
| Conduit, 4" & Fittings | | Lin Ft | 3.2.38 | |

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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## BID ITEM

| Item | Unit | Quantity |
|---|---|---|
| Traffic Signal | L.S. | L.S. |
| Video Detection System | L.S. | L.S. |
| Radar Detection System | L.S. | L.S. |
| Video / Radar Detection System | L.S. | L.S. |

-Quantities for Information Only-

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 3 | 8/1/18 | Added Video/Radar Detection to Bid Item | DJN | CPA |
| 2 | 10/25/15 | Remove Doghouse signal added HAWK, FY & KR | CPA | BDG |
| 1 | 12/24/14 | Updated R10 sizes chg. H head to I head | CPA | BDG |

KANSAS DEPARTMENT OF TRANSPORTATION

NEMA SYSTEM
TRAFFIC SIGNAL QUANTITIES SHEET

TE130A

| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 8/30/2018 | APP'D | Carla P. Anderson | |
| DESIGNED | D.J.N. | DETAILED | D.J.N. | QUANTITIES | TRACED |
| DESIGN CK. | C.P.A. | DETAIL CK. | C.P.A. | QUAN. CK. | TRACE CK. |

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Sh. No. 147

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## Traffic Signal Legend

- FO — HDPE Fiber Optic Conduit with Locating Cable (Sized as Noted)
- PVC Conduit (Size as Noted)
- 1" HDPE Conduit
- 1.5" HDPE Conduit
- 2" HDPE Conduit
- 3" HDPE Conduit
- 4" HDPE Conduit

(Refer to Wiring Diagram for Clarification)

- (30") — Mast Arm Pole (Length)
- (30") — Combination Pole (Traffic Signal and Street Light)
- Pedestal Pole
- Pedestrian Pushbutton Pole
- Traffic Signal Head
- Traffic Signal Head W/Backplate
- Pedestrian Signal Indication
- EVP Detector
- Advance Radar Detector
- Presence Radar Detector
- Type 1 Service Box
- Type 2 Service Box
- FO — Type 1 Fiber Optic Service Box
- FO — Type 2 Fiber Optic Service Box
- J — Type 1 Junction Box
- J — Type 2 Junction Box
- Traffic Signal Controller Cabinet (Stretch Hybrid)
- H — Traffic Signal Controller Cabinet (Double Wide Hybrid)
- OPTICOM — Advance Loop Detector, OPTCS Loop
- Presence Loop Detector
- Presence Detection Zone
- SNS — Illuminated Street Name Sign
- Video Detection Camera
- Closed Circuit TV (CCTV) Camera
- CNG — CNG Generator Cabinet (Shaded Portion Shows Exhaust Side of Cabinet)
- GM — Gas Meter
- Electrical Service
- 100W Post-Top Luminaire W/14' Pole
- 150W Post-Top Luminaire W/14' Pole
- Class D LED Cobra-Head W/30' Light Pole
- Class C LED Cobra-Head W/30' Light Pole
- Class B LED Cobra-Head W/30' Light Pole
- Class A LED Cobra-Head W/30' Light Pole
- Class D LED Cobra-Head W/40' Light Pole
- Class C LED Cobra-Head W/40' Light Pole
- Class B LED Cobra-Head W/40' Light Pole
- Class A LED Cobra-Head W/40' Light Pole
- Class D LED Cobra-Head W/Combination Pole
- Class C LED Cobra-Head W/Combination Pole
- Class B LED Cobra-Head W/Combination Pole
- Class A Cobra-Head W/Combination Pole
- Construction Note
- Pole Number
- Service Box Number
- Vehicular Signal Head No.
- 8P2 — Pedestrian Signal Head No.
- 42 — Loop Detector No. (Video or Radar Detection Zone No.)
- Flat Sheet Street Name Sign
- Flat Sheet Traffic Sign

## Existing Equipment Removal Summary

| Location | Description of Item | Quantity |
|---|---|---|
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## Traffic Signal Turn-on Procedure

1. Turn-on should not be scheduled until power is actually available at the service pedestal and all other equipment and hardware is installed.
2. At least two working days prior to scheduled signal activation, all testing should be completed and successful, all defects and deficiencies correct, all indications operational and properly aimed, cables tagged, controller fully operational performing all timing functions required, all other items of work associated with the signal completed, and all signs and pavement markings properly installed unless otherwise approved by the engineer.
3. The City Inspector and Signal Technician will conduct a full inspection of the signal system within these same two days. Upon satisfactory conditions of the signal system, the turn-on schedule will be confirmed. Any deficiencies found during the final inspection shall result in the rescheduling of the activation.
4. If the traffic signal is a new installation where previously none existed, the contractor shall install "SIGNAL AHEAD" (W3-3) and "NEW" (W16-15p) warning signs with orange background and yellow type B flashing beacons advising the motorists of the signal activation. Signs may be installed prior to putting the signal into operation and covered until such time as the signal is placed into full operation. Signs are subsidiary to other items.
5. Actual activation shall consist of the following steps:
   * installation of all required equipment in the controller cabinet
   * testing of installed equipment
   * unbagging of all signal heads and signs if applicable
   * activation of the signal with the contractor's flagger stopping all traffic momentarily as the signal is turned on.
   * minor re-aiming of signal heads, if necessary
   * uncover the signal ahead sign and turn on flashing beacon
6. Activation of the traffic signal shall not be scheduled for weekends, Fridays or days right before public holidays. Activation shall take place in the morning hours only after 9:00 a.m.
7. The contractor shall remove the "Signal Ahead" (W3-3) and "NEW" (W16-15p) warning signs and flashing beacons after one week of operation.
8. Assumption of maintenance operations related to equipment or signal timings within the traffic signal cabinet will be the responsibility of the City of Overland Park and shall occur after successful turn-on to full operation. This applies to temporary traffic signal installations, traffic signal modifications and new traffic signal installations and applies to normal maintenance operations or emergency callouts to take corrective action to return the signal back to full operating condition. Final acceptance by the City is conditional until the contractor has corrected all defects and punch list items. If a traffic signal malfunction occurs between successful turn-on and final acceptance and the signal malfunction is due to faulty work by the contractor, the City of Overland Park Maintenance Division will take corrective action and has the discretion to bill the contractor for all related expense, including overhead.

## Instructions for Disassembly and Return of Salvaged Traffic Signal Equipment

*The following is a list of traffic signal equipment which shall be salvaged and returned to the City of Overland Park, unless otherwise instructed by the inspector. The condition at the time of delivery shall be the same as prior to removal. Disassembly of equipment shall be done prior to to returning the equipment. All equipment, excluding signal poles and mast arms, shall be delivered to the Blue Valley Public Works Maintenance Facility (Traffic Services Maintenance Office and Shop) 6869 W. 153rd Street. Signal poles and mast arms shall be returned to offsite facility near 53rd Street and Renner Road (West of I-435). The contractor shall notify the City of Overland Park Department of Public Works, Marvin Furgison (913) 327-6603 to arrange for the delivery of the salvaged equipment. Provide 48-hours advance notice.*

*The City maintains the first right of refusal of any equipment listed. The project inspector will make an on-site assessment to determine if the equipment should be salvaged or disposed. Any equipment that will not be salvaged shall become the property of the contractor.*

1. Emergency Vehicle Pre-emption (EVP) detector units, Video Detection Cameras, Radar Detectors, CCTV cameras, RWIS sensors, pedestrian pushbuttons and any other equipment must be removed from the mast arms or poles and returned.
2. All vehicular traffic signal heads and pedestrian signal heads shall be removed from the mast arms or poles and be salvaged. All LED indications must be removed from the vehicular signal and or pedestrian signal heads and boxed prior to salvaging. Lamps, visors and backplates should remain attached to the vehicular and pedestrian signal heads.
3. Mounting brackets and signal head mounting arms should be removed from the signal heads. Mounting bracket cables shall not be cut for removal, unless they are cracked or damaged.
4. All signal poles, pedestal poles, mast arms and luminaire arms shall be salvaged. Anchor bolt covers and pole caps must be boxed and or bagged and salvaged with the equipment. Mast arms and luminaire arms shall be removed from poles prior to delivery. The contractor shall be required to remove and discard all included cable except wiring harnesses for radar detection and RWIS sensors which shall be salvaged with the equipment.
5. Secondary service pedestal enclosures or battery backup enclosures shall be removed from the traffic signal controller cabinet and returned.
6. Traffic signal controller cabinet and all internal components shall be salvaged. Any traffic signal controller cabinet hardware that is not attached to the cabinet must be boxed and or bagged and returned with the equipment. Field wire connections on salvaged signal controller cabinets shall be unscrewed at the terminals instead of cut off.
7. All compressed natural gas generator assembly units shall be salvaged.
8. All junction box and service box covers and lids shall be salvaged if in good condition.
9. Disassembly of any streetlight equipment that is attached to the traffic signal equipment shall follow the guidelines as stated in the "instructions for disassembly and return of salvaged streetlighting equipment".
10. Disassembly of any traffic sign equipment attached to the traffic signal equipment shall follow the guidelines as stated in the "instructions for disassembly and return of salvaged traffic sign equipment".

## General Notes

1. The contractor shall stake the locations for all poles, controllers, service boxes and junction boxes to be installed. The stations and offsets provided are to the center of the traffic signal equipment. Elevations shall be provided. If obstructions are encountered during installation, the contractor will re-stake those locations affected by the obstruction. The Traffic Signal Inspector shall inspect the staking prior to any excavation/construction.
2. The locations of existing underground utilities, if shown, are shown in an approximate location only and have not been independently verified. The contractor shall be responsible for contacting all utility companies for locations of all underground lines prior to excavation and be fully responsible for any and all damages, which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.
3. The City of Overland Park is on the KS OneCall System. The contractor shall call 811 to obtain locates for streetlighting, traffic signal, and fiber optic conduits/cables.
4. The contractor shall be responsible for removing and salvaging existing equipment as noted. See instructions for Disassembly and Salvage of Traffic Signal Equipment.
5. Rock and shale may be encountered and thus the bid items shall reflect the extra work necessary to accomplish the installation. No additional payments ("extras") will be made for excavation of rock or shale and unsuitable backfill materials. The following conditions shall prevail: All conduit trenches and pre-drilled holes within rock/shale shall be backfilled with suitable material and properly compacted in accordance with the specifications.
6. Conduits shall be installed under all streets, drives and sidewalks prior to paving within the limits of the street improvements. The conduit placement shall be coordinated with the paving operation, if applicable, and inspected by the City Traffic Signal Inspector. (See Trench Details)
7. The conduit shall be installed under any existing underdrain pipe crossings and underdrain blankets. Where pole foundations are to be installed through an existing underdrain blanket, the blanket shall be pre-cut to prevent damage of the blanket. In the event the blanket is damaged, the fabric shall be replaced.
8. HDPE conduit shall be installed continuously between all traffic signal appurtenances. Conduit splices between appurtenances shall not be allowed unless fusion couplings or other fusion methods are used.
9. All cable splices from loop detector cable to lead-in cable at junction boxes shall be watertight.
10. Damage to any existing traffic signal equipment due to the construction shall be the responsibility of the contractor, and the contractor shall report any operational problems to the Traffic Services Maintenance Department (913) 327-6600. The equipment shall be replaced or repaired (as directed by the City) with approved materials in conformance with the current standard details, specifications, practices and policies. The contractor shall be responsible for any stored existing materials (removed for construction) to be re-installed.
11. All existing traffic signal equipment is to be used in place (U.I.P.) unless otherwise noted in the plans.
12. All areas disturbed by construction shall be sodded as directed by the construction representative. The medians shall be seeded or brick pavers restored, unless otherwise noted or directed. Sidewalk damaged by construction or removed due to construction shall be replaced as directed, in accordance with the Overland Park Municipal Code requirements.
13. Forms (including rebar cages, etc.) conduit and anchor bolts shall be installed and in place for review by the City or construction representative a minimum of 24 hours in advance of the proposed concrete placement that same day. No concrete placement shall begin after 3:00 p.m.
14. All loop detectors shall be wet cut with equipment approved by the engineer. Loops shall be cut prior to the final surface lift, but after review of the pre-marked locations.
15. Luminaire arms shall be oriented in the same vertical plane as the mast arm unless otherwise indicated in the plans.
16. Turn-on of the traffic signal system, shall be in accordance with City turn-on procedures.
17. All construction of the traffic signal that will result in taking the existing traffic signal out of operation shall be performed on Sunday between 9:00 a.m. and 6:00 p.m. and completed that same day, unless otherwise directed by the engineer. The City of Overland Park Police Department shall provide officer control of the intersection when the signal is out of operation. The contractor shall notify the police department and the City Traffic Services division at least 72 hours in advance. The Traffic Signal Inspector and the Traffic Signal Specialist shall be present during this time (unless otherwise directed by the engineer).
18. The traffic signal contractor shall notify the City of Overland Park Department of Public Works, (913) 895-6027, of the exact construction schedule so that inspection of the traffic signal installation can be made of all phases, including conduit installations.
19. The contractor shall be responsible for any damage incurred to any existing underground sprinkler system during construction. All affected pipes or fittings shall be restored to their original condition and location and new materials used shall be similar to those of the existing system. All restoration work shall be acceptable to the engineer and owner thereof.
20. The contractor shall be required to submit catalog cuts or shop drawings for all equipment to be installed on this project. All materials shall be from the City of Overland Park pre-apporved materials list available at City Hall.
21. All signal cable shall be positively identified at the controller and each pole with phase numbers and colored electrical tape as follows:

| Vehicle Phases | Pedestrian Phases |
|---|---|
| ϕ 1 – Purple and White | ϕ 6 – Purple and Orange |
| ϕ 6 – Purple | ϕ 2 – Blue and Orange |
| ϕ 5 – Blue and White | ϕ 8 – Yellow and Orange |
| ϕ 2 – Blue | ϕ 4 – Red and Orange |
| ϕ 3 – Yellow and White | |
| ϕ 8 – Yellow | |
| ϕ 7 – Red and White | |
| ϕ 4 – Red | |

22. The contractor shall leave slack cable in poles, service boxes, junction boxes and control center according to the following:
    - provide 6' min. slack for all cable in service boxes
    - provide 5' min. slack for all cable in the controller cabinet
    - provide 3' slack for loop cable in the junction box
    - provide 3' slack for lead-in cable in the junction box
    - provide 1' min. slack on each side of the cable splice at signal poles
23. The contractor shall positively identify the detector loop cables in the junction boxes, where they come in from the street, with wraps of white electrical tape corresponding to the loop number. The cables should be identified according to lane. The inside lane should be marked as number one and increasing outward.
24. Within the traffic signal controller, the contractor shall use plastic tie-wrap identification tags with permanent marker to identify all of the vehicular and pedestrian heads that are served by each cable. The numbering of the signal heads shall conform to the plan sheets.
25. The contractor, or their supplier, shall, at the contractor's expense, submit a concrete mix design for approval by the Kansas City Metro Materials Board (KCMMB) prior to placement of any concrete. Additional information regarding KCMMB approved concrete mix designs is available on the following website: www.kcmmb.org
26. All non-functioning traffic signal heads shall be covered with approved opaque coverings specifically manufactured for traffic signal heads. The color of the coverings shall be as follows:
    - orange at locations of new traffic signals
    - black at locations of signal modifications such that the coverings do not detract from the functioning signal heads.
27. All existing traffic signals shall remain in operation and be used in place until the permanent traffic signal installation is complete and in operation. Refer to the traffic control plans for additional requirements. The contractor shall coordinate the disconnection of service with KCP&L for the existing signal system.
28. All temporary traffic signals installed by the contractor shall be equipped with a 2070 or ASC3 Rackmount controller provided by the contractor for compatibility with the City's signal system.
29. Contractor shall use a polymer lubricating agent to facilitate conduit bores under paved streets. Failure to do so will result in a denial to retrieve bore head by excavation methods, in the case of loss, under any paved street.
30. The ends of all conduit in service/junction boxes and in the controller cabinet shall be plugged with duct seal.
31. All existing concrete foundations, shown to be removed, shall be removed a minimum of 24" below final grade.
32. The contractor shall be required to install inventory stickers on the back of all signs installed on signal poles, or mast arms on the project, and record each respective bar code number on the plan sheet adjacent to the corresponding sign, for delivery to the project inspector. Inventory stickers will be provided by the City.
33. If the final combination signal/streetlight pole is less than ten (10) feet away from the nearest overhead power line, the contractor shall contact KCP&L and request them to sleeve their line prior to pole installation. All associated costs shall be the responsibility of the contractor.
34. The contractor shall be required to have all tree branches that obstruct CCTV cameras, radar detection sensors or traffic signal heads trimmed by a licensed arborist.
35. Any equipment the City pre-ordered prior to the contract shall be picked up at the applicable City Maintenance facility at the contractor's expense. All the items must be picked up at one time.

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

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Drawn By : lrosenbaum
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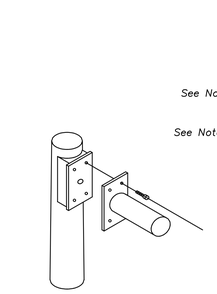
*OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.*

*KANSAS DEPARTMENT OF TRANSPORTATION*

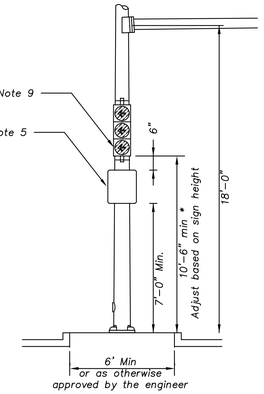
TRAFFIC SIGNAL DETAILS

SHEET 1 OF 13

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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| KANSAS | 46 N-0661-01 | 2019 | 149 | 393 |

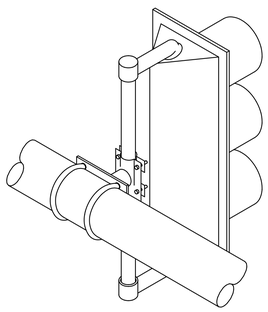


Mast Arm Attachment



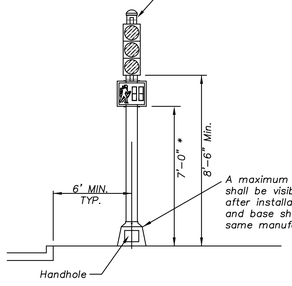

Median Mounted Steel or Steel Combination Streetlighting & Signal Pole

*Note:
Mount vehicular signal head at 8'-6" if no traffic sign specified.



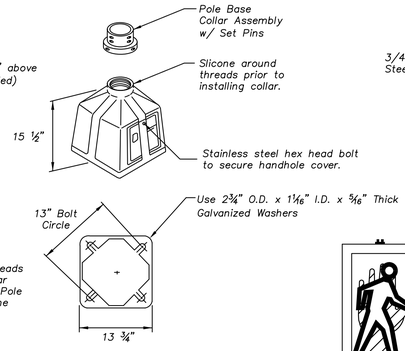
Mast Arm Signal Mounting Bracket

(Cable Mount Assembly)

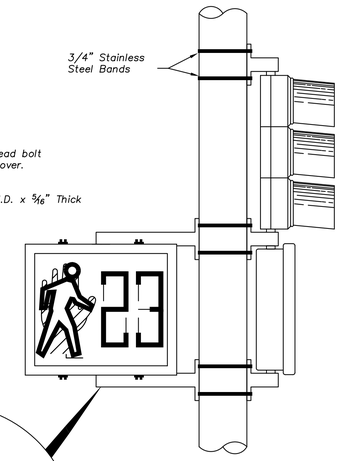



Aluminum Signal Pedestal Pole

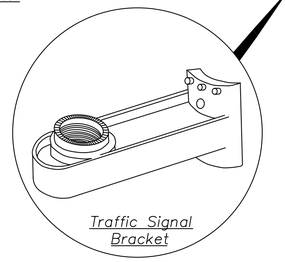
*Notes:
- Mount pedestrian head at 7'-4" if no vehicle heads. Otherwise maintain 7'-0" mounting as shown.
- Orient handhole toward the sidewalk opposite the direction of opposing traffic.



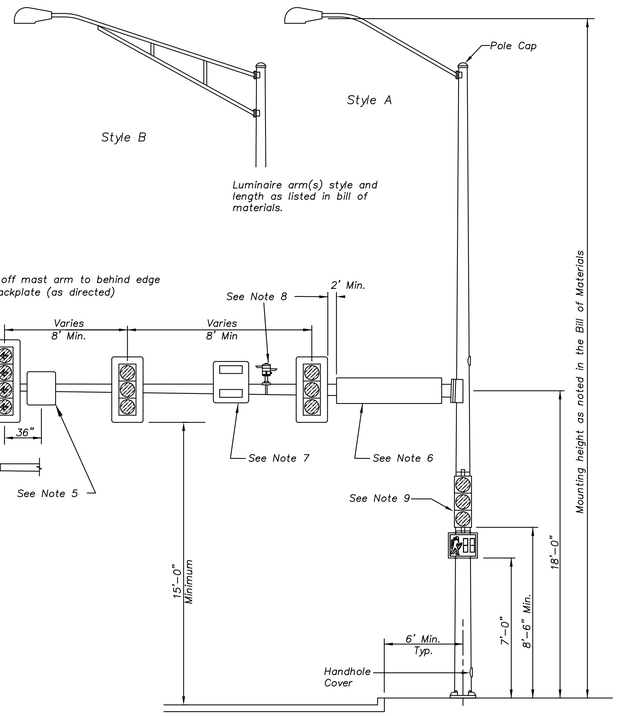

Pedestal Pole Base Detail




Pole Band and Bracket Mounting Detail



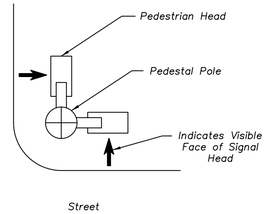
Traffic Signal Bracket




Steel Combination Streetlighting & Signal Pole

Notes:

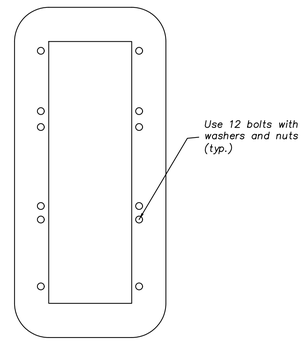
1. Detail applies when there are only pedestrian signal heads.
2. When vehicular signal heads are mounted on the same pole as pedestrian signal heads, they shall both be mounted in the same vertical plane with the pedestrian signal head mounted below the vehicle signal head with a shared bracket.



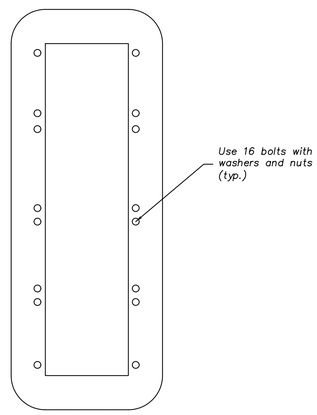

Pedestrian Signal Head Orientation Detail

Notes:

1. Bolt covers, handhole cover, and mast arm & pole caps shall be shipped with the poles and be installed prior to final acceptance of the traffic signal system.
2. Install corresponding colors of signal heads at the same elevation – adjust for mast arm rake.
3. Each vehicular signal head (mast arm and/or pole mounted) shall be covered with a black or orange (unless otherwise noted) signal head cover during construction until the system is made operational.
4. The side of pole signal head mounting heights shown are to the bottom of the housing and not to the brackets.
5. All R10-11b, R10-17a, R10-FYA, or R3-4 signs to be mounted on the traffic signal poles or mast arms shall be provided and installed by the contractor. All signs shall conform to the Manual on Uniform Traffic Control Devices, latest edition for color, size, letter and legend. (See sign details and specifications)
6. Contractor to provide and install overhead street name sign. (See mounting detail and overhead street name sign detail.)
7. Vehicle advance radar detection unit shall be mounted as close to the center of the through traffic lane(s) per manufacturer's recommendation.
8. Emergency Vehicle Pre-emption (EVP) detector shall be mounted near the center of the through traffic lane(s) to the right or left of the radar detection unit.
9. All hardware not specifically shown in the details shall be in accordance with manufacturer's recommendation. Any deviations shall be submitted for approval.
10. Minor adjustments in the location of traffic signal poles or signal controller cabinet should be made in the field during construction in order to maintain a minimum 4'-0" clearance from the centerline of any fire hydrant to the face of pole or cabinet.
11. All traffic signal heads shall have two ¼"diameter drain holes drilled in the bottom housing




3-Section Backplate




4-Section Backplate

Traffic Signal Backplates

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KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL DETAILS

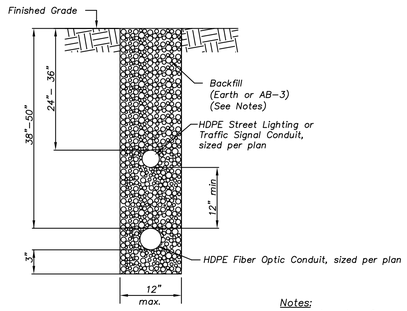
SHEET 2 OF 13

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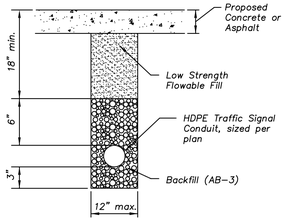
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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| KANSAS | 46 N-0661-01 | 2019 | 150 | 393 |

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Trench in Unpaved Areas

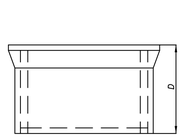


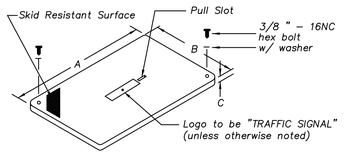

Trench w/ Single Conduit

Notes:

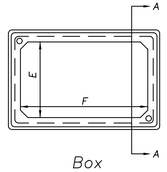
1. All trenches for conduit under proposed paved surfaces (drives, streets, and sidewalks) shall be backfilled with AB-3 to 6" above the conduit and then low strength flowable fill to below the proposed paved surface or existing terrain, unless otherwise directed.
2. Backfill in unpaved areas shall be free of rubble and rock.
3. If multiple conduits are installed, they shall have a minimum of 12" horizontal or vertical clearance between them.
4. Details are typical and information for the separation of multiple conduits are applicable whether trenching in unpaved or paved areas.

## Trenching Details

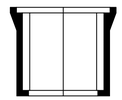



Cover




Box



Section A-A

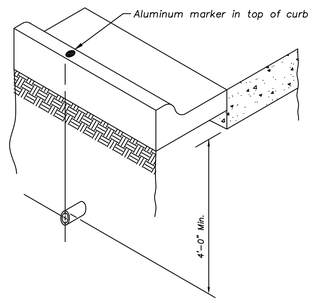
| Type | Approximate Dimension (Inches) | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| 1 - Junction | 12 7/8" | 12 7/8" | 3/4" | 12 3/4" | 9 3/4"-10 1/2" | 9 3/4"-10 1/2" |
| 2 - Junction | 18"-18 1/2" | 11 1/4"-11 1/2" | 2" | 12" | 9 1/2"-10 1/4" | 16 1/2"-17 1/4" |
| 1 - Service | 35 5/8" | 24" | 3" | 24" | 22 1/4" | 33 7/8" |
| 2 - Service (5) | 47 5/8" | 30 1/8" | 3" | 24" | 28 1/8" | 45 5/8" |
| | | | | | | |

## Fiberglass Reinforced Polymer Concrete Junction & Service Box Details

Box Notes:

1. Junction boxes shall be stackable for extra depth.
2. All junction boxes, services boxes, and covers shall be rated at no less than 22,500 lbs. test load (Tier 15) ANSI/SCTE-77.
3. Material to be an aggregate consisting of sand and gravel bound together with a polymer and reinforced with continous woven glass strands. It shall have the following properties:

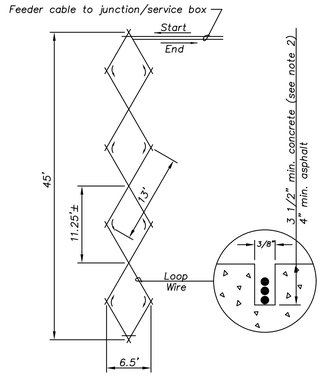
   Compressive Strength - 11,000 psi ASTM C-109/D-3410
   Tensile Strength - 1,700 psi ASTM C-496/D-638/D-2343
   Flexural Strength - 7,500 psi ASTM C-580/D-790
4. Attach 1c #10 THHN stranded copper system ground to 5/8"x 8'-0" ground rod in service box. Multiple #10 ground cables introduced at signal poles shall be terminated at ground rod with an additional clamp.
5. The Type 2 Service Box shall have a two-piece overlapping cover.



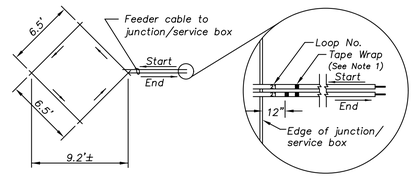

Conduit Marking Detail Notes

1. Conduit under all roadway surfaces shall be placed a minimun of 4'-0" below the bottom of pavement and shall extend to signal appurtenances as indicated in the plans. Refer to the City of Overland Park Horizontal Directional Drilling Guidelines Handbook, latest edition for further requirements for conduit installation under roadway surfaces. The conduit shall be installed to drain, and all ends shall be capped if not being used. An aluminum marker shall be placed in the top of the curb directly over the conduit. Markers shall be embedded such that the top is flush. Aluminum markers will be furnished by the City of Overland Park.
2. The contractor shall notify the City of Overland Park, Department of Public Works, Traffic Services Division at 895-6000 for inspection of the conduit installation by the City Inspector. At least 24 hours notice shall be provided. The conduit shall not be covered so as to ensure proper depth, correct conduit material, and proper conduit end treatment as described above.

## Conduit Marking Detail




Multi Diamond Loop

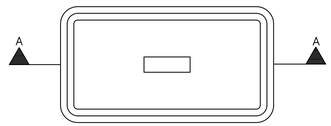



Single Diamond Loop

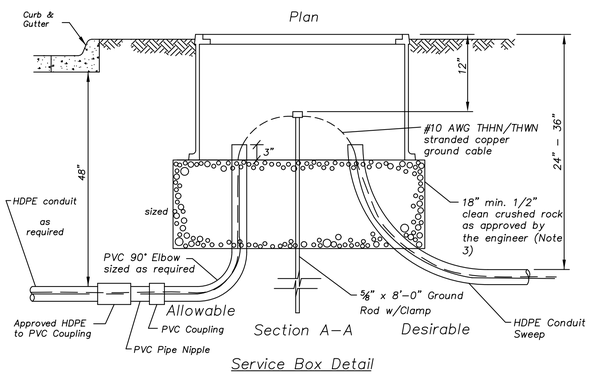
Notes:

1. Diamond presence and advance loops to be one continuous wire placed in three turns. All loops to be wound in same direction. with start and end clearly marked at junction box / service box. Each loop shall be identified with the loop number as shown on the plans, the start identified with one wrap of tape and the end identified with two wraps of tape. Three feet of excess cable shall be coiled in the box.
2. Slot in pavement for loops to be cut 3/8" wide and 4" deep minimum in asphalt or 3 1/2" deep minimum in concrete (unless otherwise directed by the engineer in charge of construction). Fill slots with an approved asphalt sealer (asphalt pavement), or an approved elastic epoxy sealant (concrete pavement) to within 1/8" of pavement surface.
3. Other than the splice from the 1c#14 loop cable to the shielded detector home-run cable, wire shall be of continuous run with no splices. All connections to be watertight.
4. All leads for individual loops to be kept separate and loop wire between the loop and the feeder cable connection shall be twisted 3 turns per foot.
5. All loops shall be wet cut with equipment approved by the engineer into the asphalt base course prior to the final lift of asphalt surface course, if applicable.
6. Sealants shall be installed by injector wand, cartridge guns or air pump method. Hot pour sealants are allowed only if cutting loop into existing pavement surfaces that are not being overloyed with the project.
7. Loop sealant in concrete pavements shall be gray in color.

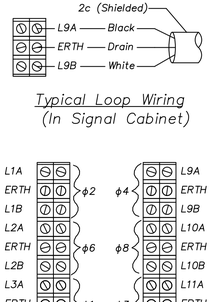
## Loop Detector Details



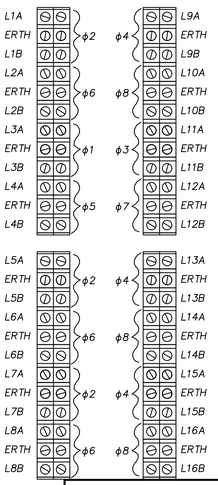

Plan



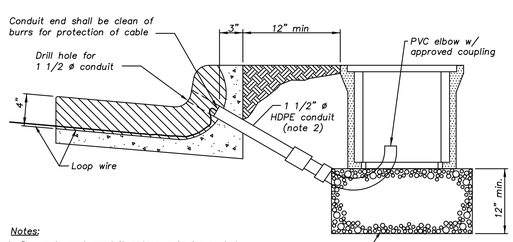

Service Box Detail




Typical Loop Wiring
(In Signal Cabinet)



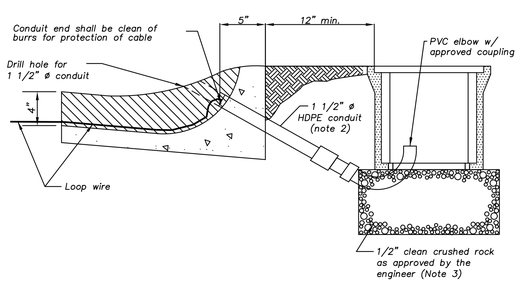

Detector Loop Interface
(In Signal Cabinet)



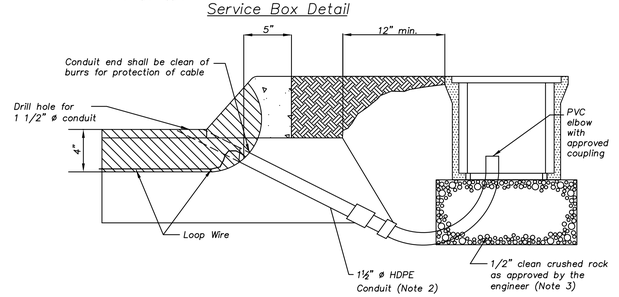

Notes:

1. Saw cuts and conduit entrance to be sealed with a pliable non-hardening duct sealant.
2. PVC conduit may be used continuous from curb to junction box if distance from back of curb to center of junction box is less than 10 feet.
3. Crushed rock shall be extended toward curb to underdrain if present.

Junction Box Detail
(Type 'B' or 'E' Curb)




Junction Box Detail
(Type 'A' Curb)




Junction Box Detail
(Type 'D' Curb)

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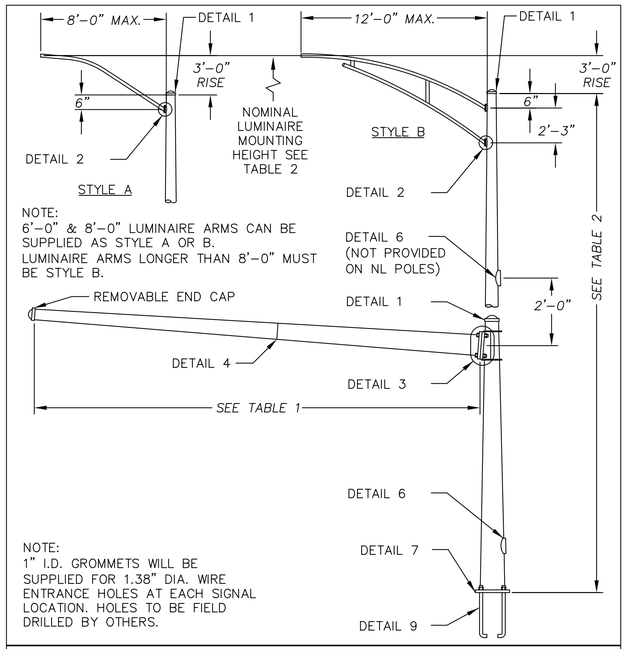
KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL DETAILS

SHEET 3 OF 13

Drawn By : lrosenbaum
File : 13668T5503.dgn
Plotted :25-APR-2019 13:01

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 151 | 393 |




NOTE:
6'-0" & 8'-0" LUMINAIRE ARMS CAN BE SUPPLIED AS STYLE A OR B. LUMINAIRE ARMS LONGER THAN 8'-0" MUST BE STYLE B.

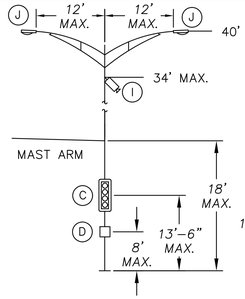
NOTE:
1" I.D. GROMMETS WILL BE SUPPLIED FOR 1.38" DIA. WIRE ENTRANCE HOLES AT EACH SIGNAL LOCATION. HOLES TO BE FIELD DRILLED BY OTHERS.

OP POLE SERIES

| DEVICE | DESCRIPTION | PROJ. AREA ($FT^2$) | WEIGHT (LBS) |
|---|---|---|---|
| A | 12"-4 SEC. SIGNAL HEAD W/ BACK PLATES | 12.00 | 54 |
| B | 12"-3 SEC. SIGNAL HEAD W/ BACK PLATES | 10.00 | 42 |
| C | 12"-4 SEC. SIGNAL HEAD W/ NO BACK PLATES | 6.00 | 40 |
| D | 16"x18"-1 SEC. PEDESTRIAN SIGNAL | 3.00 | 20 |
| E | 36"x36" FLATSHEET ALUMINUM SIGN(MAX) | 9.00 | 20 |
| F | 24"x96" ILLUMINATED STREET NAME SIGN(MAX) | 16.00 | 120 |
| G | ADVANCE RADAR DETECTOR | 1.00 | 15 |
| H | PRESENCE RADAR DETECTOR | 1.00 | 15 |
| I | CCTV CAMERA | 1.00 | 15 |
| J | LUMINAIRE | 1.00 | 30 |
| K | EMERGENCY VEHICLE PRE-EMPTION DETECTOR | 0.50 | 5 |
| L | 36"x36" FLATSHEET ALUMINUM SIGN(MAX) | 9.00 | 20 |

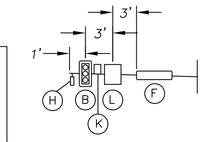
The mast arm traffic structures shown on this drawing have been designed in accordance with the loading and the allowable stress requirements of the 2013 AASHTO "Standards Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals," Sixth Edition, LTS-6. The wind loads were calculated from a basic wind velocity of 90 MPH with a recurrence interval of 25 years, and a fatigue categgary of 2. The fatigue loads were calculated on the requirements of Section 11 of the Code, and the following design conditions.

- Structures are designed to resist natural wind gusts based on the yearly mean wind velocity of 11.2 MPH.
- Structures are not designed to resist galloping-induced cyclic loads.
- Truck-induced gust loads are excluded per the requirements of the code.

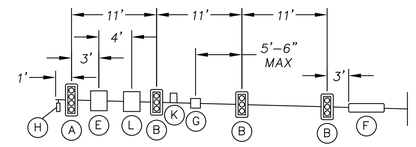



TYPICAL POST LOADING

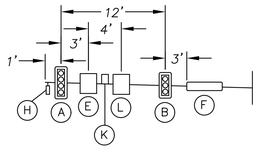
THESE DIAGRAMS ARE FOR STRUCTURAL CALCULATIONS ONLY AND SHOULD NOT BE USED AS DETAILS FOR CONTRUCTION PURPOSES



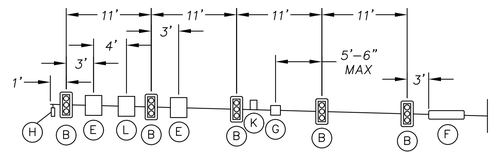

8'THRU 20' SIGNAL ARMS



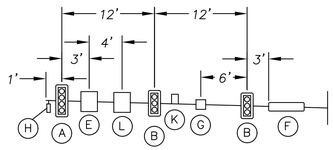

38'THRU 50' SIGNAL ARMS



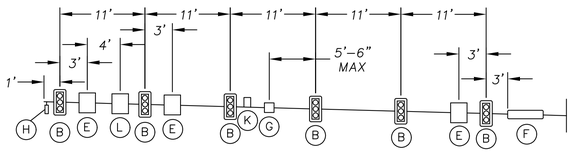

22'THRU 28' SIGNAL ARMS




52'THRU 58' SIGNAL ARMS




30'THRU 36' SIGNAL ARMS




60'THRU 70' SIGNAL ARMS

MAXIMUM LOADING INFORMATION

## TABLE 1: POLE AND SIGNAL ARM DATA

| DESIGNATION KEY | | | | | | | POLE DATA | | | BASE PLATE DATA | | | | | ANCHOR BOLT DATA | | | | | SIGNAL ARM DATA | | | | SIGNAL ARM ATTACHMENT DATA | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| POLE SERIES | SIGNAL ARM SPAN (FT) | LUMINAIRE ARM TYPE | ARM 1 STYLE | ARM 1 SPAN (FT) | ARM 2 STYLE | ARM 2 SPAN (FT) | BASE DIA. (IN) | LENGTH | WALL GAUGE OR THK. | SQUARE "S" (IN) | BOLT CIRCLE "F" (IN) | THK. "M" (IN) | CENTER HOLE "P" (IN) | BOLT HOLE "Z" (IN) | DIA. "K" (IN) | LENGTH "J" (IN) | HOOK "H" (IN) | THREAD LENGTH "U" (IN) | BOLT QTY. | FIXED END DIA (IN) | FREE END DIA (IN) | GAUGE OF THK (IN) | SIGNAL ARM SPAN (FT) | SQUARE "A" (IN) | THK. "D" (IN) | BOLT SIZE "N" (IN) | BOLT PATTERN "B" (IN) | CENTER HOLE "C" (IN) |
| OP | 20 | NL,LR,MR,HR | A OR B | 6-12 | A OR B | 6-12 | 12.00 | SEE TABLE 2 | 7 | 17.0000 | 16.00 | 2.00 | 10.50 | 1.75 | 1.50 | 54.00 | 6.00 | 8.00 | 4 | 8.00 | 5.20 | 7 | 20.00 | 17.25 | 2.00 | 1.25 X 6.25 | 14.00 | 7.00 |
| OP | 22 | NL,LR,MR,HR | A OR B | 6-12 | A OR B | 6-12 | 12.50 | SEE TABLE 2 | 5 | 17.50 | 16.50 | 2.00 | 11.00 | 1.75 | 1.50 | 54.00 | 6.00 | 8.00 | 4 | 9.00 | 5.92 | 7 | 22.00 | 17.75 | 2.00 | 1.25 X 6.25 | 14.50 | 7.64 |
| | 24 | | | | | | | | | | | | | | | | | | | 9.00 | 5.64 | 7 | 24.00 | 17.75 | 2.00 | 1.25 X 6.25 | 14.50 | 7.64 |
| | 26 | | | | | | | | | | | | | | | | | | | 9.00 | 5.36 | 7 | 26.00 | 17.75 | 2.00 | 1.25 X 6.25 | 14.50 | 7.50 |
| | 28 | | | | | | | | | | | | | | | | | | | 9.00 | 5.08 | 7 | 28.00 | 17.75 | 2.00 | 1.25 X 6.25 | 14.50 | 7.50 |
| OP | 30 | NL,LR,MR,HR | A OR B | 6-12 | A OR B | 6-12 | 13.00 | SEE TABLE 2 | 3 | 18.50 | 17.50 | 2.00 | 11.50 | 2.00 | 1.75 | 84.00 | 6.00 | 8.00 | 4 | 10.00 | 5.80 | 7 | 30.00 | 18.25 | 2.00 | 1.25 X 6.25 | 15.00 | 8.50 |
| | 32 | | | | | | | | | | | | | | | | | | | 10.50 | 6.02 | 7 | 32.00 | 18.25 | 2.00 | 1.25 X 6.25 | 15.00 | 8.75 |
| | 34 | | | | | | | | | | | | | | | | | | | 11.00 | 6.24 | 7 | 34.00 | 18.25 | 2.00 | 1.25 X 6.25 | 15.00 | 9.00 |
| | 36 | | | | | | | | | | | | | | | | | | | 11.00 | 5.96 | 7 | 36.00 | 18.25 | 2.00 | 1.25 X 6.25 | 15.00 | 9.00 |
| OP | 38 | NL,LR,MR,HR | A OR B | 6-12 | A OR B | 6-12 | 16.00 | SEE TABLE 2 | 0.250 | 22.00 | 21.00 | 2.25 | 14.00 | 2.00 | 1.75 | 84.00 | 6.00 | 8.00 | 4 | 13.00 | 7.68 | 3 | 38.00 | 21.25 | 2.00 | 1.25 X 6.25 | 18.00 | 11.50 |
| | 40 | | | | | | | | | | | | | | | | | | | 13.00 | 7.76 | DET. 4 | 40.00 | 21.25 | 2.00 | 1.25 X 6.25 | 18.00 | 10.50 |
| | 42 | | | | | | | | | | | | | | | | | | | 13.00 | 7.48 | DET. 4 | 42.00 | 21.25 | 2.00 | 1.25 X 6.25 | 18.00 | 10.50 |
| | 44 | | | | | | | | | | | | | | | | | | | 13.00 | 7.20 | DET. 4 | 44.00 | 21.25 | 2.00 | 1.25 X 6.25 | 18.00 | 10.50 |
| | 46 | | | | | | | | | | | | | | | | | | | 14.00 | 7.92 | DET. 4 | 46.00 | 21.25 | 2.00 | 1.25 X 6.25 | 18.00 | 11.25 |
| | 48 | | | | | | | | | | | | | | | | | | | 14.00 | 7.64 | DET. 4 | 48.00 | 21.25 | 2.00 | 1.25 X 6.25 | 18.00 | 11.25 |
| | 50 | | | | | | | | | | | | | | | | | | | 14.50 | 7.86 | DET. 4 | 50.00 | 21.25 | 2.00 | 1.25 X 6.25 | 18.00 | 11.75 |
| OP | 52 | NL,LR,MR,HR | A OR B | 6-12 | A OR B | 6-12 | 17.00 | SEE TABLE 2 | 0.250 | 23.00 | 22.00 | 2.25 | 14.75 | 2.25 | 2.00 | 84.00 | 6.00 | 10.00 | 4 | 14.00 | 7.08 | DET. 4 | 52.00 | 23.25 | 2.50 | 1.50 X 7.50 | 19.50 | 11.75 |
| | 54 | | | | | | | | | | | | | | | | | | | 15.00 | 7.80 | DET. 4 | 54.00 | 23.25 | 2.50 | 1.50 X 7.50 | 19.50 | 12.50 |
| | 56 | | | | | | | | | | | | | | | | | | | 15.00 | 7.52 | DET. 4 | 56.00 | 23.25 | 2.50 | 1.50 X 7.50 | 19.50 | 12.50 |
| | 58 | | | | | | | | | | | | | | | | | | | 15.50 | 7.74 | DET. 4 | 58.00 | 23.25 | 2.50 | 1.50 X 7.50 | 19.50 | 13.00 |
| OP | 60 | NL,LR,MR,HR | A OR B | 6-12 | A OR B | 6-12 | 20.00 | SEE TABLE 2 | 0.250 | 28.00 | 27.00 | 2.25 | 14.25 | 2.25 | 2.00 | 84.00 | 6.00 | 10.00 | 4 | 16.00 | 7.98 | DET. 4 | 60.00 | 26.75 | 2.50 | 1.50 X 7.50 | 23.00 | 8.75 |
| | 62 | | | | | | | | | | | | | | | | | | | 16.50 | 8.20 | DET. 4 | 62.00 | 26.75 | 2.50 | 1.50 X 7.50 | 23.00 | 9.25 |
| | 64 | | | | | | | | | | | | | | | | | | | 17.00 | 8.42 | DET. 4 | 64.00 | 26.75 | 2.50 | 1.50 X 7.50 | 23.00 | 9.50 |
| | 66 | | | | | | | | | | | | | | | | | | | 17.50 | 8.64 | DET. 4 | 66.00 | 26.75 | 2.50 | 1.50 X 7.50 | 23.00 | 9.75 |
| | 68 | | | | | | | | | | | | | | | | | | | 18.50 | 9.36 | DET. 4 | 68.00 | 26.75 | 2.50 | 1.50 X 7.50 | 23.00 | 10.50 |
| | 70 | | | | | | | | | | | | | | | | | | | 18.50 | 9.08 | DET. 4 | 70.00 | 26.75 | 2.50 | 1.50 X 7.50 | 23.00 | 10.50 |

## TABLE 2: ELEVATIONS

| ELEVATIONS | TYPE | | | |
|---|---|---|---|---|
| | NO LUM (NL) | LOW RISE (LR) | MEDIUM RISE (MR) | HIGH RISE (HR) |
| LUMINAIRE MOUNTING HEIGHT | N/A | 30'-0" | 35'-0" | 40'-0" |
| POLE LENGTH | 20'-6" | 27'-0" | 32'-0" | 37'-0" |

## TABLE 3: MATERIAL DATA

| COMPONENT | ASTM DESIGNATION | MIN. YIELD (KSI) |
|---|---|---|
| ALL TAPERED SHAFTS | A595 GR.A OR A572 | 55 |
| BASE PLATE | A572 GR. 50 | 50 |
| SIMPLEX PLATE | A572 GR.50 | 50 |
| LUM ARM ATTACHMENT | A27 GR. 65-35 OR A36 | 35 |
| LUMINAIRE ARM - 2" SCHEDULE 40 PIPE | ASTM A501, A513, A618 OR A500 GR. B | 36 |
| LUMINAIRE CONN. BOLTS | SAE GR.5 | -- |
| ANCHOR BOLTS | F1554 GR.55 | 55 |
| GALVANIZING-STRUCTURES | A123 | -- |
| GALVANIZING-HARDWARE | HOT DIP ZINC | -- |

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL DETAILS

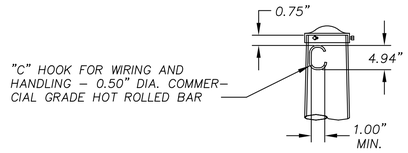
SHEET 4 OF 13

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |

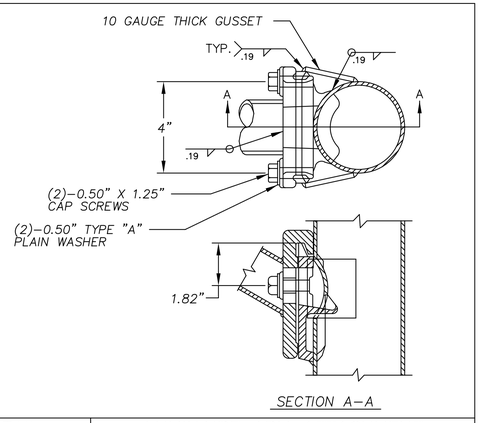
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Drawn By : lrosenbaum
File : 1366tt5504.dgn

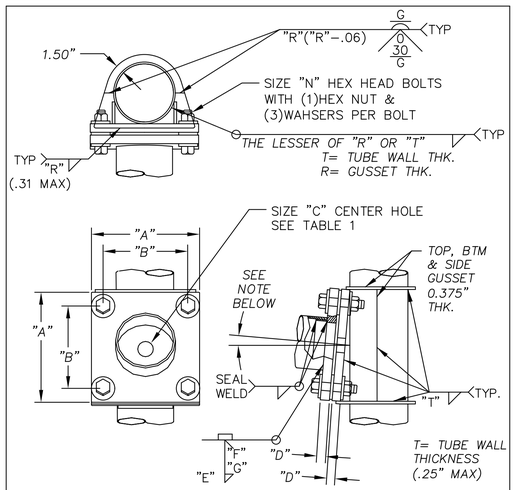
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 152 | 393 |




DETAIL | POLE TOP



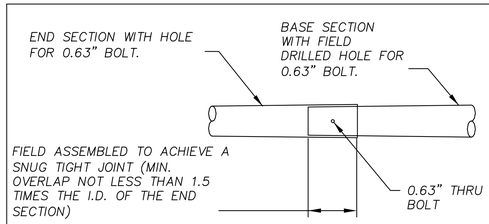

DETAIL | LUMINAIRE ARM ATTACHMENT




RISE NOTE:
RISE SHALL BE BUILT IN THE MOUNTING PLATE ATTACHED TO THE POLE. RISE IN MTG PLATES MAY VARY DEPENDED UPON POLE SIZE AND MAST ARM LOADING.

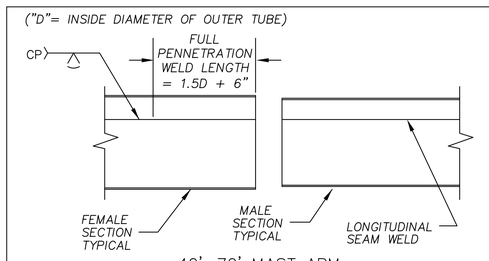
| ARM SHAFT WALL THK. | ARM–TO–PLATE WELD "E" | BEVEL "F"X"G" |
|---|---|---|
| ALL | (ARM THK.+.25") X ARM THK. | .19" X 30° |

DETAIL | SIGNAL ARM ATTACHMENT



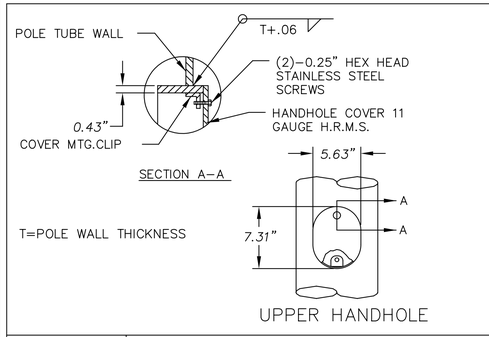

| SPAN (FT) | BASE SECTION LENGTH (FT) | BASE SECTION GAUGE/THK. (IN) | END SECTION BASE DIA. (IN) | END SECTION LENGTH (FT) | END SECTION GAUGE/THK. (IN) |
|---|---|---|---|---|---|
| 40.00 | 19.29 | 0.313 | 11.00 | 23.15 | 7 |
| 42.00 | 19.29 | 0.313 | 11.00 | 25.15 | 7 |
| 44.00 | 19.29 | 0.313 | 11.00 | 27.15 | 7 |
| 46.00 | 26.43 | 0.313 | 11.00 | 22.01 | 7 |
| 48.00 | 26.43 | 0.313 | 11.00 | 24.01 | 7 |
| 50.00 | 15.97 | 0.313 | 13.00 | 36.72 | 7 |
| 52.00 | 19.42 | 0.375 | 12.00 | 35.15 | 7 |
| 54.00 | 19.54 | 0.375 | 13.00 | 37.15 | 7 |
| 56.00 | 19.54 | 0.375 | 13.00 | 39.15 | 7 |
| 58.00 | 23.11 | 0.375 | 13.00 | 37.58 | 7 |
| 60.00 | 19.75 | 0.375 | 14.00 | 43.07 | 0.188 |
| 62.00 | 19.83 | 0.375 | 14.50 | 45.05 | 0.188 |
| 64.00 | 19.92 | 0.375 | 15.00 | 47.02 | 0.188 |
| 66.00 | 27.00 | 0.375 | 14.50 | 41.88 | 0.188 |
| 68.00 | 27.08 | 0.375 | 15.50 | 43.93 | 0.188 |
| 70.00 | 27.08 | 0.375 | 15.50 | 45.93 | 0.188 |

DETAIL | 40'–70'SIGNAL ARM SLIP JOINT



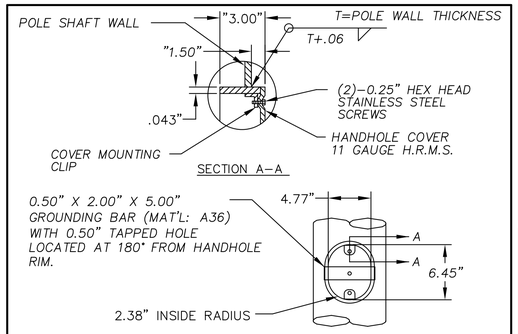

40'–70' MAST ARM WELD REINFORCEMENT

DETAIL | MAST ARM WELD REINFORCEMENT

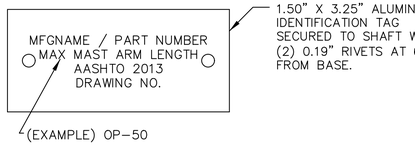



UPPER HANDHOLE

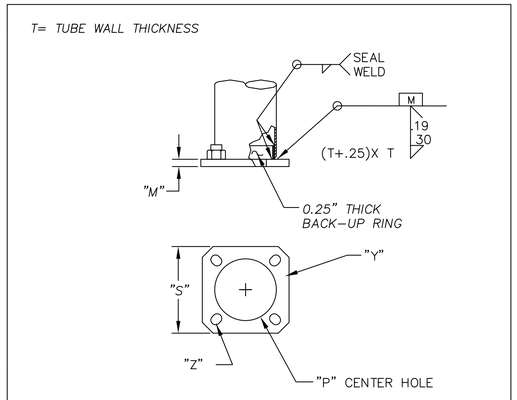
DETAIL | UPPER HANDHOLE



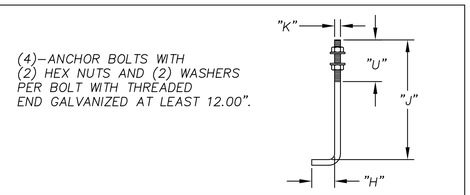

DETAIL | LOWER HANDHOLE



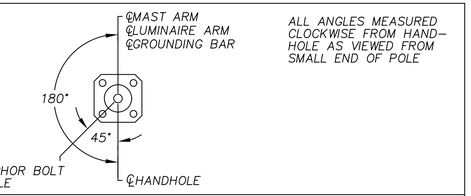

DETAIL 8 | I.D. TAG



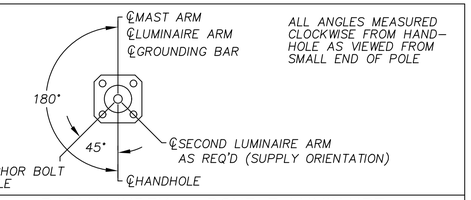

DETAIL | POLE BASE




DETAIL | ANCHOR BOLT




RADIAL INDEX – SINGLE LUMINAIRE




RADIAL INDEX – DOUBLE LUMINAIRE

TABLE 3: MATERIAL DATA

| COMPONENT | ASTM DESIGNATION | MIN. YIELD (KSI) |
|---|---|---|
| ALL TAPERED SHAFTS | A595 GR.A OR A572 | 55 |
| BASE PLATE | A572 GR. 50 | 50 |
| SIMPLEX PLATE | A572 GR.50 | 50 |
| LUM ARM ATTACHMENT | A27 GR. 65–35 OR A36 | 35 |
| LUMINAIRE ARM – 2" SCHEDULE 40 PIPE | ASTM A501, A513, A618 OR A500 GR. B | 36 |
| LUMINAIRE CONN. BOLTS | SAE GR.5 | -- |
| ANCHOR BOLTS | F1554 GR.55 | 55 |
| ARM CONNECTING HARDWARE | A325 | -- |
| GALVANIZING–HARDWARE | HOT DIP ZINC | -- |

FINISH DATA

| STANDARD FINISH | OPTIONAL FINISH |
|---|---|
| SYSTEM: GALVANIZED (GV) | SYSTEM: FINISH PAINT/GALVANIZED (FPGV) |
| BASE COAT: HOT–DIP GALV. TO ASTM A123 | BASE COAT: HOT–DIP GALVANIZED TO ASTM A123 |
| PRIME COAT: NONE | PRIME COAT: NONE |
| FINISH COAT: NONE | FINISH COAT: TGIC OR URETHANE POLYESTER POWDER |
| COLOR: NONE | COLOR: TBD |
| SPEC: F–1 | SPEC: TBD |

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL DETAILS

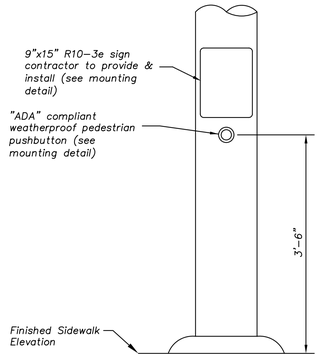
SHEET 5 OF 13

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted :25-APR-2019 13:01

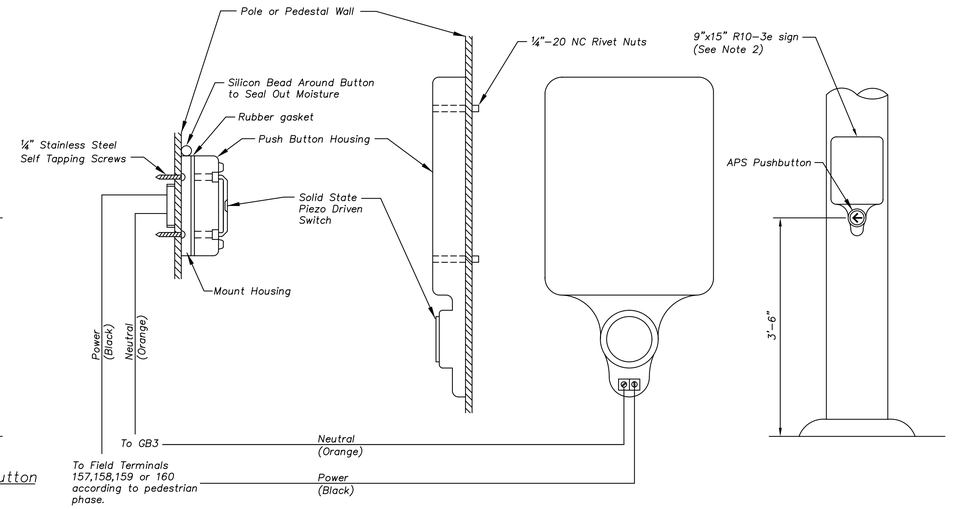
Drawn By : lrosenbaum
File : 1366tt5505.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 153 | 393 |

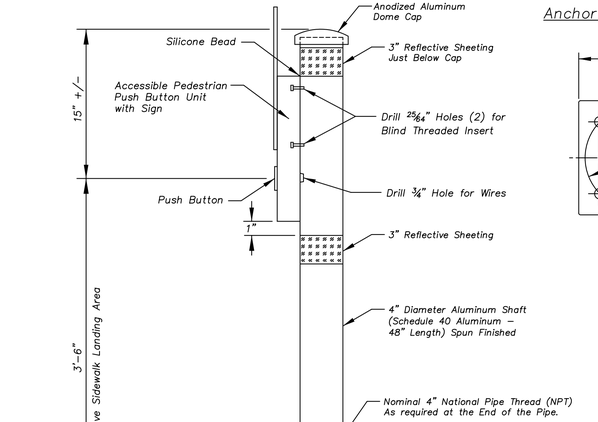



Standard Pedestrian Pushbutton

Notes:
1. Pedestrian pushbuttons to be located in the field by the engineer.
2. Maintain a 10" maximum reach from an accessible sidewalk to the pedestrian push button

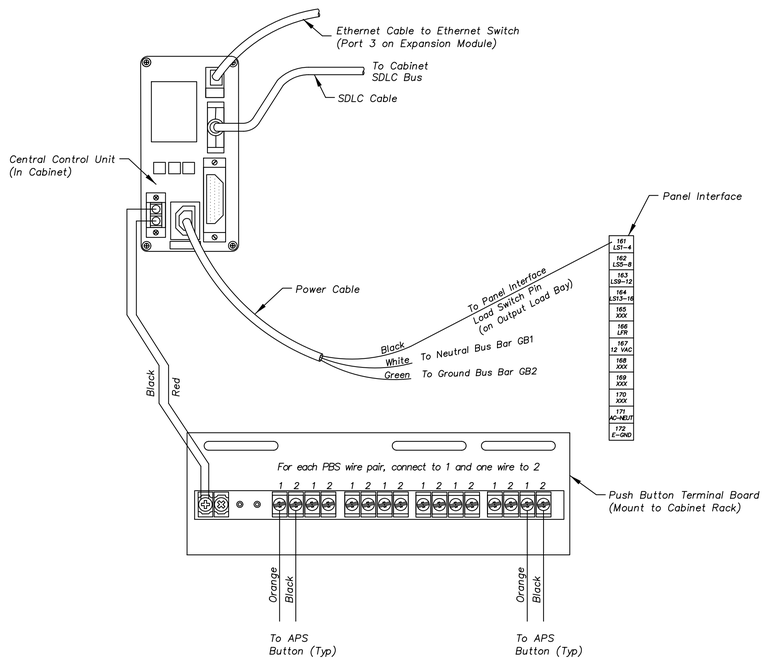



Pushbutton Mount Details



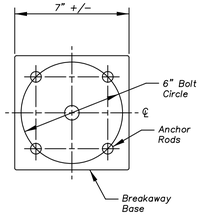

Audible Pedestrian Pushbutton

Notes:
1. Requires pole adapter when mounting two units on the same pedestal pole.
2. Include a 9" x 15" R10-3e sign with each assembly.
3. Other mounting extension brackets are available if a 10" maximum reach from an accessible sidewalk cannot be achieved.




Audible Pedestrian Pushbutton Wiring Diagram

Anchor Bolt Placement





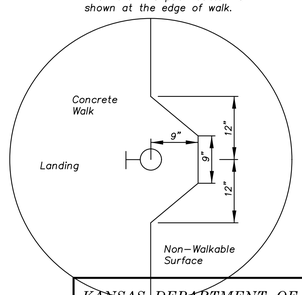


Note:
1. Placement and orientation of the push button station is critical. Mount the button so that the face is parallel with the associated crosswalk. Screw in shaft to a tightened position before mounting accessible pedestrian push button unit to the shaft.
2. Orient access opening on the breakaway pedestal directly below the APS button
3. Plumb the push button station with stainless steel washers.
4. Install blind threaded inserts using manufacturers specific insertion tool.
5. Use zinc plated steel ¼ – 20 UNC blind threaded inserts suitable for mounting on surface wall thickness of .337.
6. Use APS ¼ – 20 stainless steel mounting bolts. Apply brush on anti seize compound to bolts prior to assembly.
7. Apply a bead of 100% silicone sealant along the top of the push button unit where it comes in contact with the 4" shaft.
8. Use white reflective sheeting at intersection corners and yellow reflective sheeting in center medians.
9. An 18" diameter x 6" deep fiber forming tube may be used for the lower half of the foundation when conditions do not allow for the hole to stand open.
10. All concrete used in this work shall meet the requirements of the Overland Park Municipal Code and shall be KCMMB (f: = 4000 psi).

(1) The push button station foundation is monolithic (poured at one time) with the sidewalk. Provide a 2:1 (H:V) slope grade where the 6" min sidewalk depth transitions to the 12" min foundation depth. Maintain the compacted aggregate bedding and thickness used for the sidewalk throughout the slope and foundation grading. Provide 2:1 (H:V) slope grading 360 degrees for the transition from the sidewalk to the foundation when the foundation is not located near the edge of sidewalk and is surrounded by concrete walk.

(2) Ensure concrete control joints and edge of concrete walk are a minimum 9" from the center of the push button foundation.

Contractor must use this detail when the APS push button is shown at the edge of walk.




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KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL DETAILS

SHEET 6 OF 13

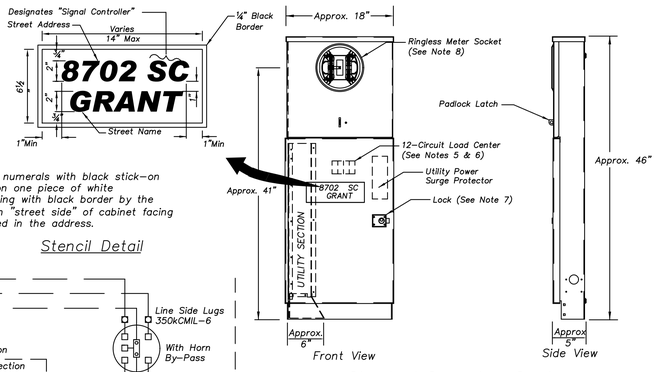
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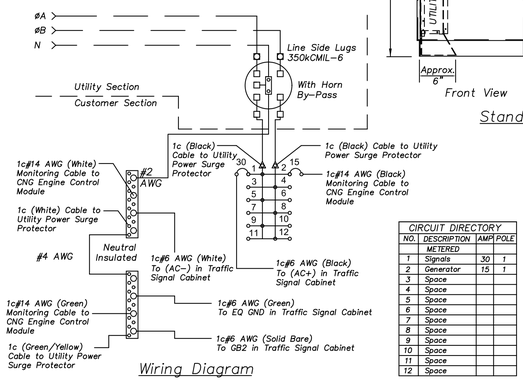
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| KANSAS | 46 N-0661-01 | 2019 | 154 | 393 |

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
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Stencil Detail Note:
2" high letters and numerals with black stick-on sign sheeting film on one piece of white retroreflective sheeting with black border by the contractor. Apply on "street side" of cabinet facing the street referenced in the address.

Stencil Detail

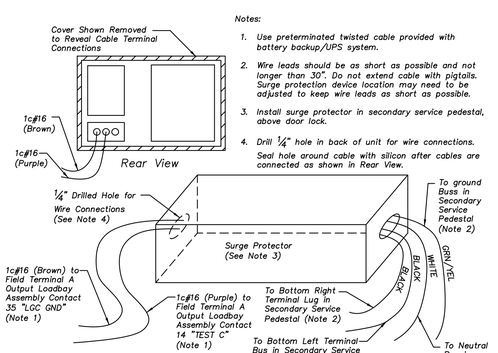



Wiring Diagram

Standard Secondary Service Enclosure Detail

Notes:
1. Enclosure to be 0.125 inch corrosion resistant aluminum built to U.L. specification (NEMA 3R)
2. All factory installed wire to be copper with 600V insulation.
3. Service terminations to accommodate 6 AWG to 250 MCM AWG copper/aluminum.
4. Finish: Natural aluminum.
5. 30 AMP circuit breaker for signals.
6. 15 AMP circuit breaker for CNG Generator, if applicable.
7. Tapered Latch & Corbin No. 2 Lock.
8. Exposed 200 AMP, 120V 5 terminal meter socket w/horn bypass and ringless cover.
9. Mount utility power surge protection device to inside of secondary service pedestal.

| CIRCUIT DIRECTORY | | | |
|---|---|---|---|
| NO. | DESCRIPTION | AMP | POLE |
| | METERED | | |
| 1 | Signals | 30 | 1 |
| 2 | Generator | 15 | 1 |
| 3 | Space | | |
| 4 | Space | | |
| 5 | Space | | |
| 6 | Space | | |
| 7 | Space | | |
| 8 | Space | | |
| 9 | Space | | |
| 10 | Space | | |
| 11 | Space | | |
| 12 | Space | | |



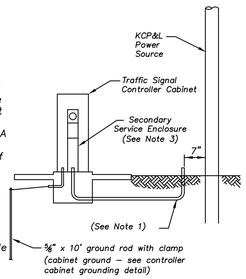

Utility Power Surge Protector Detail

Notes:
1. Use preterminated twisted cable provided with battery backup/UPS system.
2. Wire leads should be as short as possible and not longer than 30". Do not extend cable with pigtails. Surge protection device location may need to be adjusted to keep wire leads as short as possible.
3. Install surge protector in secondary service pedestal, above door lock.
4. Drill ¼" hole in back of unit for wire connections. Seal hole around cable with silicon after cables are connected as shown in Rear View.

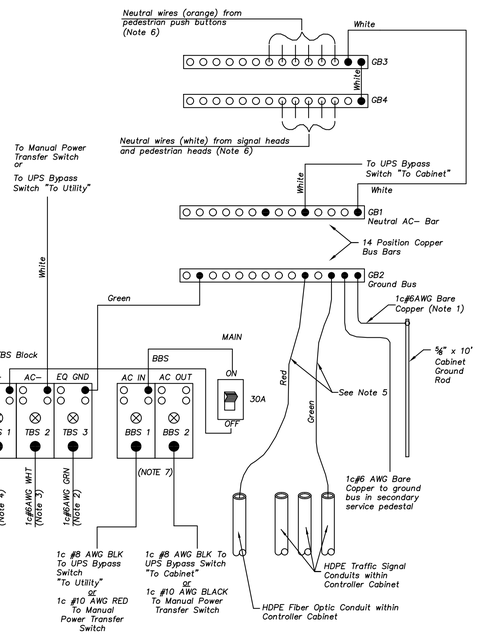
Service Connection Notes:

Power

1. Contractor shall install 2" Schedule 40 PVC (gray) conduit or 2" SDR 13.5 HDPE (black w/ red stripes) conduit. The conduit shall be installed 30" deep with 36" radius 90° PVC elbow to within 7" of the base of the power source and at the controller cabinet. The end of the conduit sweep shall be temporarily exposed until KCP&L completes the service hook-up. A lighted Type 1 barricade shall be placed at the excavation or the area blocked off by orange safety fencing.
2. Contractor shall install electrical service power cable from secondary service pedestal to the KCP&L power source. Contractor shall connect cables to the meter lugs & coil enough slack at the power source to extend up the power pole or to connect in the power pedestal.
3. Aluminum secondary service enclosure is a combination meter can/breaker box (see plans).



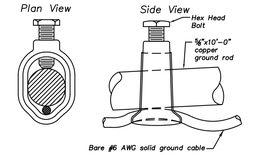

Service Connection Details



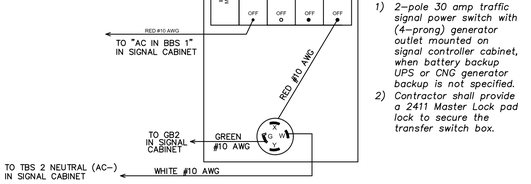

Controller Cabinet Grounding Detail

Controller Cabinet Grounding Notes:

1. The contractor shall install a 1c#6 AWG bare copper ground wire continuous from the ground bus bar GB2 to the 5/8" x 10' long cabinet ground rod.
2. The contractor shall install a 1c#6 AWG ground wire from the ground bus bar in the secondary service enclosure to the EQ GND (Power Terminal TBS 3 Block).
3. The contractor shall install a 1c#6 AWG neutral wire from the neutral bus bar in the secondary service enclosure to the AC- (Power Terminal TBS 2 Block).
4. The contractor shall install a 1c#6 AWG positive wire from the 30A breaker in the secondary service enclosure to the AC+ (Power Terminal TBS 1 Block).
5. The contractor shall provide 1c#10 THNN/THWN stranded copper ground wire (green) from the ground bus GB2 through the traffic signal conduit system and a 1c#10THHN/THWN stranded locating wire (red) from the ground bus GB2 through the fiber optic conduit system.
6. The contractor shall install the neutral wires (white) for the traffic signal cables to the Neutral Bus Bar GB4 and the neutral wires (orange) for the pedestrian push buttons to the Neutral Bus Bar GB3.
7. If backup power provisions are specified, the contractor shall remove the jumper wire between "AC IN BBS 1" and "AC OUT BBS 2". If a battery backup UPS is specified, the contractor shall install 1c #8 AWG cables from "AC IN BBS 1" to UPS Bypass Switch "To Utility" and from "AC OUT BBS 2" to UPS Bypass Switch "To Cabinet. If a manual power transfer switch is specified, the contractor shall install a red 1c #10 AWG cable from "AC IN BBS 1" and a black 1c #10 AWG from "AC OUT BBS 2" to the appropriate terminals in the manual power transfer switch (See Detail)

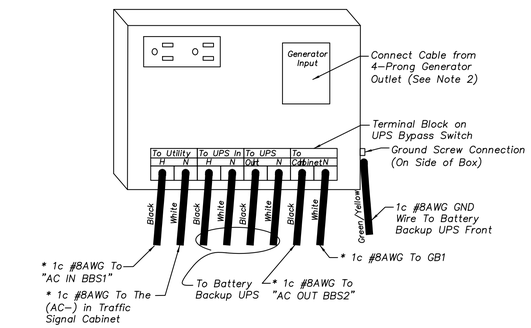



Ground Rod Clamp Connection Detail



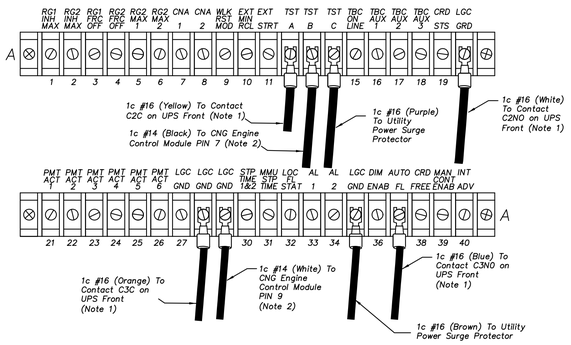

Notes:
1) 2-pole 30 amp traffic signal power switch with (4-prong) generator outlet mounted on signal controller cabinet, when battery backup UPS or CNG generator backup is not specified.
2) Contractor shall provide a 2411 Master Lock pad lock to secure the transfer switch box.

Power Transfer Switch Wiring Diagram



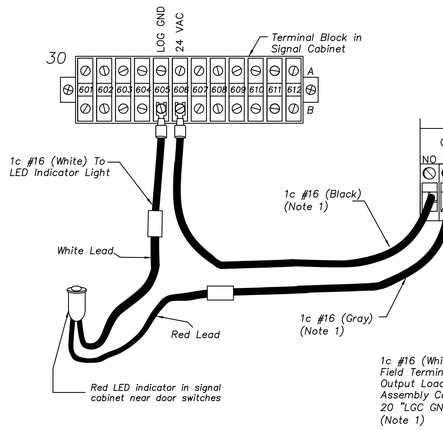

Notes:
1. Cables designated with * shall be terminated with crimp on terminal connectors.
2. Generator input plug is required for stand alone battery backup systems with a 4-prong generator outlet and 8' cable.

Electrical Service / UPS Connection Wiring Diagram

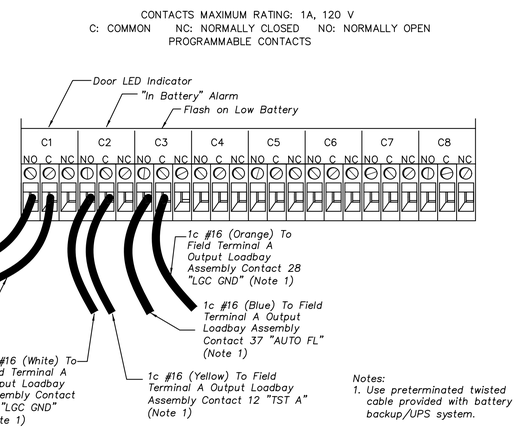



Notes:
1. Use pre-terminated twisted cable provided with battery backup/UPS system.
2. Use 2c #14 shielded detector wire (for alarm cable) with insulated jacket through conduit to CNG generator. Break out individual black and white conductors in traffic signal cabinet and CNG generator cabinet.

Field Terminal Rear Panel (in Signal Cabinet)




Cabinet Door LED Indicator Light Wiring Diagram




Notes:
1. Use preterminated twisted cable provided with battery backup/UPS system.

UPS Contact Closure Wiring Diagram (Contact Closures Located on Front of UPS)

Physical wire location varies per manufacturer. All wire should be connected to "normally open"(NO) or "Common" (C)

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KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL DETAILS

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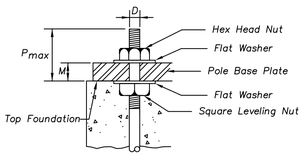
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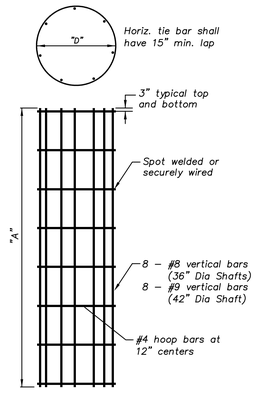
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|---|---|---|---|
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| Table 1 – Anchor Bolt Projection Dimensions | | |
|---|---|---|
| Bolt Diameter | Plate Thickness "M" | Maximum Bolt Projection "P" |
| 1.50" | 2.00" | 6 ¼" ± ¼ |
| 1.75" | 2.00" | 6 ¾" ± ¼" |
| 1.75" | 2.25" | 7" ± ¼" |
| 2.00" | 2.25" | 7 ½" ± ¼" |



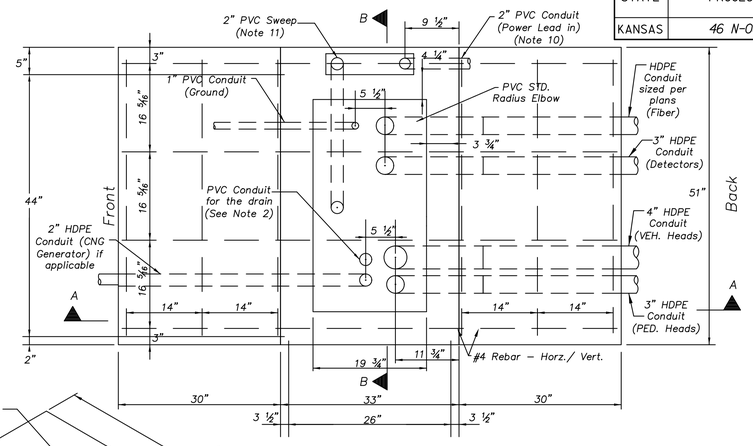

Anchor Bolt Detail

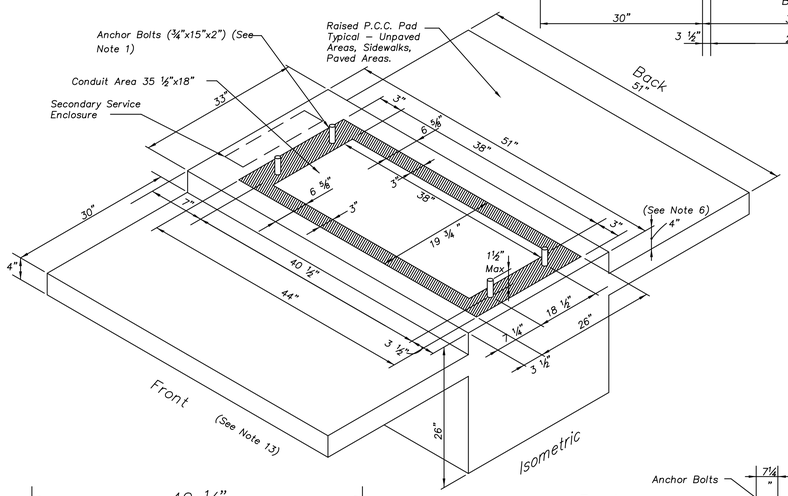


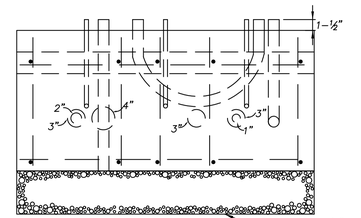

Rebar Cage Detail

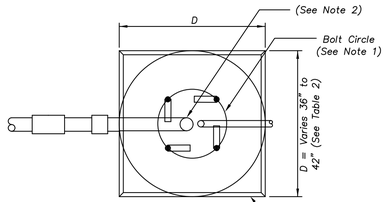
| Horizontal Rebar | | | |
|---|---|---|---|
| Pole Fnd. Dia. | Pole Fnd Depth | Rebar Clr. "D" | Spacing |
| 24" | 30" | 20" | 12" MAX. |
| 36" | 11'–13' | 30" | 12" MAX. |
| 42" | 15'–21' | 36" | 12" MAX. |

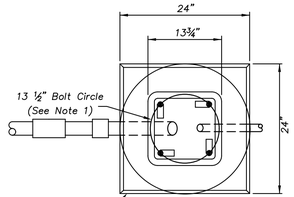
| Vertical Rebar | |
|---|---|
| Pole Fnd. Depth | Length "A" |
| 30" | 2'–3" |
| 11'–0" | 10'–9" |
| 12'–0" | 11'–9" |
| 13'–0" | 12'–9" |
| 15'–0" | 14'–9" |
| 17'–0" | 16'–9" |
| 21'–0" | 20'–9" |

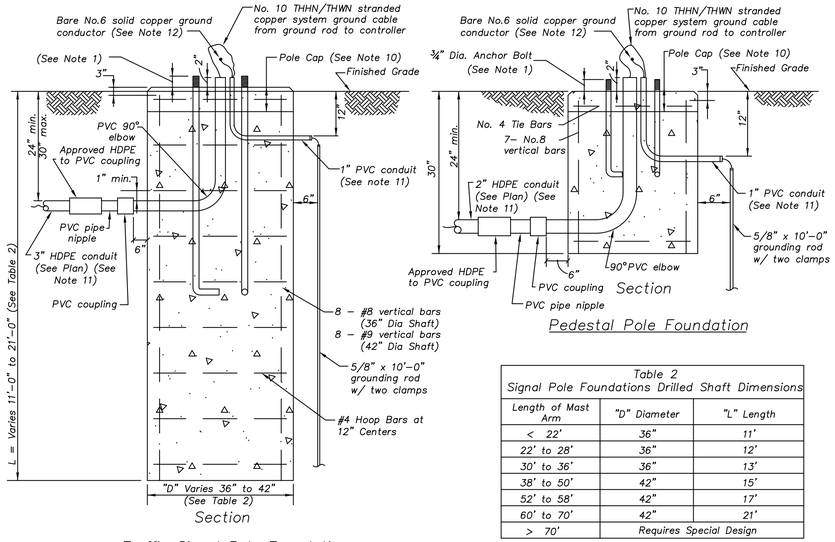


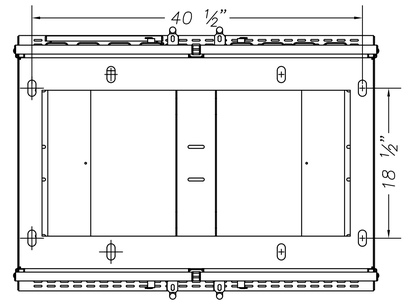




Traffic Signal Pole Foundation

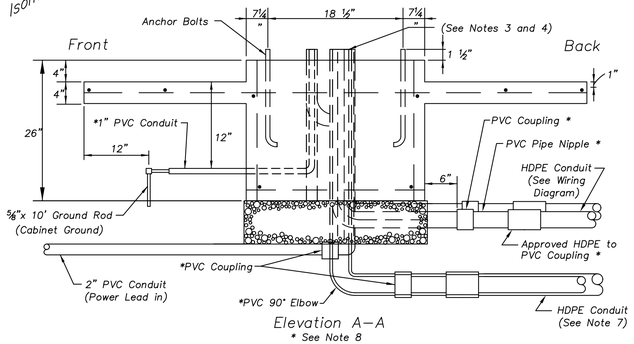



Pedestal Pole Foundation

| Table 2 Signal Pole Foundations Drilled Shaft Dimensions | | |
|---|---|---|
| Length of Mast Arm | "D" Diameter | "L" Length |
| < 22' | 36" | 11' |
| 22' to 28' | 36" | 12' |
| 30' to 36' | 36" | 13' |
| 38' to 50' | 42" | 15' |
| 52' to 58' | 42" | 17' |
| 60' to 70' | 42" | 21' |
| > 70' | Requires Special Design | |




Signal Controller Foundation Bolt Pattern




Controller Cabinet Pad Details
(Double Wide Hybrid)

Signal Controller Pad Notes:
1. All conduits and anchor bolts shall be rigidly installed before concrete is placed.
2. Top of pad to be sloped to drain toward PVC drain. Drain can be relocated as necessary to match conditions.
3. A 1–c#10 THHN/THWN stranded copper system ground cable shall be installed through one of the HDPE conduits between the controller and closet service box (See controller cabinet grounding detail).
4. Duct seal shall be applied at all conduit entrances after cable installation.
5. A watertight seal shall be applied along the inside and outside edges of the cabinet where it abutts to the concrete pad and around the secondary service enclosure where it abutts to the cabinet.
6. 4" is nominal dimension. 2"x4" forms are acceptable except where otherwise noted or directed (exposed concrete surfaces shall be formed by other means for an acceptable finished appearance).
7. HDPE conduit (orange in color) with a #10 AWG stranded copper locating cable and polypropylene pull rope sized per plan.
8. PVC conduit elbows in concrete foundations shall be connected to HDPE conduit with PVC pipe nipple and approved PVC to HDPE couplings. All PVC pipe nipples, elbows and couplings shall be considered subsidiary to the traffic signal controller pad.
9. Contractor to install concrete anchors and bolts per manufacturer's recommendation to anchor secondary service enclosure to concrete foundation. Also anchor to signal cabinet with sheet metal screws.
10. Contractor shall install a 36" radius, large sweep 90° elbow at each end of power lead–in conduit. Material shall be Schedule 40 PVC (gray) or SDR 13.5 HDPE (black with red stripe).
11. Contractor shall install 180° PVC conduit sweeps from secondary service pedestal sweeping up into the controller cabinet.
12. Contractor to provide ground rod(s) as required for maximum of 25 ohms resistance to ground. Contractor shall be required to test with the inspector present.
13. Cabinet shall be oriented such that when the technician is facing the front of the cabinet, he can look over the top and see the intersection ahead of them.
14. All reinforcing steel shall be ASTM A615 GR60.
15. All concrete surfaces shall be brushed and sealed with curing compound.

Pole Foundation Notes:
1. Final pole, anchor bolt size, anchor bolt projection, and bolt circle shall be as per manufacturer's recommended practices (See Table 1). Rotate anchor bolt to maintain minimum clearance from edge of hole.
2. All conduits and anchor bolts for all the new pole bases shall be rigidly installed before concrete is placed. Anchor bolts shall be spaced by means of a factory certified template or drawing, the center of which shall coincide with the center of the base.
3. All concrete used in this work shall meet the requirements of the Overland Park Municipal Code and shall be KCMMB4K concrete ($f'_c$ = 4,000 psi). Poles shall not be erected until concrete has reached 3,400 psi.
4. Reinforcing steel shall have 60 ksi yield strength: Maintain 3" minimum clearance from reinforcing steel to edge of hole or form for mast arm poles and 1 ½" minimum clearance for pedestal poles.
5. The drilled shaft foundation details presented herein are intended for installation into soil foundations. A special foundation investigation and design shall be conducted for residual soils with an "N" value of 4 or less or characterized as very soft to soft clay.
6. These standard designs assume a minimum compactive effort of 90% of Standard or Modified Proctor for cohesive fill material.
7. In the event excavation for the drilled shaft encounters sound limestone short of the required length shown in the table of dimensions, the shaft may be shortened to a minimum length of 8 feet with a minimum inclusive rock socket of 3 feet.
8. Shale foundation material will be considered as a stiff clay. Drilled shafts in shale must satisfy the dimensions on Table 2.
9. All concrete pole bases shall be consolidated by an internal type vibrator.
10. Final 6" of concrete foundation (pole cap) shall be formed square. The cap shall be formed and poured after the mast arm is erected and the pole plumb. Pole cap for pedestal pole shall be required at inspector discretion. Final top elevation shall match ADA sidewalk ramp.
11. PVC conduit elbows in concrete foundations shall be connected to HDPE conduit with PVC pipe nipple and approved PVC to HDPE couplings. all PVC pipe nipples, elbows, and couplings shall be considered subsidiary to the traffic signal pole base.
12. Bare No. 6 solid copper ground conductor shall be connected from internal pole grounding nut with a ring terminal to the clamp on the ground rod.
13. All reinforcing steel shall be ASTM A615 GR60.
14. All concrete surfaces should be brushed and sealed with curing compound.

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KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL DETAILS

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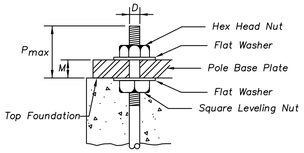
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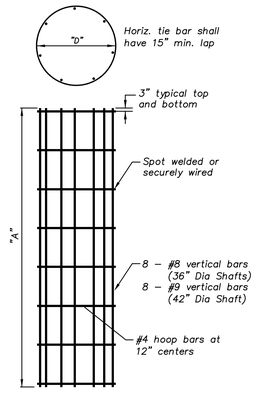
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| Table 1 – Anchor Bolt Projection Dimensions | | |
|---|---|---|
| Bolt Diameter | Plate Thickness "M" | Maximum Bolt Projection "P" |
| 1.50" | 2.00" | 6 ¼" ± ¼ |
| 1.75" | 2.00" | 6 ¾" ± ¼" |
| 1.75" | 2.25" | 7" ± ¼" |
| 2.00" | 2.25" | 7 ½" ± ¼ " |



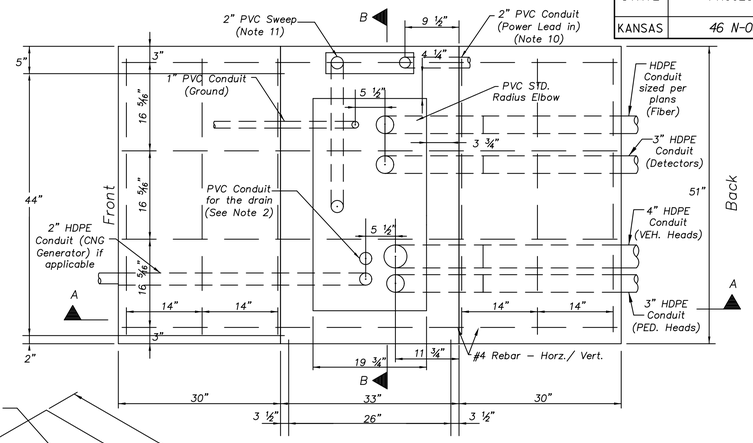

Anchor Bolt Detail

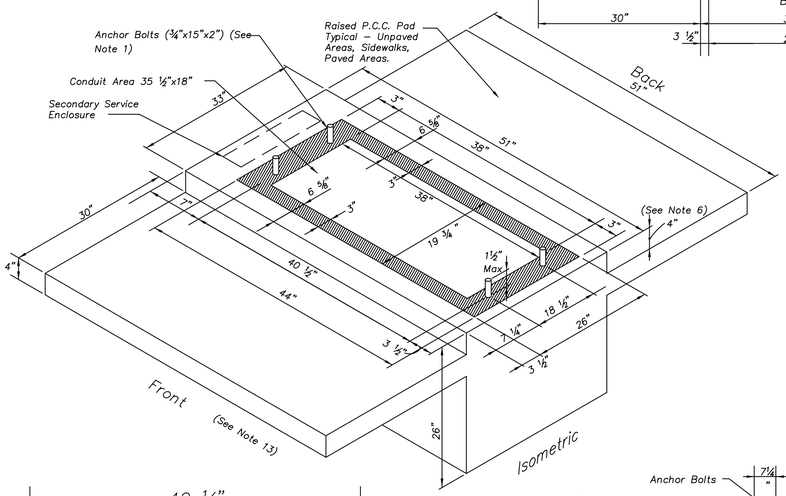


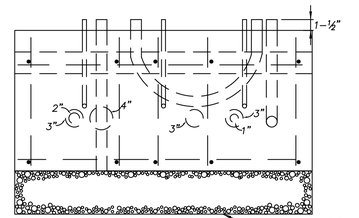

Rebar Cage Detail

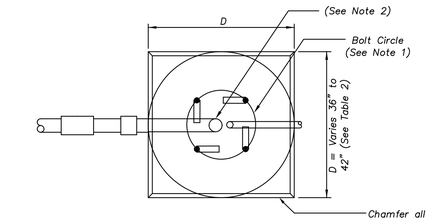
| Horizontal Rebar | | | |
|---|---|---|---|
| Pole Fnd. Dia. | Pole Fnd Depth | Rebar Clr. "D" | Spacing |
| 24" | 30" | 20" | 12" MAX. |
| 36" | 11'–13' | 30" | 12" MAX. |
| 42" | 15'–21' | 36" | 12" MAX. |

| Vertical Rebar | |
|---|---|
| Pole Fnd. Depth | Length "A" |
| 30" | 2'–3" |
| 11'–0" | 10'–9" |
| 12'–0" | 11'–9" |
| 13'–0" | 12'–9" |
| 15'–0" | 14'–9" |
| 17'–0" | 16'–9" |
| 21'–0" | 20'–9" |

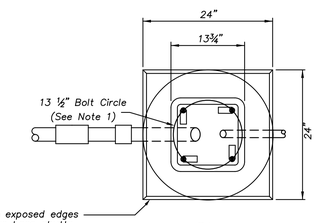


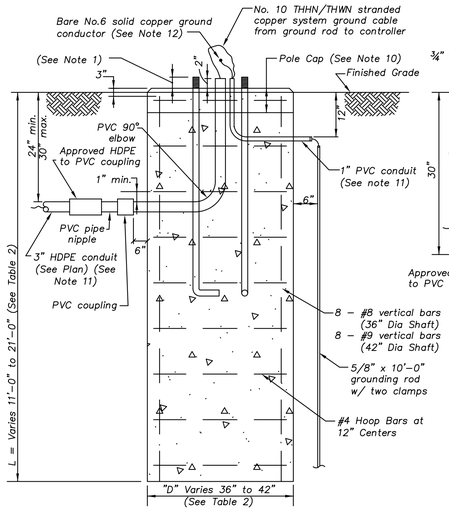




Plan

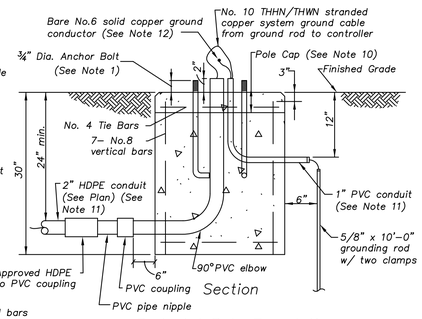



Plan




Section

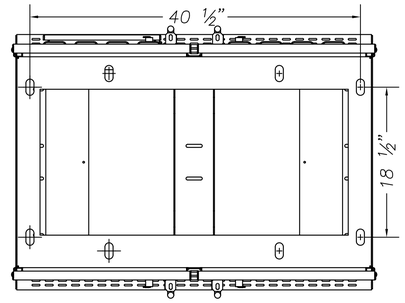
Traffic Signal Pole Foundation



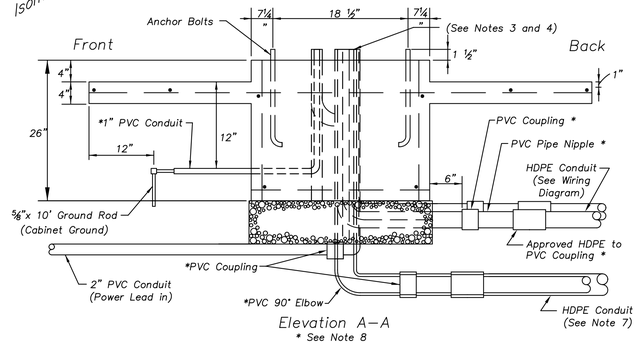

Section

Pedestal Pole Foundation

| Table 2 Signal Pole Foundations Drilled Shaft Dimensions | | |
|---|---|---|
| Length of Mast Arm | "D" Diameter | "L" Length |
| < 22' | 36" | 11' |
| 22' to 28' | 36" | 12' |
| 30' to 36' | 36" | 13' |
| 38' to 50' | 42" | 15' |
| 52' to 58' | 42" | 17' |
| 60' to 70' | 42" | 21' |
| > 70' | Requires Special Design | |




Signal Controller Foundation Bolt Pattern




Elevation A–A
* See Note 8

Controller Cabinet Pad Details
(Double Wide Hybrid)

Signal Controller Pad Notes:
1. All conduits and anchor bolts shall be rigidly installed before concrete is placed.
2. Top of pad to be sloped to drain toward PVC drain. Drain can be relocated as necessary to match conditions.
3. A 1–c#10 THHN/THWN stranded copper system ground cable shall be installed through one of the HDPE conduits between the controller and closet service box (See controller cabinet grounding detail).
4. Duct seal shall be applied at all conduit entrances after cable installation.
5. A watertight seal shall be applied along the inside and outside edges of the cabinet where it abutts to the concrete pad and around the secondary service enclosure where it abutts to the cabinet.
6. 4" is nominal dimension. 2"x4" forms are acceptable except where otherwise noted or directed (exposed concrete surfaces shall be formed by other means for an acceptable finished appearance).
7. HDPE conduit (orange in color) with a #10 AWG stranded copper locating cable and polypropylene pull rope sized per plan.
8. PVC conduit elbows in concrete foundations shall be connected to HDPE conduit with PVC pipe nipple and approved PVC to HDPE couplings. All PVC pipe nipples, elbows and couplings shall be considered subsidiary to the traffic signal controller pad.
9. Contractor to install concrete anchors and bolts per manufacturer's recommendation to anchor secondary service enclosure to concrete foundation. Also anchor to signal cabinet with sheet metal screws.
10. Contractor shall install a 36" radius, large sweep 90° elbow at each end of power lead–in conduit. Material shall be Schedule 40 PVC (gray) or SDR 13.5 HDPE (black with red stripe).
11. Contractor shall install 180° PVC conduit sweeps from secondary service pedestal sweeping up into the controller cabinet.
12. Contractor to provide ground rod(s) as required for maximum of 25 ohms resistance to ground. Contractor shall be required to test with the inspector present.
13. Cabinet shall be oriented such that when the technician is facing the front of the cabinet, he can look over the top and see the intersection ahead of them.
14. All reinforcing steel shall be ASTM A615 GR60.
15. All concrete surfaces shall be brushed and sealed with curing compound.

Pole Foundation Notes:
1. Final pole, anchor bolt size, anchor bolt projection, and bolt circle shall be as per manufacturer's recommended practices (See Table 1). Rotate anchor bolt to maintain minimum clearance from edge of hole.
2. All conduits and anchor bolts for all the new pole bases shall be rigidly installed before concrete is placed. Anchor bolts shall be spaced by means of a factory certified template or drawing, the center of which shall coincide with the center of the base.
3. All concrete used in this work shall meet the requirements of the Overland Park Municipal Code and shall be KCMMB4K concrete ($f'_c$ = 4,000 psi). Poles shall not be erected until concrete has reached 3,400 psi.
4. Reinforcing steel shall have 60 ksi yield strength: Maintain 3" minimum clearance from reinforcing steel to edge of hole or form for mast arm poles and 1 ½" minimum clearance for pedestal poles.
5. The drilled shaft foundation details presented herein are intended for installation into soil foundations. A special foundation investigation and design shall be conducted for residual soils with an "N" value of 4 or less or characterized as very soft to soft clay.
6. These standard designs assume a minimum compactive effort of 90% of Standard or Modified Proctor for cohesive fill material.
7. In the event excavation for the drilled shaft encounters sound limestone short of the required length shown in the table of dimensions, the shaft may be shortened to a minimum length of 8 feet with a minimum inclusive rock socket of 3 feet.
8. Shale foundation material will be considered as a stiff clay. Drilled shafts in shale must satisfy the dimensions on Table 2.
9. All concrete pole bases shall be consolidated by an internal type vibrator.
10. Final 6" of concrete foundation (pole cap) shall be formed square. The cap shall be formed and poured after the mast arm is erected and the pole plumb. Pole cap for pedestal pole shall be required at inspector discretion. Final top elevation shall match ADA sidewalk ramp.
11. PVC conduit elbows in concrete foundations shall be connected to HDPE conduit with PVC pipe nipple and approved PVC to HDPE couplings. all PVC pipe nipples, elbows, and couplings shall be considered subsidiary to the traffic signal pole base.
12. Bare No. 6 solid copper ground conductor shall be connected from internal pole grounding nut with a ring terminal to the clamp on the ground rod.
13. All reinforcing steel shall be ASTM A615 GR60.
14. All concrete surfaces should be brushed and sealed with curing compound.

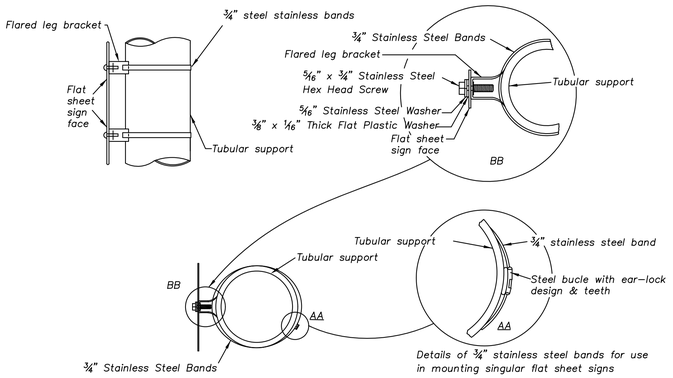
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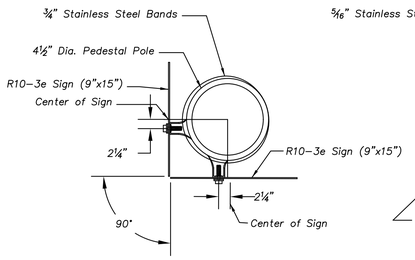
TRAFFIC SIGNAL DETAILS

SHEET 9 OF 13

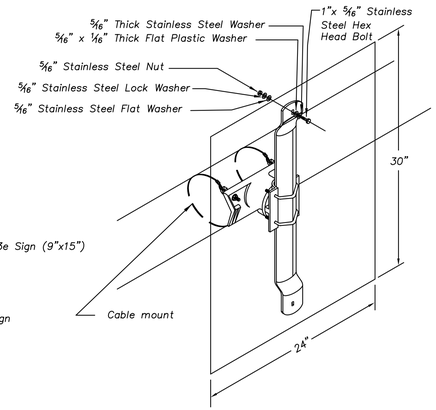
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 157 | 393 |




Side of Pole Sign Mounting Detail




Pedestal Pole Sign Mounting Detail




Mast Arm Sign Mounting Bracket Detail

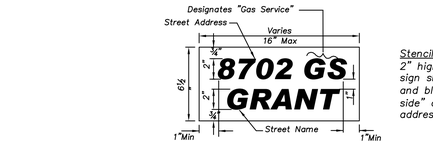
Sign Mounting Notes:

1. Signs on side of pole shall be attached with two (2) brackets and stainless steel bands.
2. Holes in sign for attachment to the mounting brackets shall be offset a minimum of 2" from the edge of sign.
3. Holes in sign shall be located such that the sign is plumb and level.
4. This detail is not intended for r10 series signs attached to signal mast arms.
5. When only one R10-3e sign is used on the pedestal pole, mount with the bolts centered on the sign.

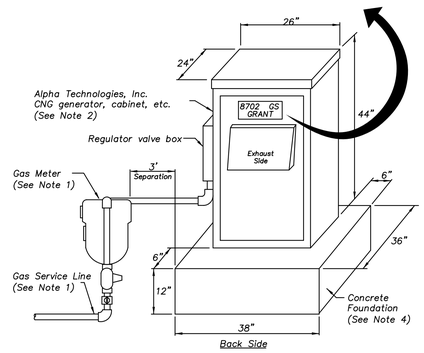
Sign Mounting Details

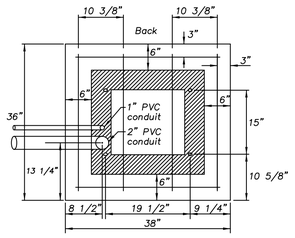
Notes:

1. Gas company will provide and install the gas service line and the gas meter. They will also perform the tap to the gas main and the connection to the CNG generator regulator valve box.
2. Contractor to provide and install the CNG generator per manufacturer's recommendations. The CNG generator shall have the following characteristics:
   - Independent outdoor enclosure with recessed locking doors
   - Designed to NFPA 37,54,58 standards
   - 48v dc output voltage
   - 96a max dc output current (rectified)
   - 10.5hp rated single ohv engine
   - 13.5 VDC ignition charger voltage
   - 6 amp max. ignition charger current
   - 2800-3600 RPM (max) variable speed
   - 80 cubic ft/hr, 1000 btu/ft
   - 0.5 – 2 PSI gas inlet pressure
3. Contractor to provide and install 2" PVC conduit w/1-3c #2 AWG (power) & 1-3c #14 AWG (monitoring) and 1-2c #14 AWG (alarm) electrical cable from CNG generator to traffic signal cabinet.
4. Contractor to install concrete foundation with anchor bolts to mount cabinet. See details. A pre-cast polymer pad is an acceptable alternative to a cast-in place pad. All soil shall be completely compacted prior to installing either alternative to avoid settlement.
5. Allow 36" clearance to other cabinets to allow the front and rear doors to open completely.
6. Shall be equipped with a cold weather starting kit for operational temperature range between -40°F and 122°F consisting of a battery heating mat and engine block heater.
7. A 25+ year continuous vapor barrier must be used between the enclosure and pad to prevent moisture ingress. The vapor barrier material shall be a continuous duct seal band installed prior to setting the cabinet.
8. A pre-cast polymer concrete pad is an acceptable alternative to a cast-in-place pad.
9. Contractor shall ensure that the pad shear sensor is installed per manufacturer's recommendations with the magnetic sensor firmly glued to the concrete pad.

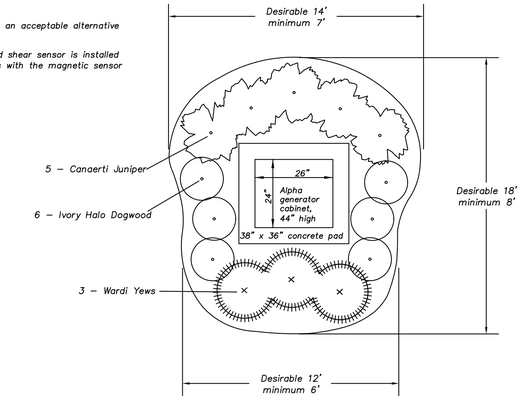



Stencil Detail Note:
2" high letters and numerals with black stick-on sign sheeting film on white retroreflective sheeting and black border by the contractor. Apply on "street side" of cabinet facing the street referenced in the address.




Compressed Natural Gas (CNG) Generator Detail

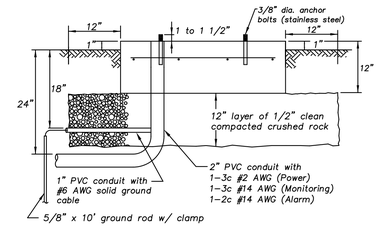



Compressed Natural Gas (CNG) Generator Landscape Plan

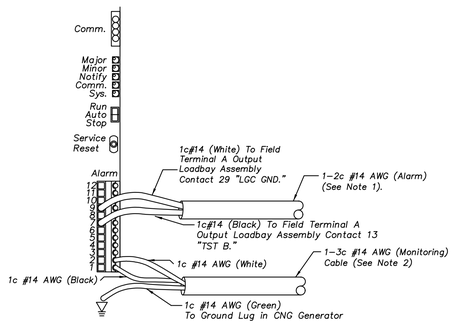
| Min. Qty. | Desirable | Scientific Name | Common Name | Planting Size |
|---|---|---|---|---|
| 3 | 5 | Juniperus Virginiana 'Canaertii' | Canaerti Juniper | 5' B & B |
| 4 | 6 | Cornus Alba 'Bailhalo' | Ivory Halo Dogwood | 7 Gal. |
| 3 | 3 | Taxus x Media 'Wardii' | Wardi Yew | 24"-30" B & B |

Landscaping Notes:

1. All landscape beds will consist of 3" shreaded oak hardwood mulch.
2. All disturbed areas outside of landscape beds will be sod and/or seed.
3. Landscape fabric will be used to retard weed growth.
4. A manicured "garden edge" will be constructed to a depth of 6" to retain mulch.
5. Minimum and desirable quantities are based on overall size of landscaped area. Quantities should be based on "desirable" quantities unless otherwise determined by the engineer.




Compressed Natural Gas (CNG) Generator Foundation Detail




Notes:

1. Use 1-2c #14 AWG shielded detector wire (for alarm cable) with insulated jacket through conduit to field terminal rear panel in signal cabinet. Break out individual black and white conductors in traffic signal cabinet and CNG generator.
2. 1-3c #14 AWG (monitoring) cable with insulated jacket through conduit to secondary service pedestal cabinet. Break out individual conductors at each end.

Engine Control Module Wiring Diagram (in CNG Generator)

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TRAFFIC SIGNAL DETAILS

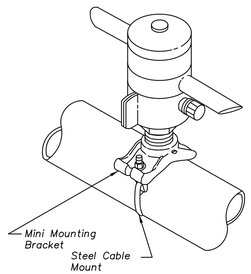
SHEET 10 OF 13

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

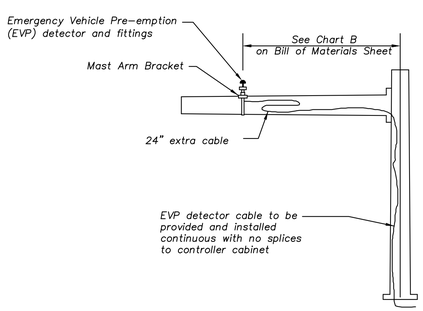
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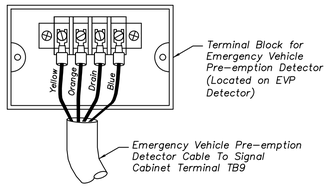
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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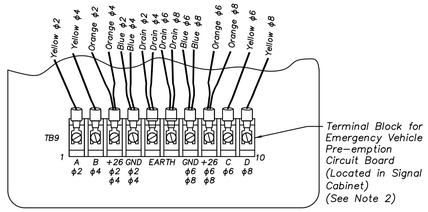



Bracket Attachment Detail



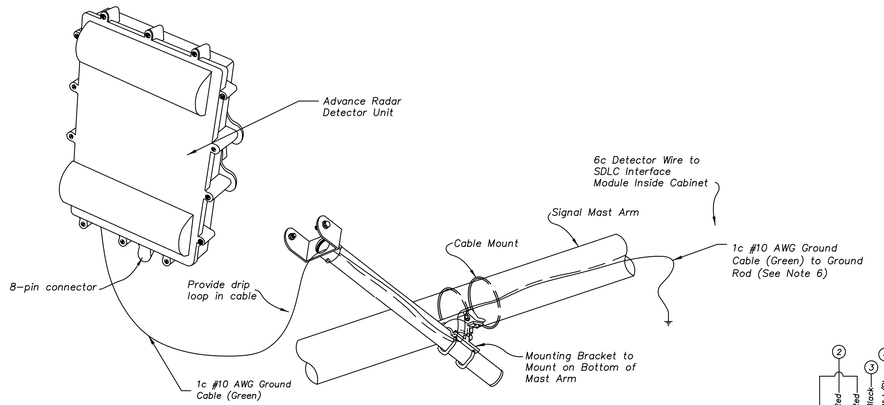

Emergency Vehicle Pre-Emption System Detail




Notes:
1. Cabling is shown for four pre-emption detectors.
2. Terminal block TB9 is part of the detector loop assembly interface circuit board.

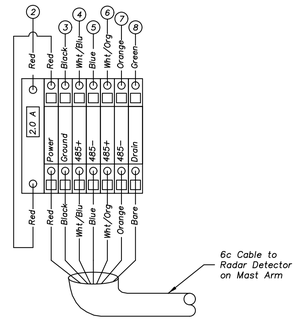
Emergency Vehicle Pre-Emption Detector Wiring Diagram




Advance Radar Detection Mounting Detail
(Mast Arm Bracket Arm Mount)

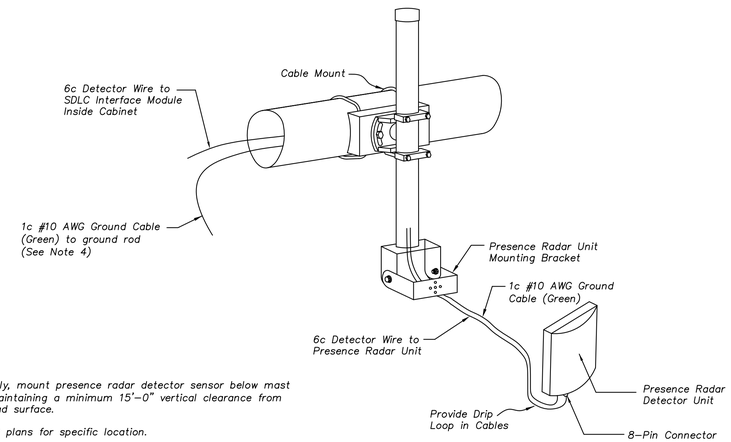
Notes:

1. Maintain offsets from center of the desired lane less than 24 feet.
2. Apply silicon dielectric compound into the connector at the base of the radar detector
3. Orient advance radar detector straight ahead with no downward tilt.
4. Install presence radar detector below mast arm and orient as indicated for maximum detection.
5. Mounting bracket arm shall be horizontal to road surface, and fastened to the bottom of mast arm. Maintain a minimum of 15' clearance from the sensor to the road surface.
6. Install the 1c#10 AWG ground cable from the sensor to the ground rod in the closest service box adjacent to the pole the sensor is mounted on. Use a separate ground rod clamp for each sensor.




Radar Detection Notes:
1. Plug cable connection into the SDLC cabinet interface module.
2. One connection is required for every presence and advance sensor.

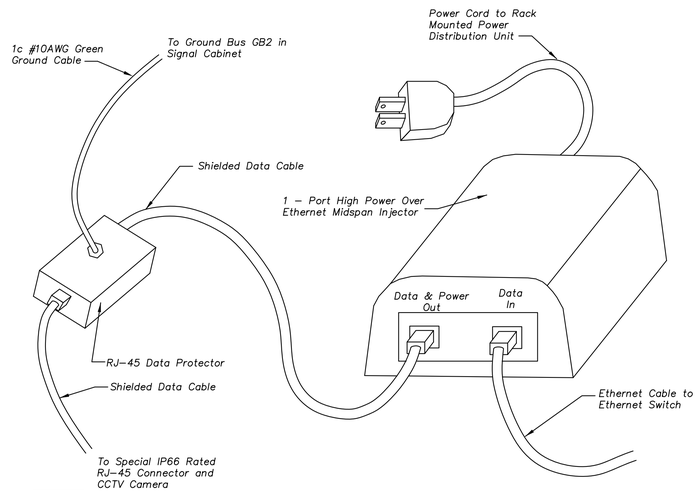
Radar Detection Rack Wiring Diagram



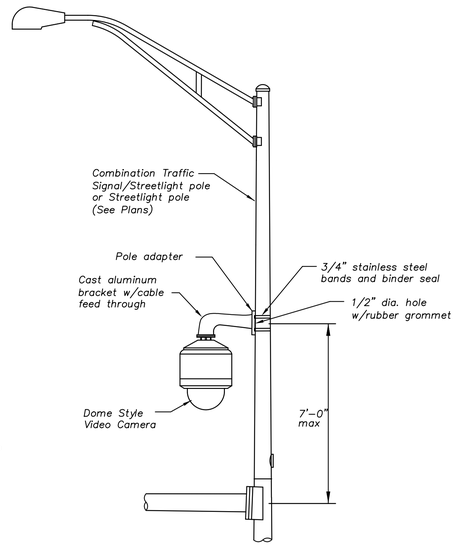

Notes:

1. Generally, mount presence radar detector sensor below mast arm maintaining a minimum 15'-0" vertical clearance from the road surface.
2. Consult plans for specific location.
3. Mounting bracket arm shall be vertical to road surface, and on the same side of the mast arm that the detector is aimed, unless otherwise directed.
4. Install the 1c#10 AWG ground cable from the sensor to the ground rod in the closest service box adjacent to the pole the sensor is mounted on. Use a separate ground rod clamp for each sensor.

Presence Radar Detection Mounting Detail
(Mast Arm Bracket Arm Mount)




CCTV Camera Connection Detail




CCTV Camera Mounting Detail

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KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL DETAILS

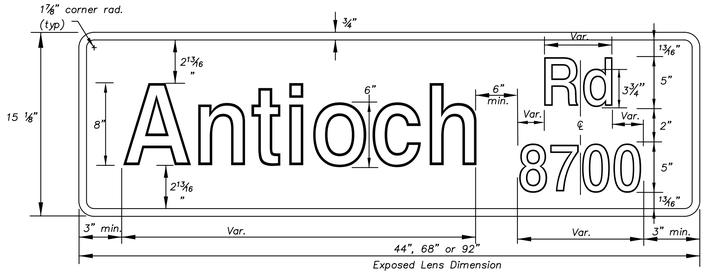
SHEET 11 OF 13

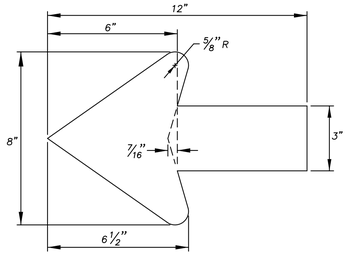
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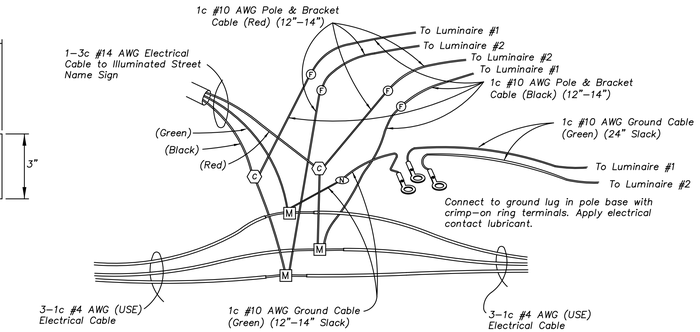
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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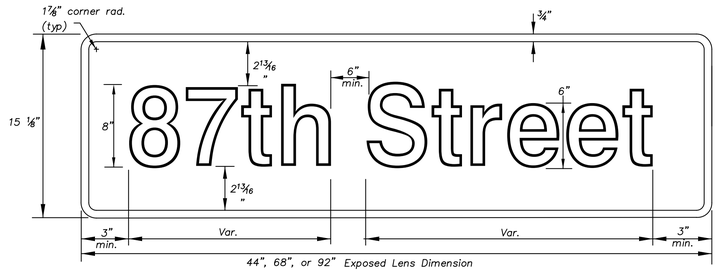




Arrow Dimensions (Inches)

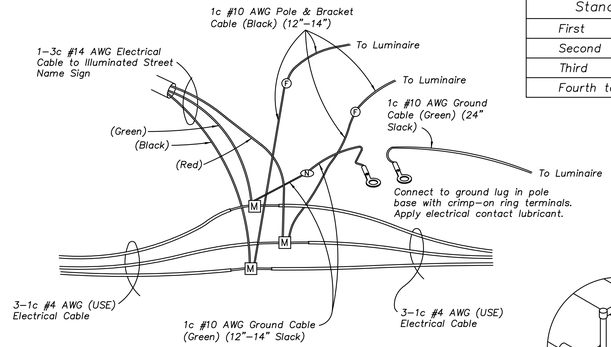



Illuminated Street Name Sign (240–Volt)
Electrical Connector Kit Schematic
(Twin Luminaires)

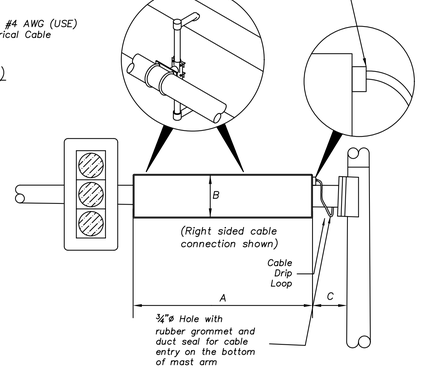
| Table 1 (Alpha Streets) | |
|---|---|
| Standard Abbreviation List | |
| Avenue | Ave |
| Boulevard | Blvd |
| Circle | Cir |
| Court | Ct |
| Creek | Crk |
| Drive | Dr |
| Highway | Hwy |
| Lane | Ln |
| Parkway | Pkwy |
| Place | Pl |
| Plaza | Plz |
| Road | Rd |
| Street | St |
| Terrace | Ter |
| Trail | Tr |
| Way | Way |
| Table 2 (Numbered Streets) | |
| Standard Abbreviation List | |
| First | st |
| Second | nd |
| Third | rd |
| Fourth to Ninth | th |

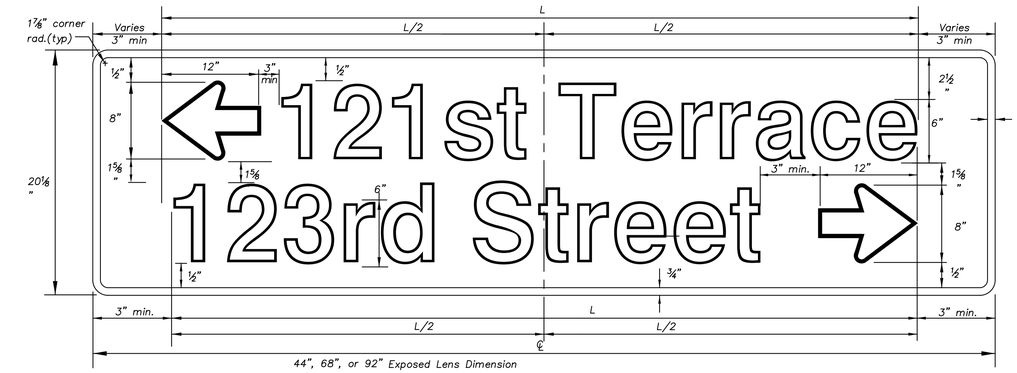



Notes:
1. Signs shall be one sided.
2. Signs shall be rigid mounted top and bottom with brackets per the approved materials list.
3. Signs shall be mounted with the sign centered vertically on and approximately level with the mast arm.
4. Sheeting Requirements: Translucent micro–encapsulated retro–reflective sheeting (Type XI) with Electro Cutable Film.
   Legend and Border: White
   Background: Green
5. Text Series: Emod 2000 sized as indicated in the examples.
6. Power supply shall be self–sensing 120/240 volt.
7. The contractor shall submit a detailed shop drawing indicating the legend and sign spacing for approval prior to fabrication.
8. Red cables shall be connected to west and north oriented luminaires. Black cables shall be connected to east and south oriented luminaires.



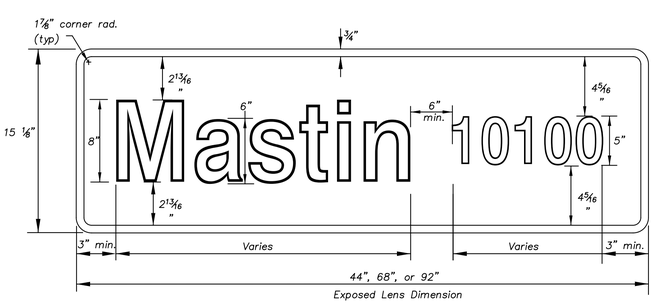

Illuminated Street Name Sign (240–Volt)
Electrical Connector Kit Schematic
(Single Luminaire)

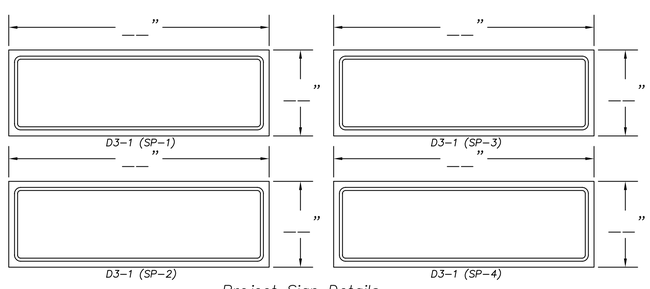


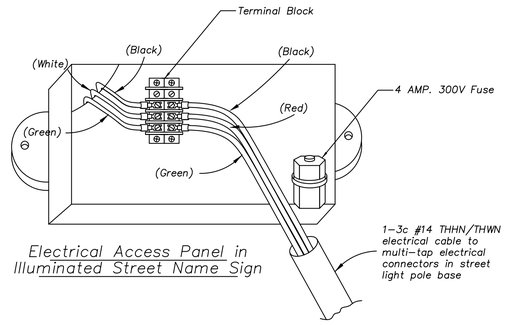

| Illuminated Street Name Sign Summary Chart | | | | | | |
|---|---|---|---|---|---|---|
| Pole # | Sign Design | A | B | C | Cable Side | |
| | | | | | Left | Right |
| | SP–1 | | | | | |
| | SP–2 | | | | | |
| | SP–3 | | | | | |
| | SP–4 | | | | | |
| | | | | | | |
| | | | | | | |

Sign Housing Dimensions
Dimension A is either 19" or 24"
Dimension B is either 48", 72", or 96"




Project Sign Details
(Shown with Actual Sign Housing Dimensions)




Electrical Access Panel in Illuminated Street Name Sign

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

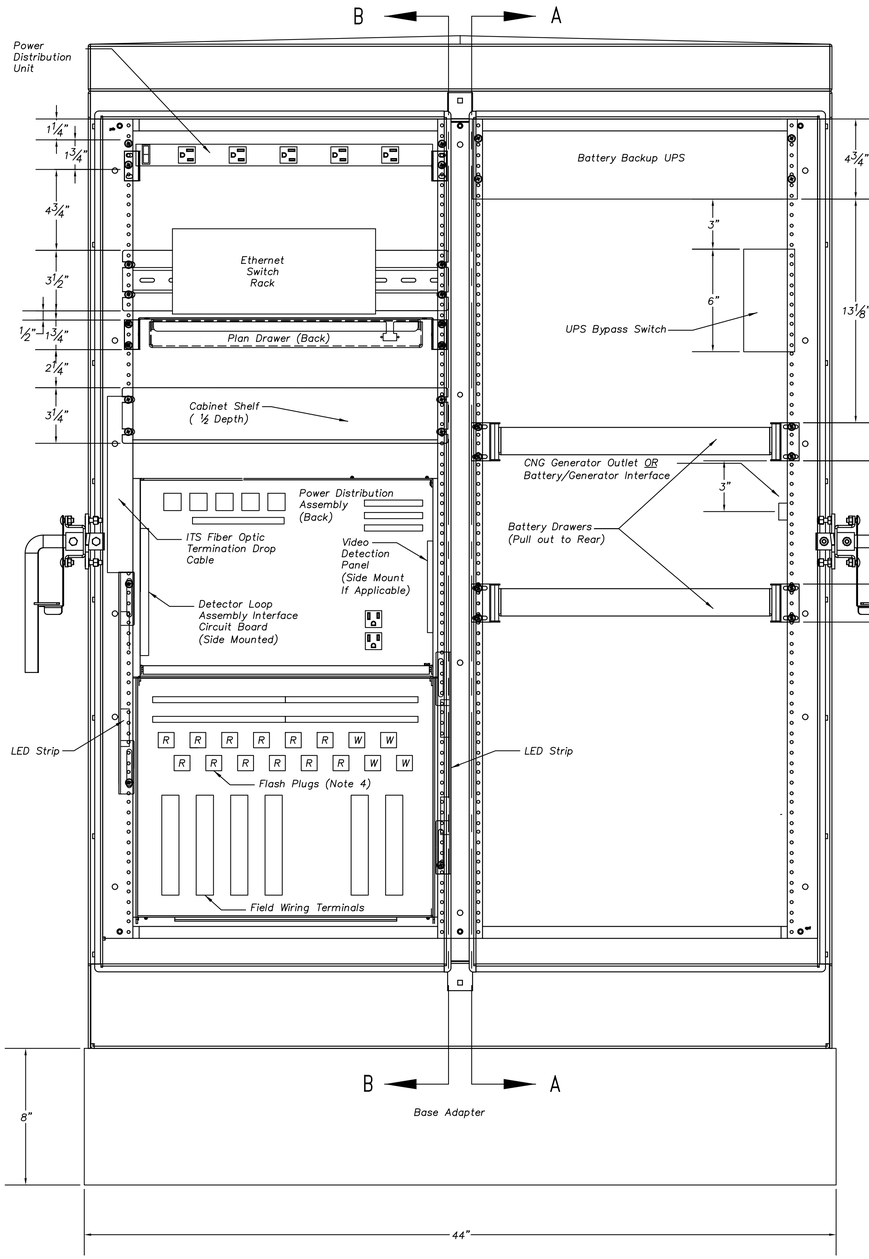
KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC SIGNAL DETAILS
SHEET 12 OF 13

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

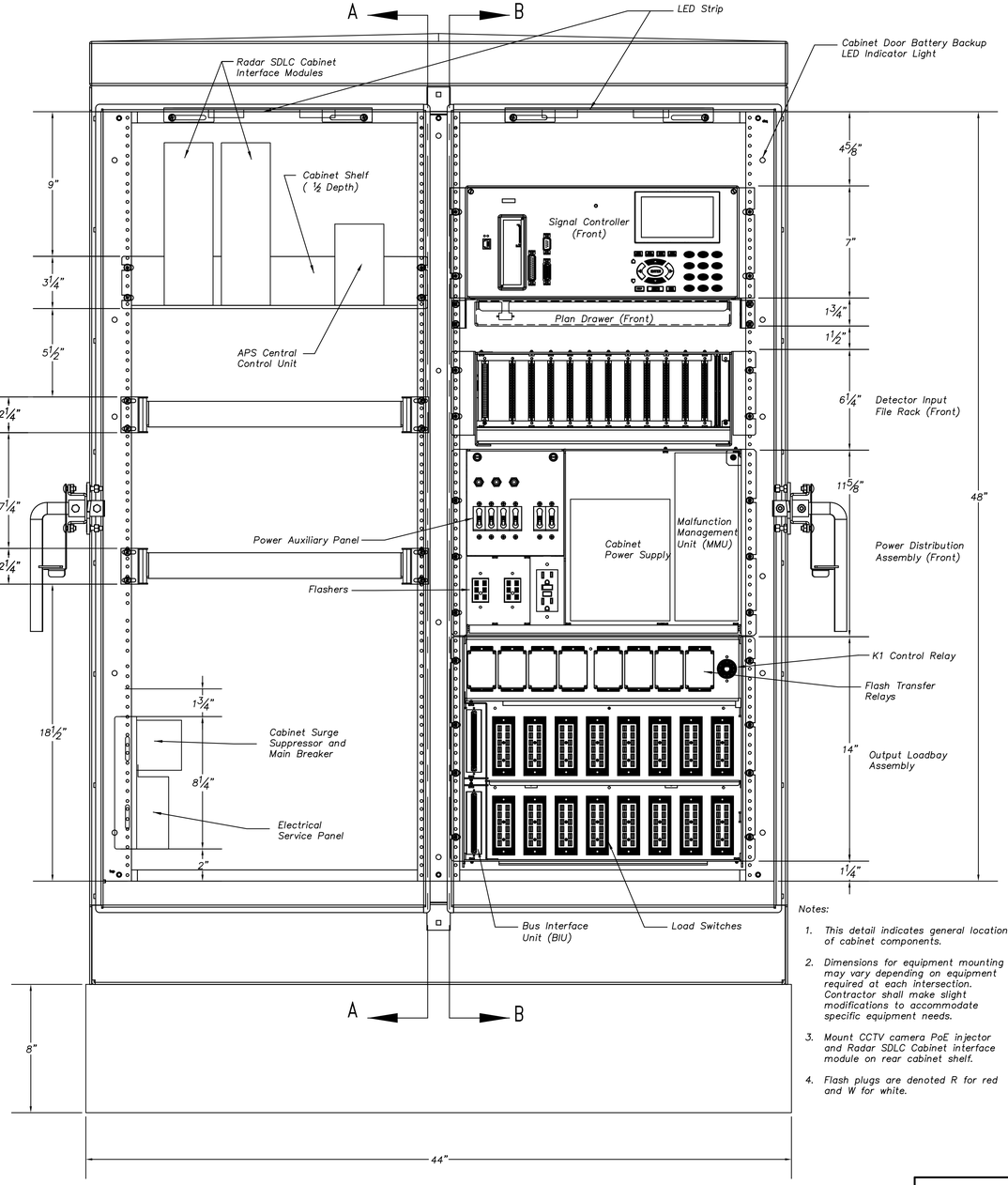
Plotted : 25-APR-2019 13:44
Drawn By : lrosenbaum
File : 13668T5512.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 160 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




Rear View
w/ Doors Removed




Front View
(w/ Doors Removed)

Notes:

1. This detail indicates general location of cabinet components.
2. Dimensions for equipment mounting may vary depending on equipment required at each intersection. Contractor shall make slight modifications to accommodate specific equipment needs.
3. Mount CCTV camera PoE injector and Radar SDLC Cabinet interface module on rear cabinet shelf.
4. Flash plugs are denoted R for red and W for white.

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL DETAILS

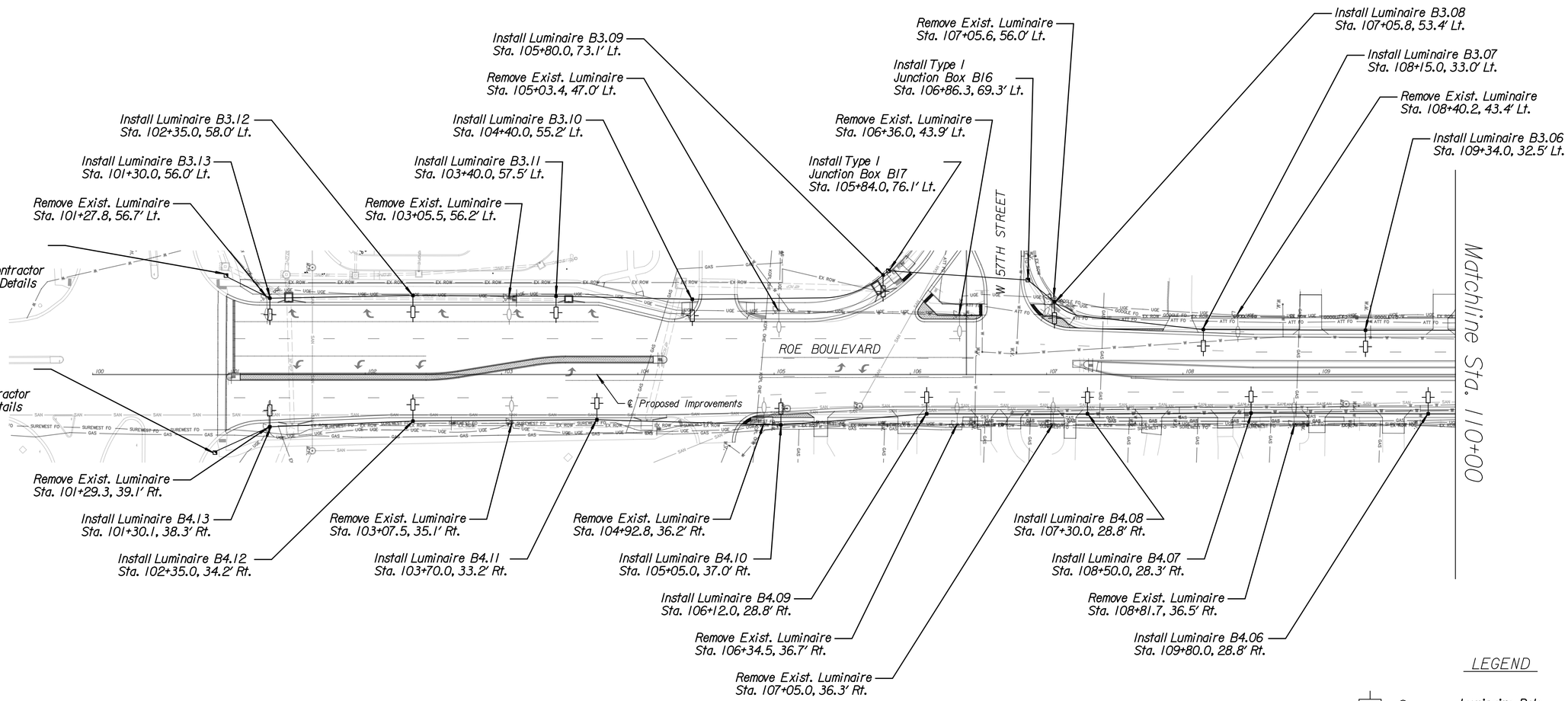
SHEET 13 OF 13

Plotted : 25-APR-2019 13:01

Drawn By : Irosenbaum
File : 13668T5513.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 161 | 393 |

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND

- Luminaire Pole
- HDPE Conduit
- Junction Box
- Lighting Controller

KANSAS DEPARTMENT OF TRANSPORTATION
LIGHTING PLAN
ROE BOULEVARD
STA. 100+00 TO STA. 110+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:02
Drawn By : lrosenbaum
File : 1366815101.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 162 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.

Remove Exist. Luminaire
Sta. 111+98.2, 42.8' Lt.

Install Luminaire B3.04
Sta. 112+00.0, 32.5' Lt.

Install Luminaire B3.05
Sta. 110+75.0, 32.5' Lt.

Remove Exist. Luminaire
Sta. 110+73.6, 42.7' Lt.

Install Luminaire B3.01
Sta. 115+46.8, 42.0' Lt.

Remove Exist. Luminaire
Sta. 115+46.5, 42.2' Lt.

Install Luminaire B3.02
Sta. 114+25.0, 48.6' Lt.

Install Type I Junction Box B14
Sta. 114+23.8, 51.3' Lt.

Install Type I Junction Box B15
Sta. 113+91.1, 51.3' Lt.

Remove Exist. Luminaire
Sta. 113+72.9, 43.1' Lt.

Install Luminaire B3.03
Sta. 113+25.0, 42.0' Lt.

Remove Exist. Luminaire
Sta. 117+30.5, 62.8' Lt.

Install Type II
Junction Box B18
Sta. 116+51.0, 36.5' Lt.

Install Combined Lighting/
Signal Controller B
Sta. 116+43.6, 48.8' Lt.

Install Luminaire on Combo Pole
See Signal Plans for Details
Sta. 117+38.0, 57.2' Lt.

Install Type I
Junction Box B02
Sta. 117+45.0, 50.8' Lt.

Remove Exist. Luminaire
Sta. 117+44.7, 40.9' Lt.

Install Type I Junction Box B03
Sta. 117+56.0, 4.1' Rt.

Install Dual Head
Luminaire B1.01
Sta. 117+60.0, 4.1' Rt.

Install Dual Head
Luminaire B1.02
Sta. 118+85.0, 4.1' Rt.

Remove Exist. Luminaire
Sta. 119+25.2, 41.8' Lt.

Matchline Sta. 110+00

Matchline Sta. 120+00

W 57TH TERRACE

W 56TH STREET

W 55TH STREET

ROE BOULEVARD

℄ Proposed Improvements

Install Type I Junction Box B20
Sta. 110+11.5, 28.8' Rt.

Install Type I Junction Box B19
Sta. 110+85.9, 28.8' Rt.

Remove Exist. Luminaire
Sta. 110+88.3, 35.5' Rt.

Install Luminaire B4.05
Sta. 110+90.0, 28.8' Rt.

Install Luminaire B4.04
Sta. 112+15.0, 37.3' Rt.

Remove Exist. Luminaire
Sta. 112+78.8, 36.0' Rt.

Install Luminaire B4.03
Sta. 113+40.0, 37.3' Rt.

Remove Exist. Luminaire
Sta. 114+19.8, 36.7' Rt.

Install Luminaire B4.02
Sta. 114+80.0, 37.3' Rt.

Remove Exist. Luminaire
Sta. 115+24.3, 36.5' Rt.

Install Luminaire B4.01
Sta. 116+19.0, 39.3' Rt.

Install Type I Junction Box B18
Sta. 116+74.1, 49.3' Rt.

Remove Exist. Luminaire
Sta. 119+21.5, 36.5' Rt.

Remove Exist. Luminaire
Sta. 117+60.5, 37.1' Rt.

Install Luminaire on Combo Pole
See Signal Plans for Details
Sta. 117+42.7, 46.7' Rt.

Remove Exist. Luminaire
Sta. 117+32.1, 57.1' Rt.

LEGEND

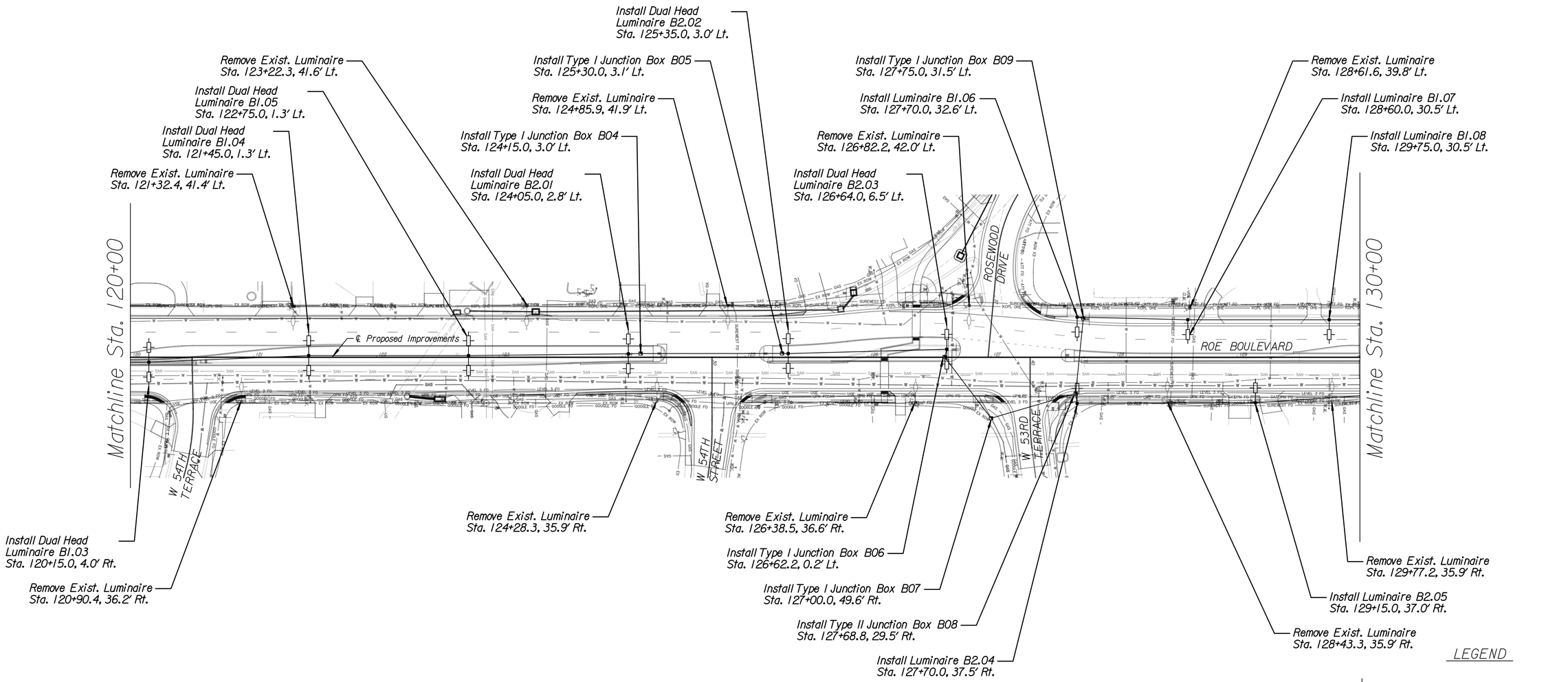
- Luminaire Pole
- HDPE Conduit
- Junction Box
- Lighting Controller

KANSAS DEPARTMENT OF TRANSPORTATION
LIGHTING PLAN
ROE BOULEVARD
STA. 110+00 TO STA. 120+00

Plotted : 25-APR-2019 13:02
Drawn By : lrosenbaum
File : 136681T5102.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 163 | 393 |

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND

- Luminaire Pole
- HDPE Conduit
- Junction Box
- Lighting Controller

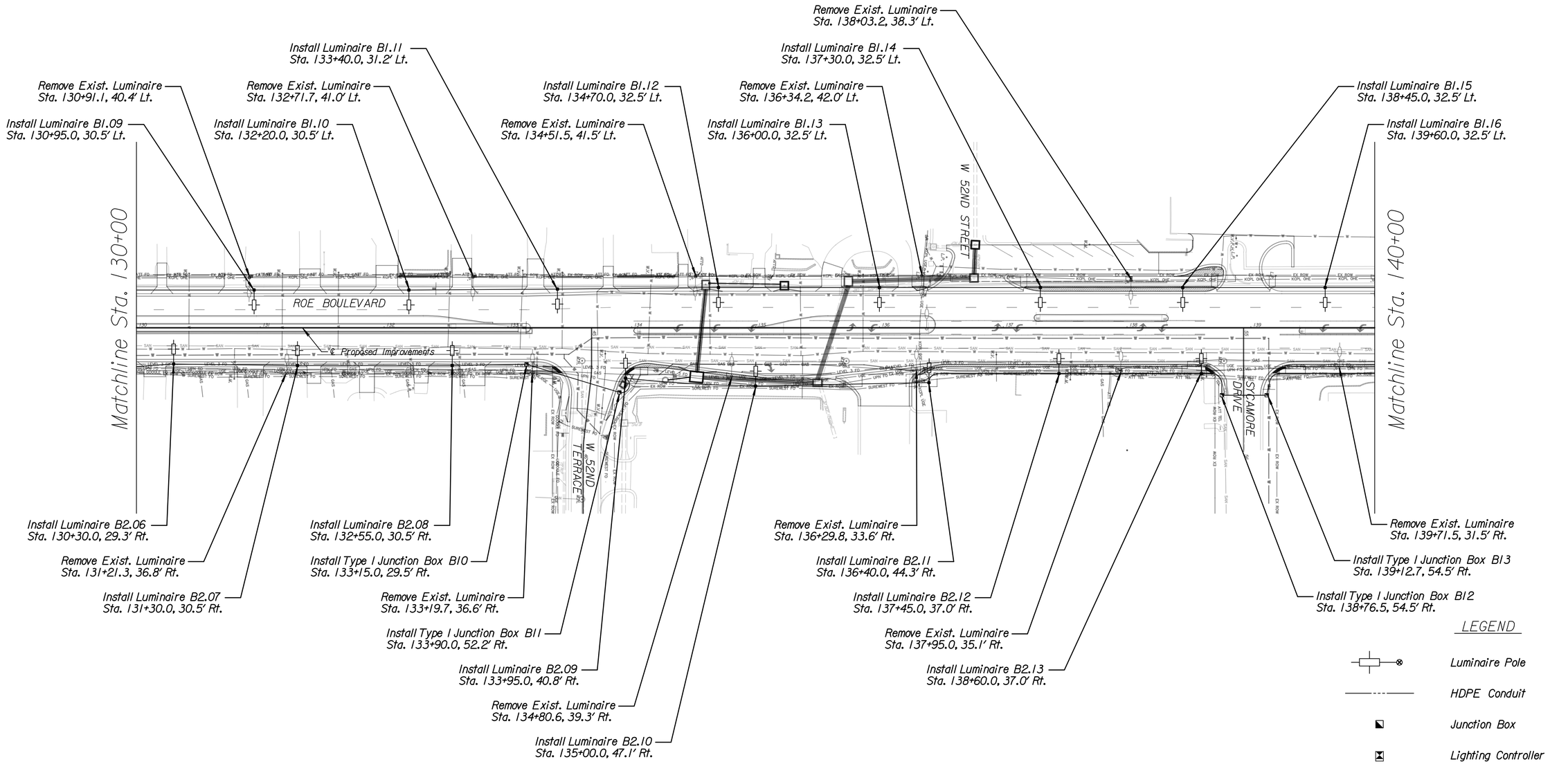
KANSAS DEPARTMENT OF TRANSPORTATION
LIGHTING PLAN
ROE BOULEVARD
STA. 120+00 TO STA. 130+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:02
Drawn By : lrosenbaum
File : 13668T5103.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 164 | 393 |

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




KANSAS DEPARTMENT OF TRANSPORTATION
LIGHTING PLAN
ROE BOULEVARD
STA. 130+00 TO STA. 140+00

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:02
Drawn By : lrosenbaum
File : 136685104.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 165 | 393 |

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.

Remove Exist. Luminaire with Combo Pole
See Signal Plans for Details
Sta. 146+69.4, 77.1' Lt.

Install Luminaire on Combo Pole
See Signal Plans for Details
Sta. 146+85.4, 66.1' Lt.

Install Type I Junction Box A08
Sta. 147+20.0, 46.1' Lt.

Install Luminaire A3.08
Sta. 147+25.0, 46.0' Lt.

Remove Exist. Luminaire
Sta. 148+48.1, 61.2' Lt.

Install Dual Pedestrian/
Roadway Luminaire A3.07
Sta. 148+60.0, 46.6' Lt.

Install Dual Pedestrian/
Roadway Luminaire A3.06
Sta. 149+85.0, 40.3' Lt.

Install Luminaire A3.09
Sta. 145+98.4, 77.7' Lt.

Install Luminaire A3.11
Sta. 143+40.0, 35.3' Lt.

Remove Exist. Luminaire with Combo Pole
See Signal Plans for Details
Sta. 143+11.7, 1.3' Rt.

Install Luminaire on Combo Pole
See Signal Plans for Details
Sta. 142+84.8, 56.3' Lt.

Install Luminaire on Combo Pole
See Signal Plans for Details
Sta. 142+08.8, 44.3' Lt.

Remove Exist. Luminaire with Combo Pole
See Signal Plans for Details
Sta. 142+03.7, 43.2' Lt.

Install Luminaire B3.17
Sta. 140+90.0, 32.5' Lt.

Remove Exist. Luminaire
Sta. 140+01.2, 39.7' Lt.

Install Luminaire on Combo Pole
See Signal Plans for Details
Sta. 145+80.5, 40.6' Lt.

Remove Exist. Luminaire with Combo Pole
See Signal Plans for Details
Sta. 145+72.0, 53.8' Lt.

Install Type II Junction Box A09
Sta. 145+74.2, 35.6' Lt.

Install Luminaire A3.10
Sta. 144+70.0, 35.3' Lt.

Matchline Sta. 140+00

ROE BOULEVARD

℄ Proposed Improvements

50TH TERRACE

W 51ST STREET

ROE LANE

Matchline Sta. 150+00

Install Luminaire B2.14
Sta. 140+05.0, 37.0' Rt.

Remove Exist. Luminaire
Sta. 141+44.1, 31.4' Rt.

Install Luminaire B2.15
Sta. 141+45.0, 37.0' Rt.

Install Luminaire on Combo Pole
See Signal Plans for Details
Sta. 142+90.5, 41.7' Rt.

Install Luminaire A4.11
Sta. 144+10.0, 33.5' Rt.

Install Luminaire A4.10
Sta. 145+30.0, 41.0' Rt.

Install Type I Junction Box A15
Sta. 145+90.7, 47.1' Rt.

Install Luminaire on Combo Pole
See Signal Plans for Details
Sta. 146+00.9, 51.9' Rt.

Remove Exist. Luminaire with Combo Pole
See Signal Plans for Details
Sta. 146+15.1, 60.7' Rt.

Install Luminaire on Combo Pole
See Signal Plans for Details
Sta. 146+85.2, 48.6' Rt.

Install Type II Junction Box A14
Sta. 146+89.3, 50.4' Rt.

Install Luminaire A4.09
Sta. 147+01.2, 35.1' Rt.

Remove Exist. Luminaire with Combo Pole
See Signal Plans for Details
Sta. 147+13.4, 40.8' Rt.

Install Type I Junction Box A13
Sta. 147+46.6, 36.0' Rt.

Install Luminaire A4.08
Sta. 148+00.0, 36.0' Rt.

Remove Exist. Luminaire
Sta. 148+61.1, 40.3' Rt.

Install Luminaire A4.07
Sta. 149+20.0, 36.0' Rt.

LEGEND

- Luminaire Pole
- HDPE Conduit
- Junction Box
- Lighting Controller

KANSAS DEPARTMENT OF TRANSPORTATION
LIGHTING PLAN
ROE BOULEVARD
STA. 140+00 TO STA. 150+00

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |

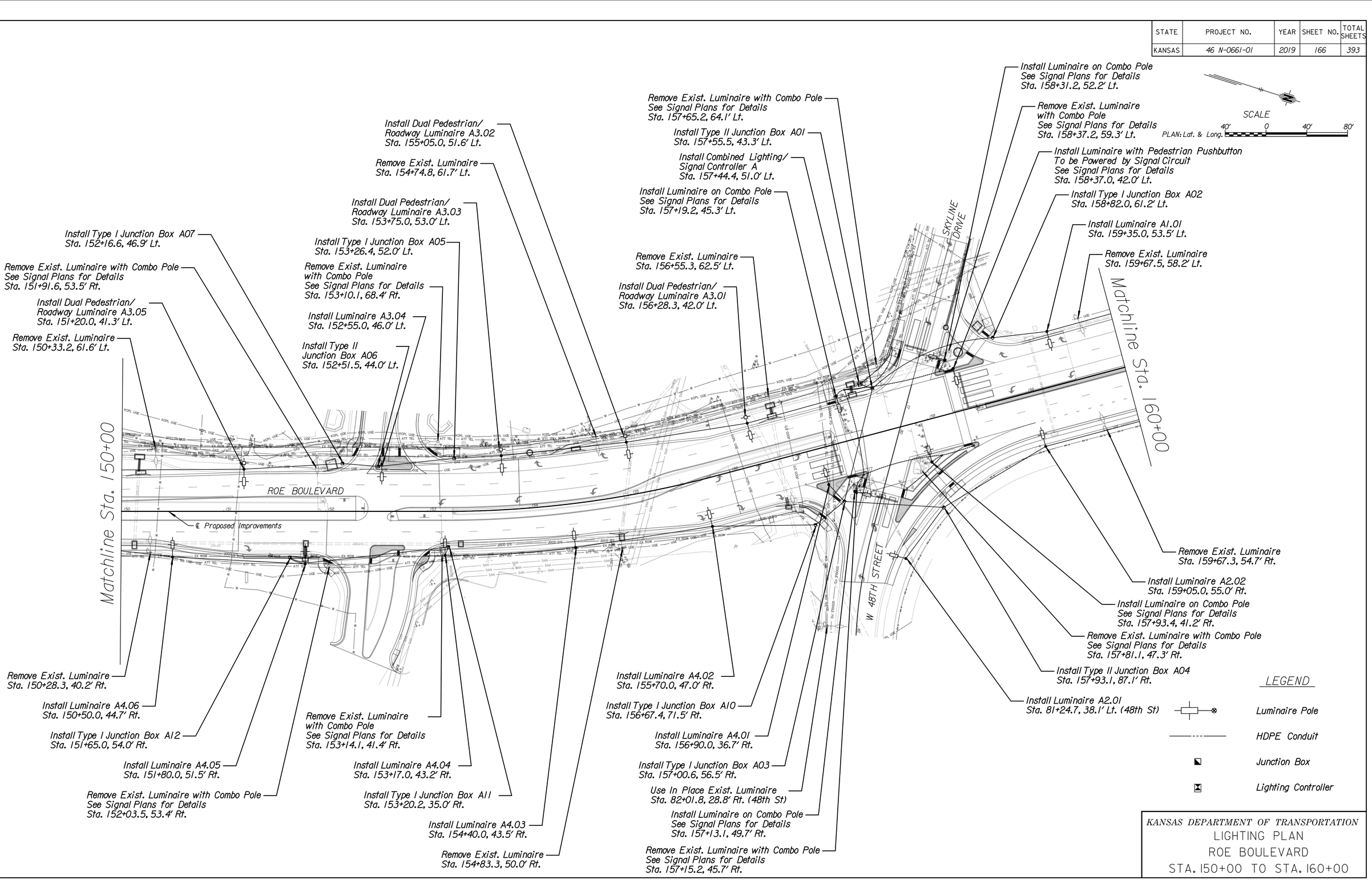
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Drawn By : lrosenbaum
File : 13668T5105.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 166 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:02

Drawn By : lrosenbaum
File : 13668T5106.dgn

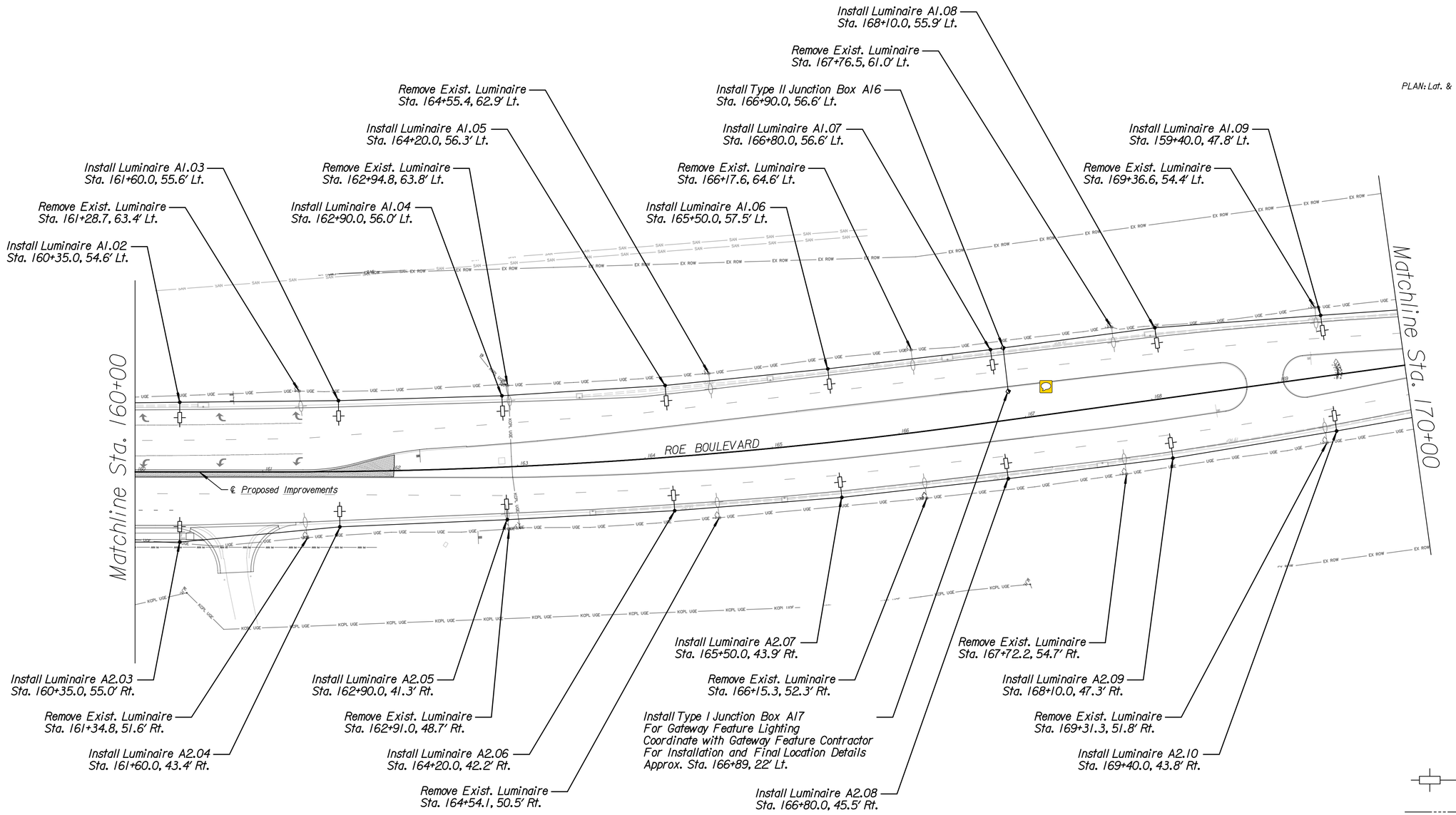



KANSAS DEPARTMENT OF TRANSPORTATION

# LIGHTING PLAN
## ROE BOULEVARD
## STA. 150+00 TO STA. 160+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 167 | 393 |

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND

- Luminaire Pole
- HDPE Conduit
- Junction Box
- Lighting Controller

KANSAS DEPARTMENT OF TRANSPORTATION
LIGHTING PLAN
ROE BOULEVARD
STA. 160+00 TO STA. 170+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

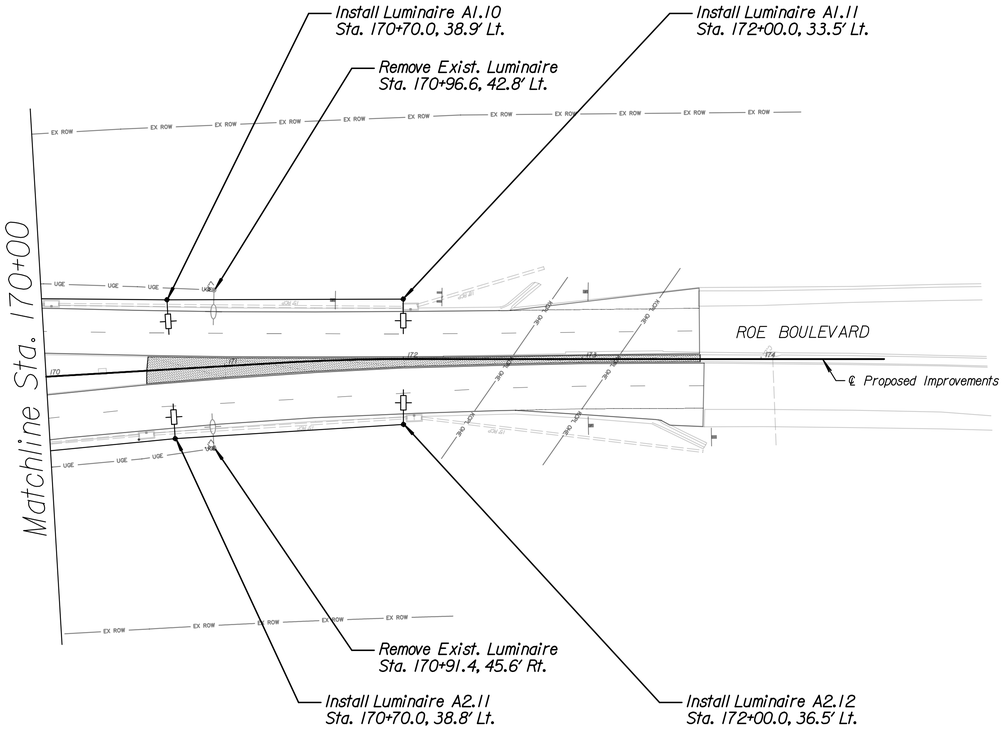
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Drawn By : lrosenbaum
File : 136681T5107.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 168 | 393 |

SCALE

40' 0 40' 80'

PLAN: Lat. & Long.




LEGEND

- Luminaire Pole
- HDPE Conduit
- Junction Box
- Lighting Controller

KANSAS DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN

ROE BOULEVARD

STA. 170+00 TO STA. 173+66

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

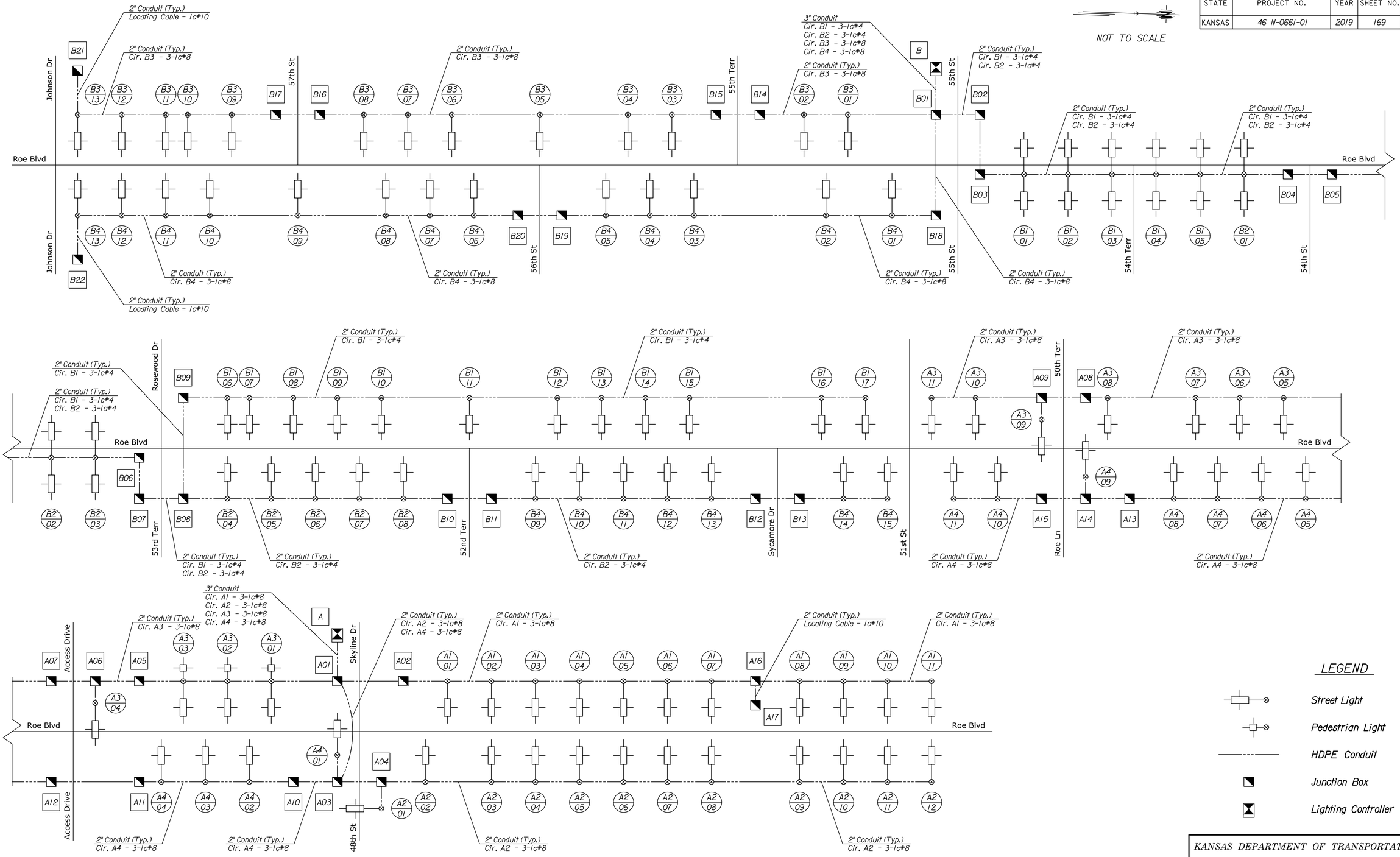
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Drawn By : lrosenbaum

File : 13668T5108.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 169 | 393 |

NOT TO SCALE




NOTE: Junction Boxes A16, B21, and B22 shall be installed for gateway lighting features, not part of this project.

KANSAS DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS
WIRING DIAGRAM

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |

Plotted : 25-APR-2019 13:02

Drawn By : lrosenbaum
File : 13668T5600.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 170 | 393 |

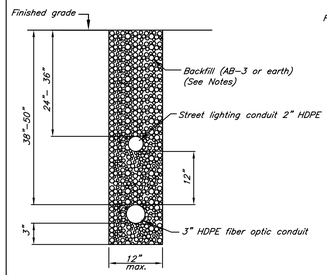
| DATE | BY | |
|---|---|---|
| | | |
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 171 | 393 |

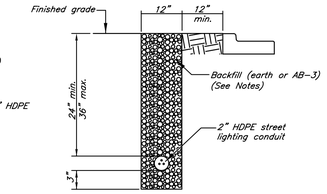
## Bill of Materials (1)

| Item | | Unit | Quantity | |
|---|---|---|---|---|
| Combination Lighting/Signal Pole | | Each | 14 | (3) |
| 40' Aluminum Pole w/ __' Bracket Arm | | Each | | |
| 40' Aluminum Pole w/ __' Bracket Arm | | Each | | |
| 40' Aluminum Pole | w/ Twin __' Bracket Arms | Each | | |
| 40' Aluminum Pole | w/ __' and __' Bracket Arms | Each | | |
| 30' Aluminum Pole | w/ 3.5' Arm | Each | 90 | |
| 30' Aluminum Pole | w/ Twin 3.5' Arms | Each | 8 | |
| 30' Aluminum Pole | w/ 3.5' Arm and 14' Mounted 2.5' Arm | Each | 6 | |
| 14' Aluminum Pole | | Each | | |
| | | | | |
| Concrete Pole Foundation Cap | | Each | | |
| Concrete Foundation for 40' Pole | | Each | | |
| Concrete Foundation for 30' Pole | | Each | | |
| Concrete Foundation for 14' Pole | | Each | | |
| ½" x 10' Ground Rod w/ Clamp for Concrete Foundation | | Each | | |
| Type F1 Screw-in Foundation | | Each | | |
| Type F2 Screw-in Foundation | | Each | | |
| Type T1 Screw-in Foundation | | Each | | |
| Screw-in Foundation | | Each | 104 | |
| | | | | |
| LED Luminaire (10,600 Lumens, 95W) | Structura LIN-M3195-UNV-L30-2-CSM-NA | Each | 14 | (4) |
| LED Luminaire (10,600 Lumens, 95W) | Structura LIN-M3195-UNV-L30-3-CSM-NA | Each | 113 | |
| LED Luminaire (4,000 Lumens, 40W) | Structura LIN-M1075-UNV-L30-2-CSM-NA | Each | 6 | |
| | | | | |
| Type 1 Service Box | | Each | | |
| Type 1 Junction Box | | Each | 31 | |
| Type 2 Junction Box | | Each | 8 | |
| | | | | |
| Control Center - Pad Mounted (1-Circuit) (___ Amp; ___V) | | Each | | |
| Control Center - Pad Mounted (4 Circuit) (100 Amp; 240 V) | | Each | 2 | |
| Concrete Control Center Foundation (1-Circuit Control Center) | | Each | | |
| Concrete Control Center Foundation (4-Circuit Control Center) | | Each | 2 | |
| 1/2" x 10'-0" Ground Rod with Clamp for Control Center | | Each | 2 | |
| Photo Cell | | Each | 2 | |
| | | | | |
| Metallic Conduit 2" (for Extension of Existing Conduit Only) | | Ln. Ft. | | |
| Schedule 40 PVC Conduit, 1" (for Equipment Ground Cable) | | Ln. Ft. | 6 | |
| Schedule 40 PVC Conduit, 3" or SDR 13.5 HDPE (Black w/ Red Stripes) KCP&L Electrical Service Conduit, 3" | | Ln. Ft. | TBD | |
| SDR 13.5 HDPE (Gray) Conduit, 2" | | Ln. Ft. | 13,720 | |
| SDR 13.5 HDPE (Gray) Conduit, 3" | | Ln. Ft. | 35 | |
| | | | | |
| Distribution Cable 3-1c No. 4 AWG Type USE | | Ln. Ft. | 5,524 | |
| Distribution Cable 3-1c No. 8 AWG Type USE | | Ln. Ft. | 9,843 | |
| Pole and Bracket Cable 1c No. 10 AWG Type THHN/THWN | | Ln. Ft. | 10,495 | |
| Solid Copper Ground Cable (Bare # 6 AWG) | | Ln. Ft. | 10 | |
| Locating Cable (Red) 1c No. 10 AWG Type THHN/THWN | | Ln. Ft. | 117 | |
| Electrical Service Power Cable 3-1c #4 AWG | | Ln. Ft. | TBD | |
| | | | | |
| 8 AMP Fuse | | Each | 236 | |
| Break-Away Non-Fused Connector Kits | | Each | 104 | |
| Break-Away Fused Connector Kits | | Each | 236 | |
| Multiple Streetlight Tap Connector | | Each | 312 | |
| Remove Existing Equipment | | Lump Sum | 1 | |
| Relocate Existing Equipment | | Each | | |
| Breakaway Pole Device | | Set/Each | 104 | (2) |
| | | | | |
| | | | | |
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Notes:
1. These approximate quantities were prepared solely for the contractor's convenience. It is not guaranteed that this list of materials constitutes all items required for the completion of the work. Street Lighting shall be bid as Lump Sum.
2. Approved break-away couplings or frangible bases are acceptable. Frangible bases shall be measured per each and couplings shall be measured as four units per set.
3. Refer to Chart B "Traffic Signal Pole Summary" on Traffic Signal Detail Sheet for design parameters.
4. All LED luminaires shall have a 10 year manufacturer's warranty



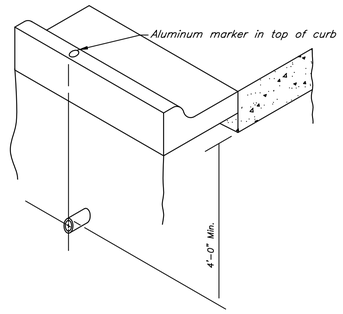

Trench w/Multiple Conduits




Trench w/Single Conduit

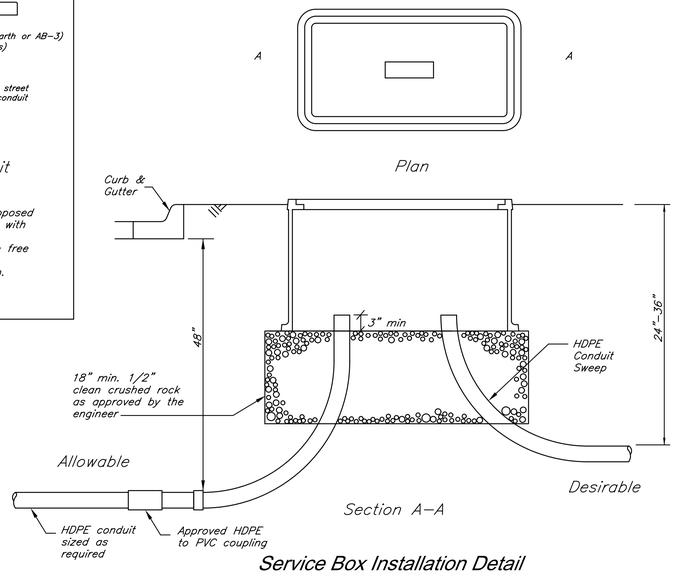
Trenching Notes:
1. All trenches for conduit under proposed paved surfaces shall be backfilled with flowable fill.
2. Backfill in unpaved areas shall be free of rubble and rock.
3. Conduits shall be pitched to drain.

### Trenching Details in Unpaved Areas

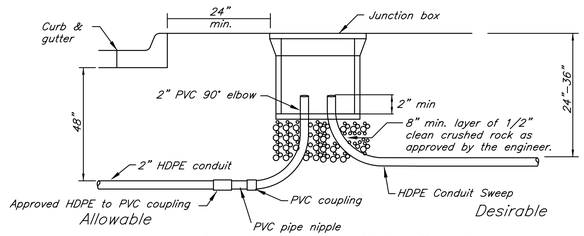



Conduit Marking Detail Notes:
1. Conduit under all roadway surfaces shall be placed a minimum of 4'-0" below the bottom of pavement and shall extend to a junction box or service box. The conduit shall be installed to drain. All ends shall be capped if not used. An aluminum marker shall be placed in the top of the curb directly over the conduit.
2. The contractor shall notify the City for inspection of the conduit installation by the inspector. At least 24 hours notice shall be provided. The conduit shall not be covered so as to ensure proper depth, correct conduit material, and proper conduit end treatment as described above.

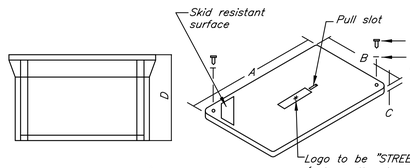
### Conduit Marking Detail

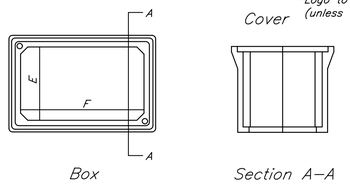



### Service Box Installation Detail




### Junction Box Installation Detail




Box Notes:
1. Boxes shall be stackable for extra depth.
2. All junction boxes, service boxes,, and covers shall be rated at no less than 22,500 lbs. test load (Tier 15) per ANSI/SCTE-77.
3. Material to be an aggregate consisting of sand and gravel bound together with a polymer and reinforced with continuous woven glass strands. It shall have the following properties.

   Compressive Strength-11,000 psi ASTM C-109/D-3410
   Tensile Strength-1,700 psi ASTM C-496/D-638/D-2343
   Flexural Strength-7,500 psi ASTM C-580/D-790
4. The Type 2 Service Box shall have a two-piece overlapping cover.

| Type | Approximate Dimensions (Inches) | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| 1-Junction | 12⅞ | 12⅞ | ¾ | 12¾ | 9¼-10½ | 9¾-10½ |
| 2-Junction | 18-18½ | 11¼ -11½ | 2 | 12 | 9½-10¼ | 16½-17¼ |
| 1-Service | 35⅝ | 24 | 3 | 24 | 22¼ | 33⅞ |
| 2-Service (4) | 47⅞ | 30⅛ | 3 | 24 | 28⅛ | 45⅝ |

Fiberglass Reinforced Polymer Concrete
Junction & Service Box Details

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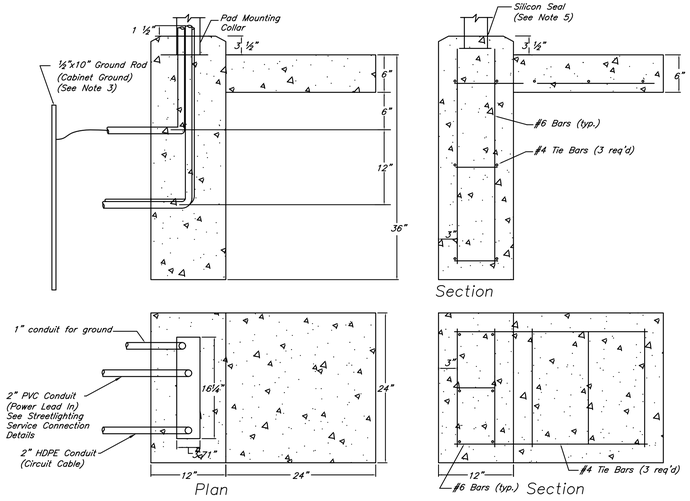
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STREET LIGHTING DETAILS
SHEET 2 OF 7

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

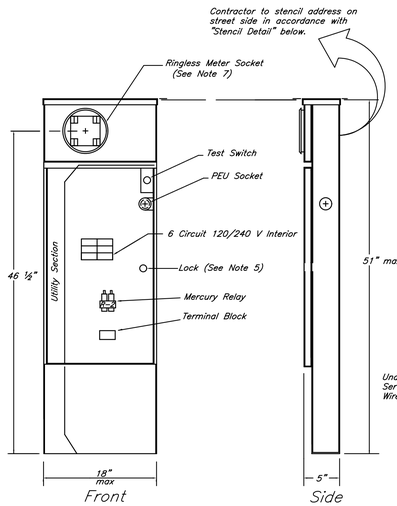
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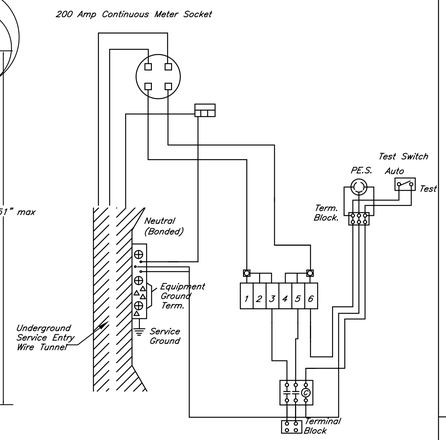



## Concrete Foundation
(1-Circuit Controller)

*Concrete Foundation Notes:*
1. See the plan sheets for specific details (i.e. pad size, conduit requirements for circuit cables) for each individual control center.
2. All concrete used in this work shall meet the requirements of the City and shall be KCMMB4K concrete.
3. Contractor to provide ground rod(s) as required for maximum of 25 ohms resistance to ground.
4. Duct Seal shall be applied at all conduit entrances after cable installation.
5. Seal the bottom edge of the cabinet at the contact point with the concrete pad with silicon sealant.
6. All reinforcing steel shall be ASTM A615 GR60.



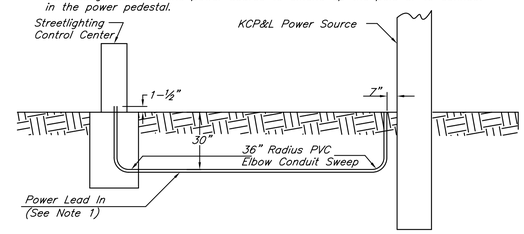

## Pad Mounted Controller (1-Circuit)
(Used Only in Temporary Situations as Approved by the City)



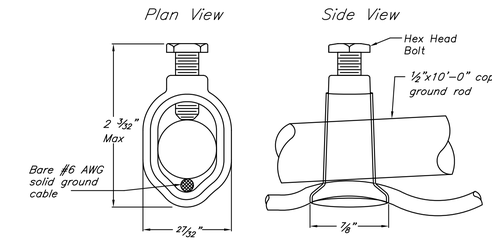

## Wiring Diagram

*1-Circuit & 4-Circuit Controller Notes:*
1. 3R Enclosure to be code 0.125 inch corrosion resistant aluminum.
2. All factory installed wire to be copper.
3. All terminals approved for copper or aluminum wire #6 to 350 MCM AWG.
4. Silver-plated copper bussed circuit breaker interior.
5. Factory installed Corbin lock assembly designed for standard No. 2 key with tapered latch.
6. Finish: Natural Aluminum unless otherwise specified.
7. Exposed 200A 240V 5 terminal meter socket w/horn bypass and ringless cover.
8. Contractor performing work on any streetlight circuit shall be required to install a city approved lockout device for each respective circuit affected. A City approved tag, indicating contractor's name and contact information shall be attached to the lockout device.
9. Photocell and pad shall be oriented to the north or east. Photocell is located on the right side of the cabinet.
10. Shall be UL listed for 5,000 amp short circuit current rating.
11. Include mounting collar with cabinet.

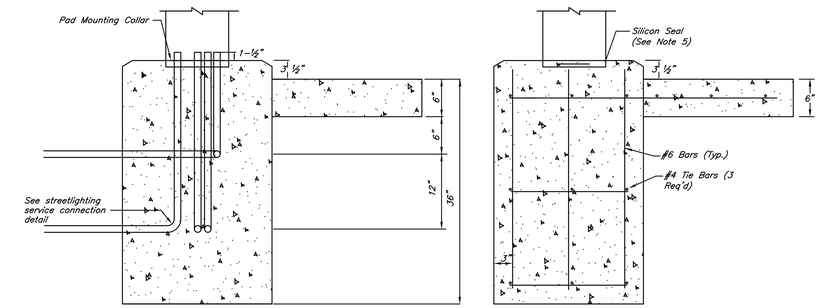
1. Contractor shall install schedule 40 PVC (gray) or SDR 13.5 HDPE (black with red stripe) conduit (sized per plan and details). The conduit shall be installed 30" deep with a 36" radius 90° PVC elbow to within 7" from the base of the power source and at the controller cabinet. If there are multiple conduits on the power pole, the new conduit should be installed adjacent to, and in contact with, the existing conduits.
2. The end of the conduit shall be left temporarily exposed until KCP&L completes the service hook-up. A lighted barricade or orange construction safety fencing shall be placed at the excavation.
3. Contractor shall install electrical service power cable from controller to the KCP&L power source. Contractor shall connect cables to the meter lugs and coil enough slack at the power source to extend up the pole or to connect in the power pedestal.



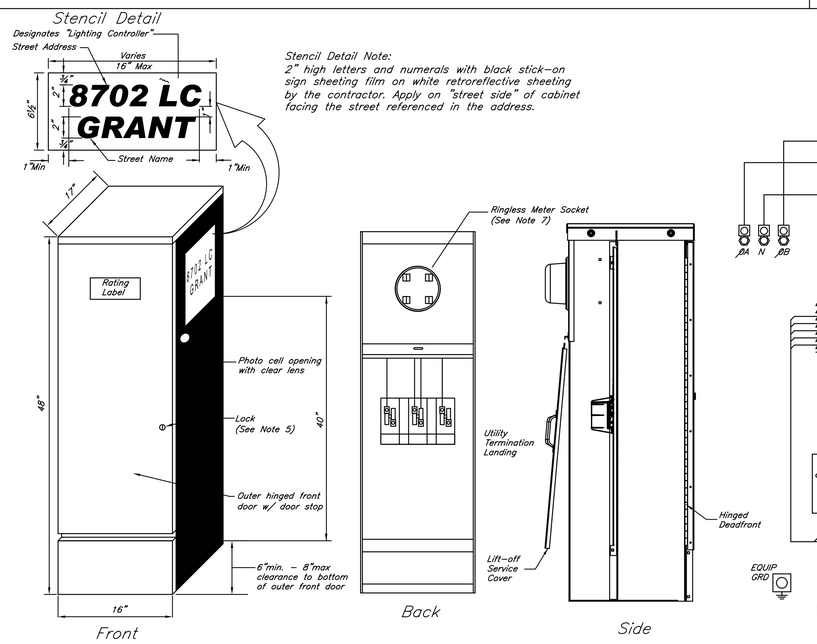

## Streetlighting Service Connection Details




## Ground Rod Clamp Connection Detail




## Concrete Foundation
(4-Circuit Controller)




## Pad Mounted Controller (4-Circuit)

## Wiring Diagram

| Circuit Directory | | | | |
|---|---|---|---|---|
| No. | Description | Qty | Amp | Pole |
| 1,2 | Main | 1 | 100 | 2 |
| 3,4 | Breaker 1 | 1 | 30 | 2 |
| 5,6 | Breaker 2 | 1 | 30 | 2 |
| 7,8 | Breaker 3 | 1 | 30 | 2 |
| 9,10 | Breaker 4 | 1 | 30 | 2 |
| 11 | Breaker 5 | 1 | 15 | 1 |
| 12 | Blank | | | |
| R1 | Relay 1 | 1 | 30 | 2 |
| R2 | Relay 2 | 1 | 30 | 2 |
| R3 | Relay 3 | 1 | 30 | 2 |
| R4 | Relay 4 | 1 | 30 | 2 |

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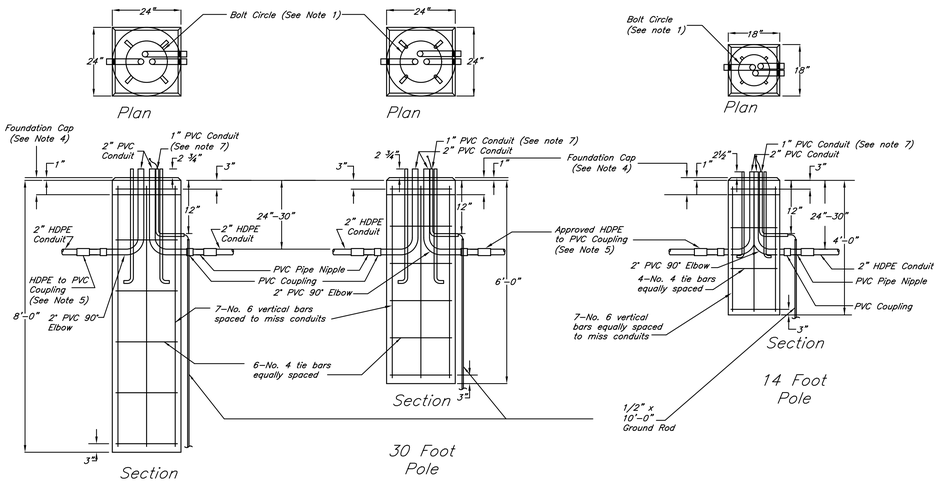
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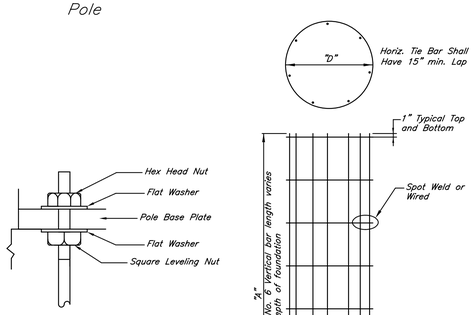
STREET LIGHTING DETAILS
SHEET 3 OF 7

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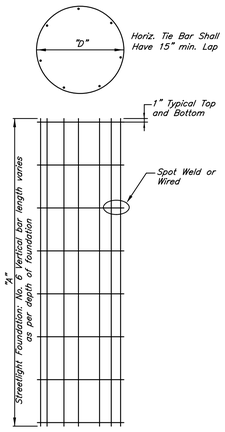
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Anchor Bolt Detail




Rebar Cage Detail

Concrete Foundation Notes:

1. Final pole, anchor bolt size, anchor bolt projection, and bolt circle shall be as per manufacturer's recommended practices.
2. All conduits and anchor bolts for all the new pole bases shall be rigidly installed before concrete is placed. Anchor bolts shall be spaced by means of a factory certified template or drawing, the center of which shall coincide with the center of the base.
3. All concrete pole bases shall be consolidated by an internal type vibrator.
4. Final 6" of concrete foundation (pole cap) shall be formed square. The cap shall be formed and poured after the arms are attached and the pole plumb.
5. PVC conduit elbows in concrete foundations shall be connected to HDPE conduit with PVC pipe nipple and approved PVC to HDPE coupling. All conduit elbows shall be considered subsidiary to the traffic signal pole base.
6. All concrete used in this work shall meet the requirements of the City and shall be KCMMB4K concrete.
7. Bare No. 6 solid copper ground conductor from internal pole grounding nut to clamp on ground rod.
8. All reinforcing steel shall be ASTM A615 GR60.

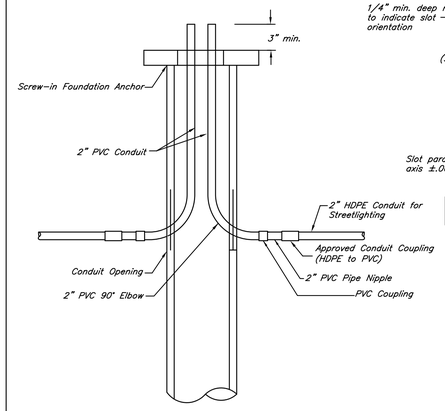
Streetlighting Foundation Horizontal Rebar

| Pole Fnd. Dia. | Pole Fnd. Depth | Rebar Cir. "D" | Spacing |
|---|---|---|---|
| 18" | 4' | 15" | 12" max. |
| 24" | 6' | 20" | 12" max. |
| 24" | 8' | 20" | 12" max. |

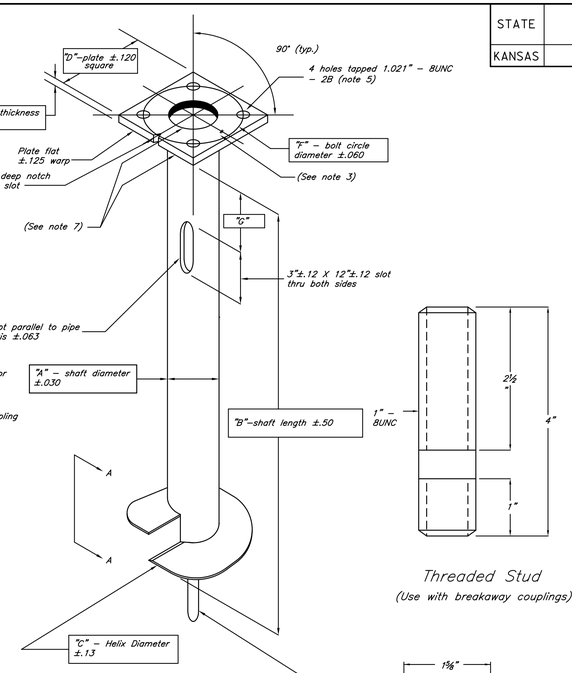
Streetlighting Foundation Vertical Rebar

| Pole Foundation Depth | Length "A" |
|---|---|
| 4'–0" | 3'–8" |
| 6'–0" | 5'–8" |
| 8'–0" | 7'–8" |

Concrete Foundation Details



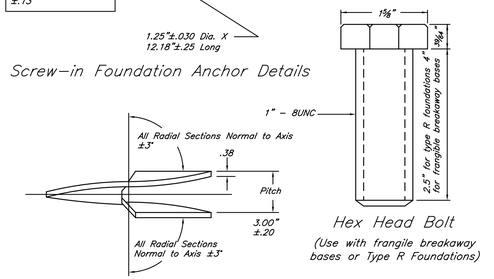

Conduit Entrance into Screw–in Foundation Anchor




Screw–in Foundation Anchor Details




Threaded Stud
(Use with breakaway couplings)




Hex Head Bolt
(Use with frangible breakaway bases or Type R Foundations)

Helix must be formed by matching metal die

View A–A

Screw–in Foundation Notes:

1. Finish: Hot dip galvanize per ASTM–A153 (Latest Revision).
2. Baseplate to be perpendicular to shaft axis (±1°) and hole and concentric (±.188 I.D. FIM) to shaft axis.
3. All bases shall be identified by the manufacturer name, abreviation, or symbol engraved on the shaft and/or top plate. The anchor type (R, T1, F1 & F2) shall be engraved into the top plate with 1/4" to 1/2" lettering.
4. Pilot point and shaft axes to be concentric (±.125 FIM) and in line (±2°).
5. Tap 1" holes on the specified bolt circle perpendicular to the baseplate. Clean and chase the threads after hot–dip galvanizing so that a bolt may be hand installed.
6. Preheat (room temperature 70°F), tumbleblast, handgrind, and clean baseplate, helix, and core on all welded areas.
7. Flamecut Irregularities Permissible:
   (1) Valleys not to exceed 3/32 in. below nominal surface level.
   (2) Peaks or positive irregularities not to exceed 1/32 in. above nominal surface level or intersections of nominal surfaces.
8. Manufacturer to have in effect industry recognized written quality control for all materials and manufacturing processes.
9. All 30' and 40' aluminum light poles shall be furnished with breakaway pole device. Breakaway pole devices are not required for 14' light poles.
10. All material is to be new, unused and mill traceable meeting the following specifications:

Baseplate: ASTM A36–(Latest Revision) hot rolled steel plate

Shaft: Steel pipe piles, seamless or straight welded, grade 2 per ASTM A252. Alternate Material: steel pipe Type E or S, grade B per ASTM A53.

Helix: ASTM A635–(Latest Revision) hot rolled steel plate

Pilot Point: ASTM A575–(Latest Revision) hot rolled steel

Stud: ANSI C 1045 hot rolled steel. Special 1" diameter hot dip galvanized stud threaded at both ends for T and F Type foundations when used with breakaway couplings. Stud diameter without threads shall be large enough to avoid slipping through threaded hole.

Bolt: ASTM A325 or grade 5 SAE J429 – 1" diameter hot dip galvanized hex head bolt for Type R screw–in foundation or T and F Type foundations when using frangible breakaway bases. Bolt shall include one each lock and flat washer.

| Type | Pole Type(s) | Max Torque Rating (lbs ft) | A Shaft Dia | B Shaft Length | C Helix Dia | D Plate Size | E Plate Thickness | F Bolt Circle | G Slot Location |
|---|---|---|---|---|---|---|---|---|---|
| R | OP14 | 15,000 | 6" | 48" | 12" | 10" | 0.75" | 9.5" | 12" |
| T1 | OP301,302,303 | 15,000 | 6" | 60" | 12" | 12" | 1.0" | 11" | 18" |
| F1 | OP401,OP402 | 20,000 | 8" | 60" | 14" | 12" | 1.0" | 11.5" | 18" |
| F2 | OP403 | 20,000 | 8" | 60" | 14" | 15" | 1.25" | 14.5" | 18" |

Screw-in Foundation Details

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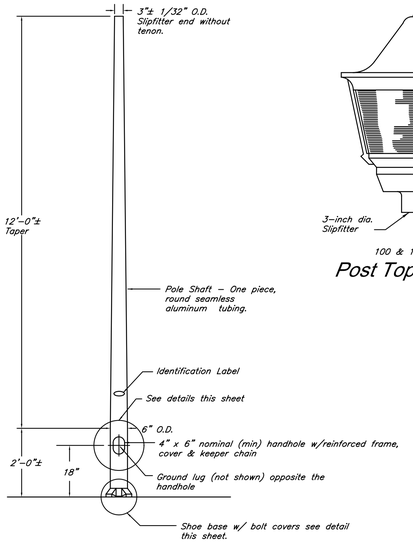
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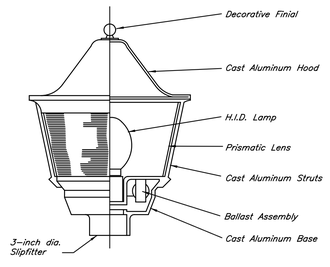
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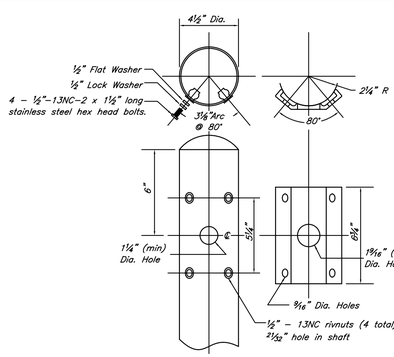



## 14' Pole Elevation (OP14)

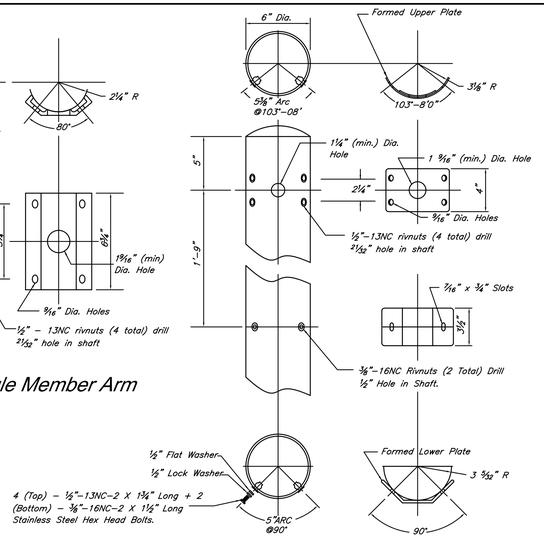



100 & 150 Watt HPS

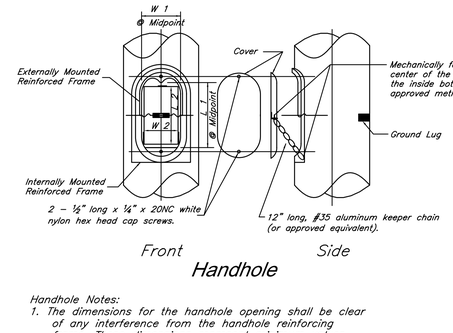
## Post Top Luminaire




## Type A - Single Member Arm

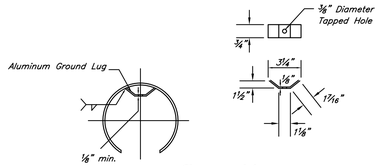



## Type B - Truss Arm




Front Side

## Handhole



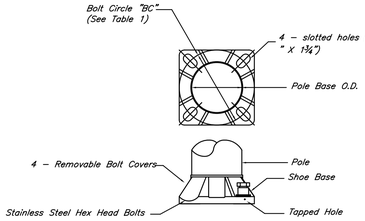

## Ground Lug

*Handhole Notes:*

1. The dimensions for the handhole opening shall be clear of any interference from the handhole reinforcing frame. These dimensions represent minimum values.
2. The handhole opening shall be smooth and free of burrs.
3. The handhole cover shall be uniform and fit tightly with no gaps and secured with nylon hex head screws.
4. Holes in cover shall be overdrilled and not tapped allowing screw to slide through.
5. Handhole for poles located on bridges shall be on same side as luminaire arm.
6. Handhole covers shall be universal in size to fit all poles interchangeably.

## Handhole Opening Dimensions (min)

| | 4" x 6" | 4" x 8" |
|---|---|---|
| W1 | 3 ⅞" | 4" |
| L1 | 5 ¼" | 7 ¼" |
| W2 | 3" | 3 7⁄16" |
| L2 | 3 ¹³⁄₁₆" | 6 3⁄32" |




## Shoe Base

## Material Data

| Component | Aluminum Alloy Designation | Specification |
|---|---|---|
| Shoe Base | 356–T6, Cast | ASTM B26 or B108 |
| Frangible Bases | 356–T6 | ASTM B108 |
| Breakaway Couplings | 6061–T6, Extruded | 1985 AASHTO |
| Skirt (Breakaway Coupling Assembly) | 3003–H14, Sheet | ASTM B209 |
| Bolt Covers | 356 F or 443, Cast | ASTM B26 or B108 |
| Pole Shaft | 6063–T6, Extruded | ASTM B221 |
| Ground Lug | 6061–T6 or 6063–T6 | ASTM B221 |
| Reinforced Handhole Frame | 356–T6 or 6061–T6 | ASTM B26, B108, or B221 |
| Handhole Cover | 6063–T6 | ASTM B209, B221, or B241 |
| Luminaire Arm – Tubing | 6063–T6 | ASTM B221 or B241 |
| – Pipe* | 6063–T6 | ASTM B429 |
| Luminaire Arm Plate | 6061–T6 or 6063–T6 | ASTM B221 |
| Luminaire Arm, Strut* & Connector* | 6061–T6 or 6063–T6 | ASTM B221, B24,1 or B429 |
| Pole Cap | 356 F or 443, CAST | ASTM B26 or B108 |
| Anchor Bolts | N/A | ASTM A–576 Steel, Galvanized per ASTM A–153 |

*Truss–Type Luminaire Arms (Type B) Only.

*Material Notes:*

1. Pole shaft shall have a satin ground finish.
2. All hardware (bolts, nuts, washers but not including anchor bolts) not otherwise specifically designated in the specifications or details shall be stainless steel per ASTM A193 Class 1 B8.
3. Anchor Bolts – Galvanized steel anchor bolts with 50,000 PSI minimum yield; top 10" min. galvanized; include one nut each and two flat washers galvanized to ASTM A–153 standards (4 bolts, 4 nuts, & 8 washers to be provided with each pole). Anchor bolts shall be used with concrete foundations. threaded stud (see pole foundation detail sheet) shall be used with type T and F screw–in foundation anchor when using breakaway couplings. Hex head bolt (see pole foundation detail sheet) shall be used with type R screw–in foundation anchor or T and F foundations when using frangible breakaway base.
4. All welding is to be done with 4043 weld wire. All arms and shafts shall have a mechanical strength of not less than T6 temper.

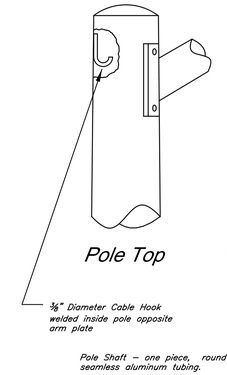
## Table 1 - Luminaire Arm, Pole, Shoe Base & Anchor Bolt Data

| OP Designation | Mounting Height (A) | Luminaire Arm(s) | | | | Pole Shaft | | | | Shoe Base | Anchor Bolt for Concrete Foundation | | | Screw–in Anchor Foundation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Luminaire 1 | | Luminaire 2 | | | | | | | | | | |
| | | Length (B) | Type | Length (B) | Type | Base O.D. | Top O.D. | Minimun Wall Thickness | Shaft Lengths (C) | Bolt Circle (BC) | Diameter | Length | Hook | Type |
| OP14 | 14 | NA | NA | NA | NA | 6" | 3" | 0.156" | 14' | 9.5" | 0.75"†10NC | 25" | 3" | R |
| OP301 | 30 | 6, 8 | A<br>B | NA | NA | 7" | 4.5" | 0.188" | 27'–6" | 11" | 1.0" 8NC | 36" | 4" | T1 |
| OP302 | 30 | 12 | | NA | NA | 8" | 6" | 0.188" | 26'–8" | 11" | 1.0" 8NC | 36" | 4" | T1 |
| OP303 | 30 | 8 | A<br>A | 8 | A | 8" | 4.5" | 0.188" | 27'–6" | 11" | 1.0" 8NC | 36" | 4" | T1 |
| OP401 | 40 | 6, 8 | A | NA | NA | 8" | 4.5" | 0.219" | 37'–6" | 11.5" | 1.0" 8NC | 36" | 4" | F1 |
| OP401 | 40 | 6, 8 | B | 6,8 | A | 8" | 4.5" | 0.219" | 37'–6" | 11.5" | 1.0" 8NC | 36" | 4" | F1 |
| OP402 | 40 | 10,12,15 | B | NA | NA | 8" | 6" | 0.219" | 36'–8" | 11.5" | 1.0" 8NC | 36" | 4" | F1 |
| OP403 | 40 | 8,12,15 | | 8,12,15 | B | 10" | 6" | 0.219" | 36'–8" | 14.5" | 1.0" 8NC | 48" | 4" | F2 |

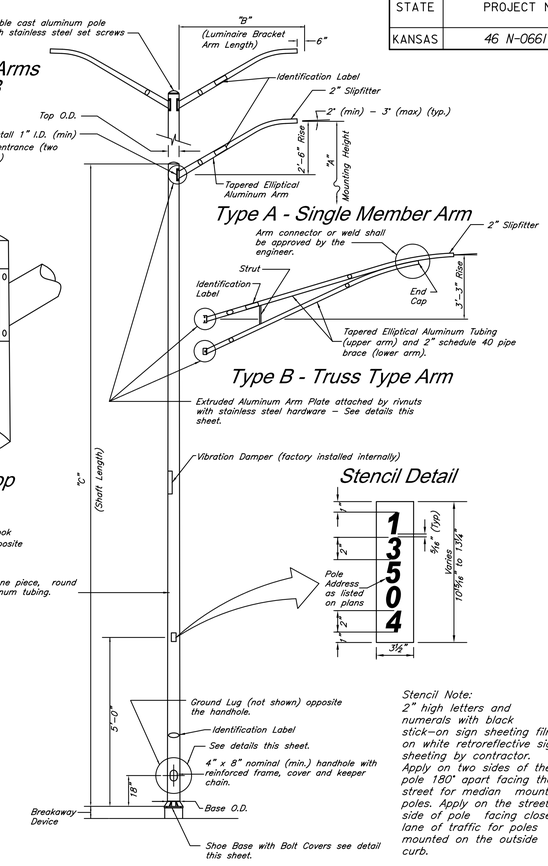
*Table 1 Notes:*

1. The intent of these material restrictions is to provide interchangeability of both types of luminaire arms for mounting on either the 30' or 40' pole.
2. Luminaire arms – 6' & 8' arms shall be single member (Type A) unless otherwise noted on the plans; 10, 12 & 15' arms shall be truss–type (Type B).
3. Table 1 represents pole shaft dimensions for a 30' and 40' pole to be installed with breakaway devices. The pole shaft length shall be dimensioned accordingly but the top & bottom pole diameters, bolt circle, mounting height, and luminaire arm design and rise shown in Table 1 and noted in the pole elevation detail shall be maintained (see note 2).
4. Anchor bolts/threaded studs shall project above the foundation as per manufacturer's recommended practices – 2.5" to 3". The leveling devices (i.e. washers) shall be installed between the steel shim plate, provided as per the manufacturer's recommended practices, and the top of the pole foundation.
5. Pole OP403 shall be pre–drilled for the mounting of twin luminaire arms whether or not twin arms are noted on the plans to be installed. If the second luminaire arm is not to be installed, the extra holes shall be 'plugged'.

## Twin Luminaire Arms Type A or B




## Pole Top




## 30' & 40' Pole Elevation

(See Table 1 for Designations & Dimensions)

*Stencil Note:*
2" high letters and numerals with black stick–on sign sheeting film on white retroreflective sign sheeting by contractor. Apply on two sides of the pole 180° apart facing the street for median mounted poles. Apply on the street side of pole facing closest lane of traffic for poles mounted on the outside curb.

## General Notes

1. All poles, arms, and miscellaneous equipment shall conform to these details and as specified by the City. The poles and arms shall be dimensioned to enable interchangeability.
2. The aluminum lighting standard including anchorage with luminaire properly installed shall be in accordance with the 2013 edition of American Association of State Highway and Transportation Officials (AASHTO) for continuous 90 MPH wind and a maximum luminaire size of 1.3 sq. ft. effective projected area and maximum 55 lbs.
3. Minor adjustments in the location of streetlight poles should be made in the field during construction in order to maintain 4'–0" clearance from the centerline of any fire hydrant to the face of pole.
4. All poles and arms shall be clearly identified by the manufacturer name, abbreviation or symbol engraved on the shaft, baseplate, handhole or other means such as to be readily visible after installation.
5. All 14' poles shall be installed with the handhole oriented 180 degrees from the direction vehicles approach.

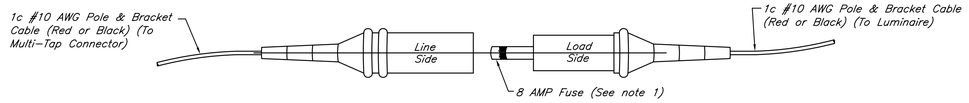
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KANSAS DEPARTMENT OF TRANSPORTATION

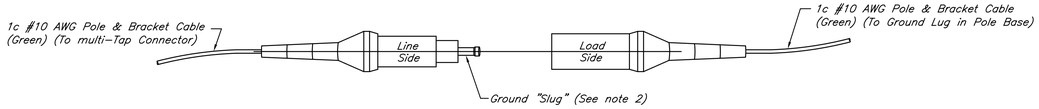
STREET LIGHTING DETAILS
SHEET 5 OF 7

Plotted : 25-APR-2019 13:02
Drawn By : lrosenbaum
File : 13668T5605.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 175 | 393 |



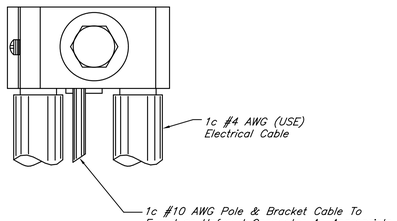

## Break-Away Fused Electrical Connector

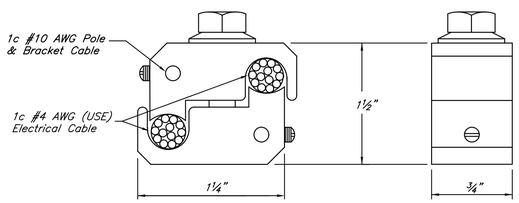


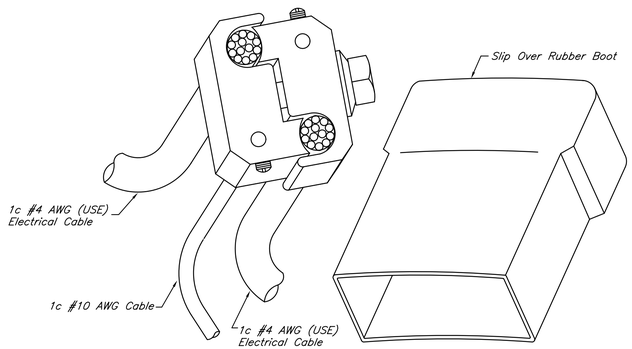

## Break-Away Non Fused Electrical Connector

Notes:

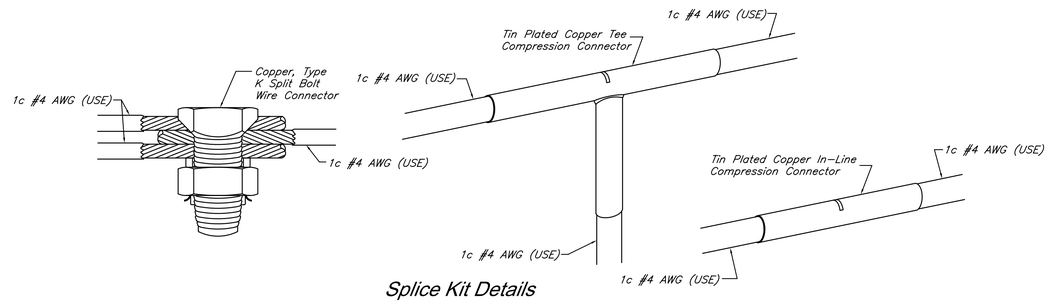
1. Fuse remains in "Load Side" after break-away.
2. Ground "Slug" remains in "Line Side" after break-away.



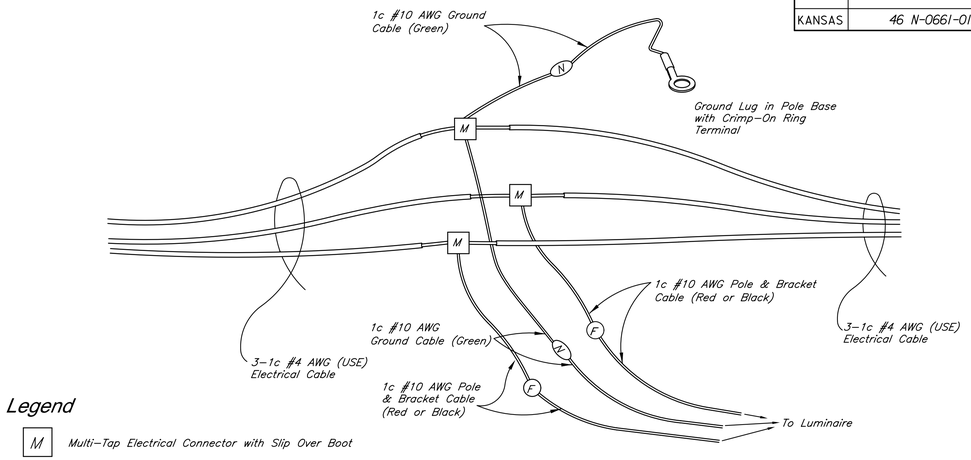




## Multi-Tap Electrical Connector




## Splice Kit Details

1. Tape connector completely with rubber electrical tape to cover all bare wire and connector.
2. Tape over with vinyl electrical tape
3. Apply liquid scotch coat.

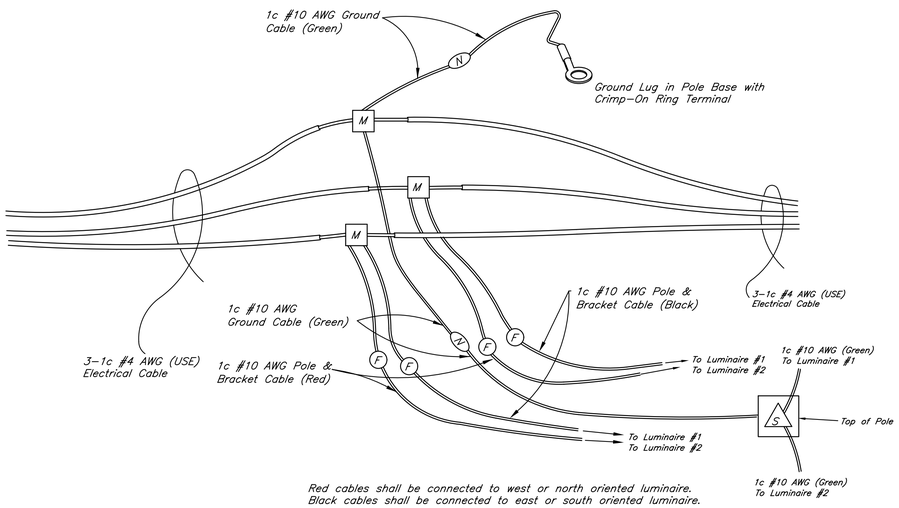



### Legend

- M — Multi-Tap Electrical Connector with Slip Over Boot
- F — Break-Away Fused Electrical Connector with 8 Amp Fuse
- N — Break-Away Non-Fused Electrical Connector with Ground "Slug"
- S — Splice Kit

## Electrical Connector Kit Schematic

(Single Luminaire)




Red cables shall be connected to west or north oriented luminaire.
Black cables shall be connected to east or south oriented luminaire.

## Electrical Connector Kit Schematic

(Twin Luminaires)

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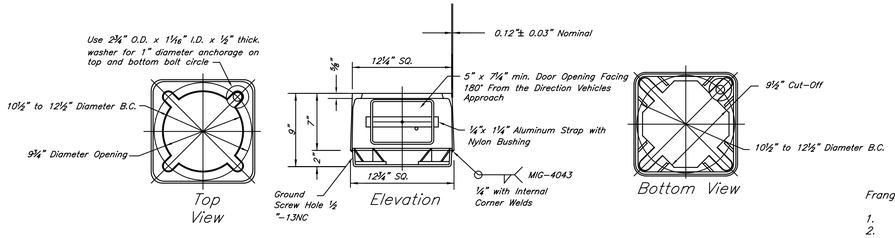
KANSAS DEPARTMENT OF TRANSPORTATION

STREET LIGHTING DETAILS
SHEET 6 OF 7

DATE
BY
REFERENCES NOTED
REFERENCES CHECKED

Plotted :25-APR-2019 13:02
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File : 136681S606.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 176 | 393 |




Frangible Base (30' Pole – Series 301, 302, & 303)
and (40' Pole – Series 401 & 402)



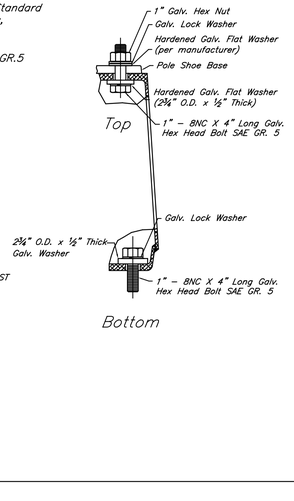

Frangible Base (40' Pole – Series 403)

Frangible Base Notes:

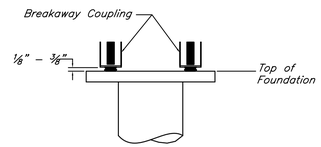
1. Material shall conform to ASTM designation B108 Alloy 356-T6.
2. Base shall conform to breakaway criteria of AASHTO Standard Specifications for structural supports for highway signs, luminaires and traffic signals (Latest Edition)
3. Fastener Quantities:
   (8) 1"-8NC x 4" long Galvanized Hex Head Bolt SAE GR.5
   (4) Hardened Galvanized Flat Washer
   2½" O.D. (Valmont Poles)
   2" O.D. (HAPCO Poles)
   (4) 1" Galvanized Hex Nut
   (8) Galvanized Lock Washer
   (8) 2¾" O.D. x ½" Thick Galvanized Washer




Door Screw




# Frangile Base Details




Breakaway Coupling Installation

Coupling Notes:
1. Shall be as per manufacturer's recommended procedures.
2. All 30' & 40' poles shall be furnished with breakaway couplings or breakaway bases as detailed




# Breakaway Coupling Assembly & Coverskirt Detail

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KANSAS DEPARTMENT OF TRANSPORTATION

STREET LIGHTING DETAILS
SHEET 7 OF 7

| DATE | BY | |
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| | | REFERENCES NOTED |
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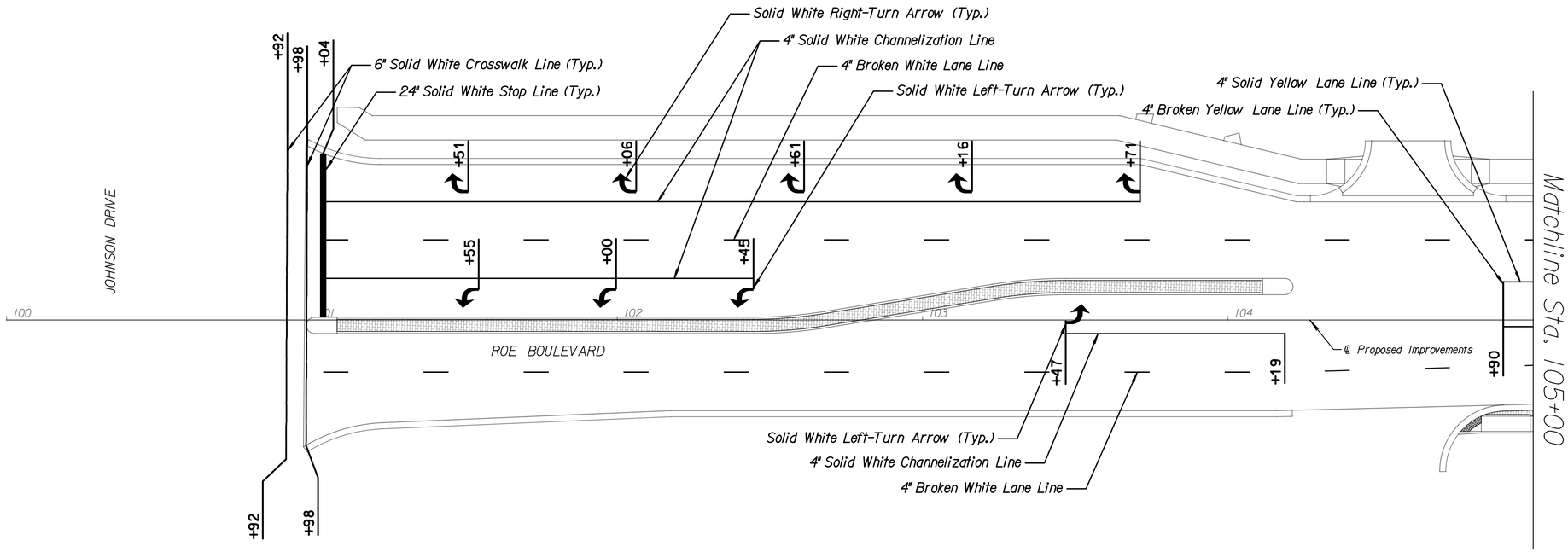
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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| KANSAS | 46 N-0661-01 | 2019 | 177 | 393 |

SCALE

PLAN: Lat. & Long. 20' 0 20' 40'




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| REFERENCES CHECKED | |

Plotted : 25-APR-2019 13:02

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*KANSAS DEPARTMENT OF TRANSPORTATION*

PAVEMENT MARKING PLAN

ROE BOULEVARD

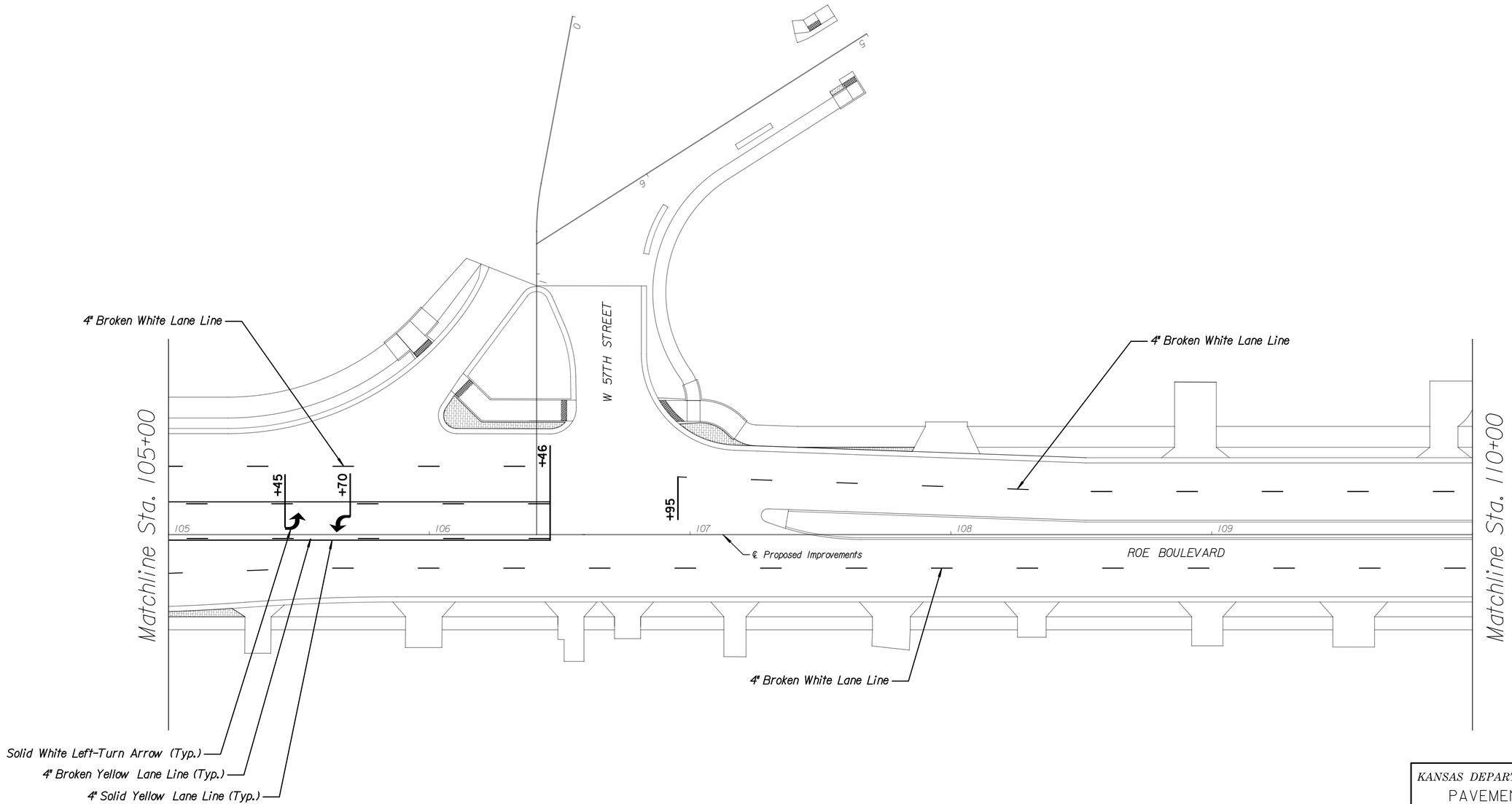
STA. 100+00 TO STA. 105+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 178 | 393 |

SCALE

20' 0 20' 40'

PLAN: Lat. & Long.




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Plotted :25-APR-2019 13:02

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*KANSAS DEPARTMENT OF TRANSPORTATION*

PAVEMENT MARKING PLAN

ROE BOULEVARD

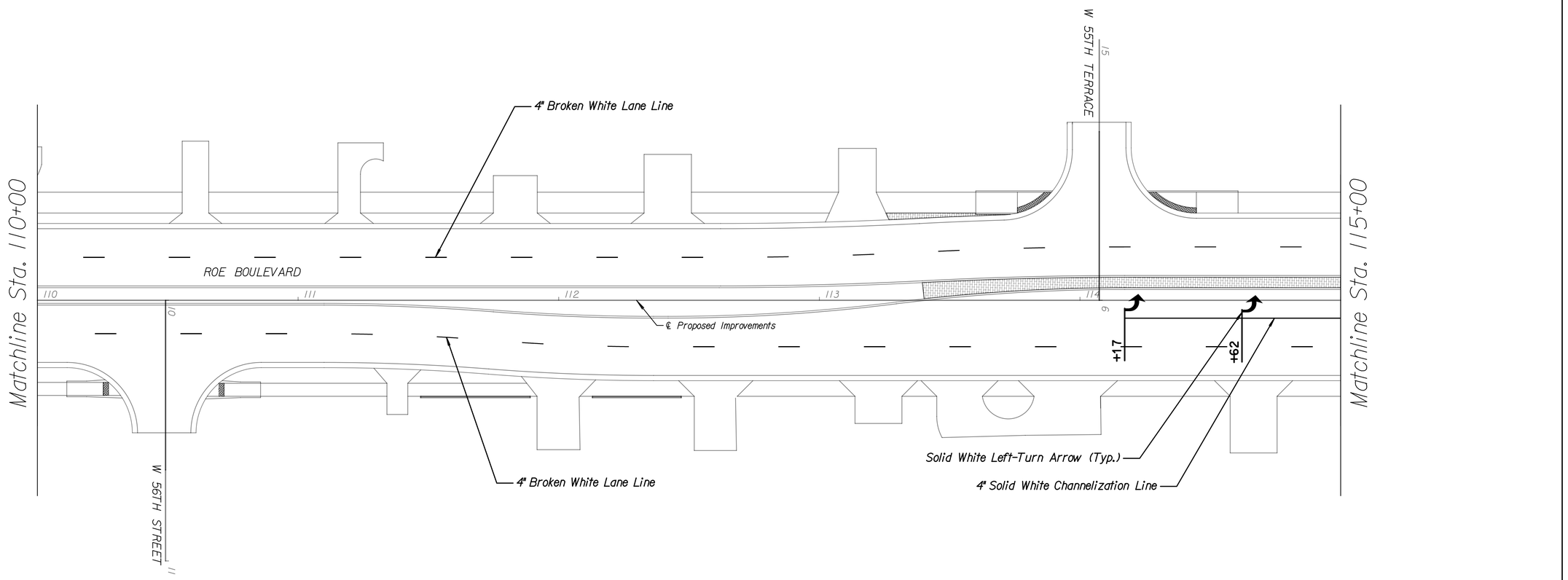
STA. 105+00 TO STA. 110+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 179 | 393 |

SCALE

20' 0 20' 40'

PLAN: Lat. & Long.




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| REFERENCES NOTED | |
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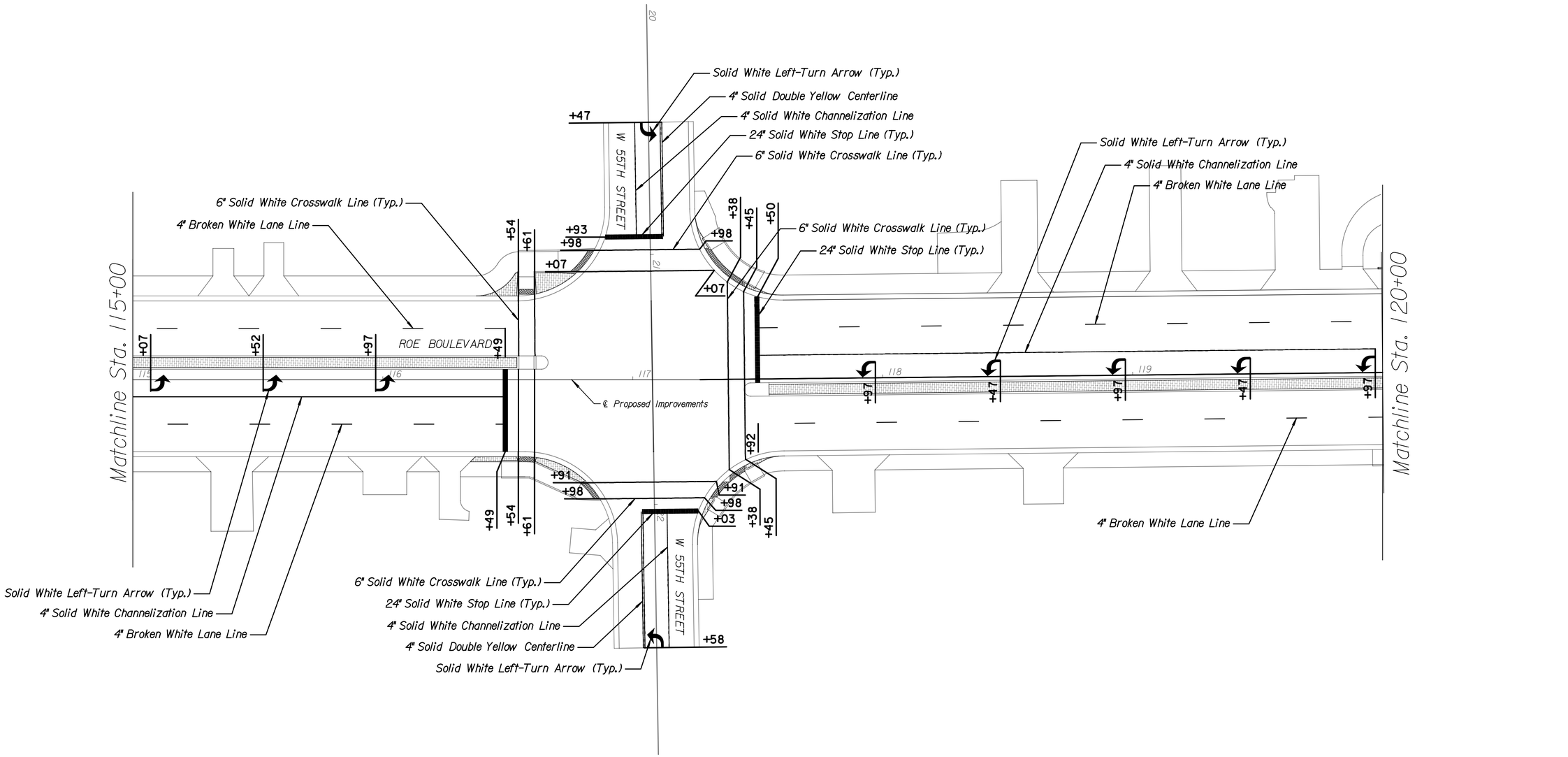
# PAVEMENT MARKING PLAN

## ROE BOULEVARD

## STA. 110+00 TO STA. 115+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 180 | 393 |

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'




KANSAS DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKING PLAN
ROE BOULEVARD
STA. 115+00 TO STA. 120+00

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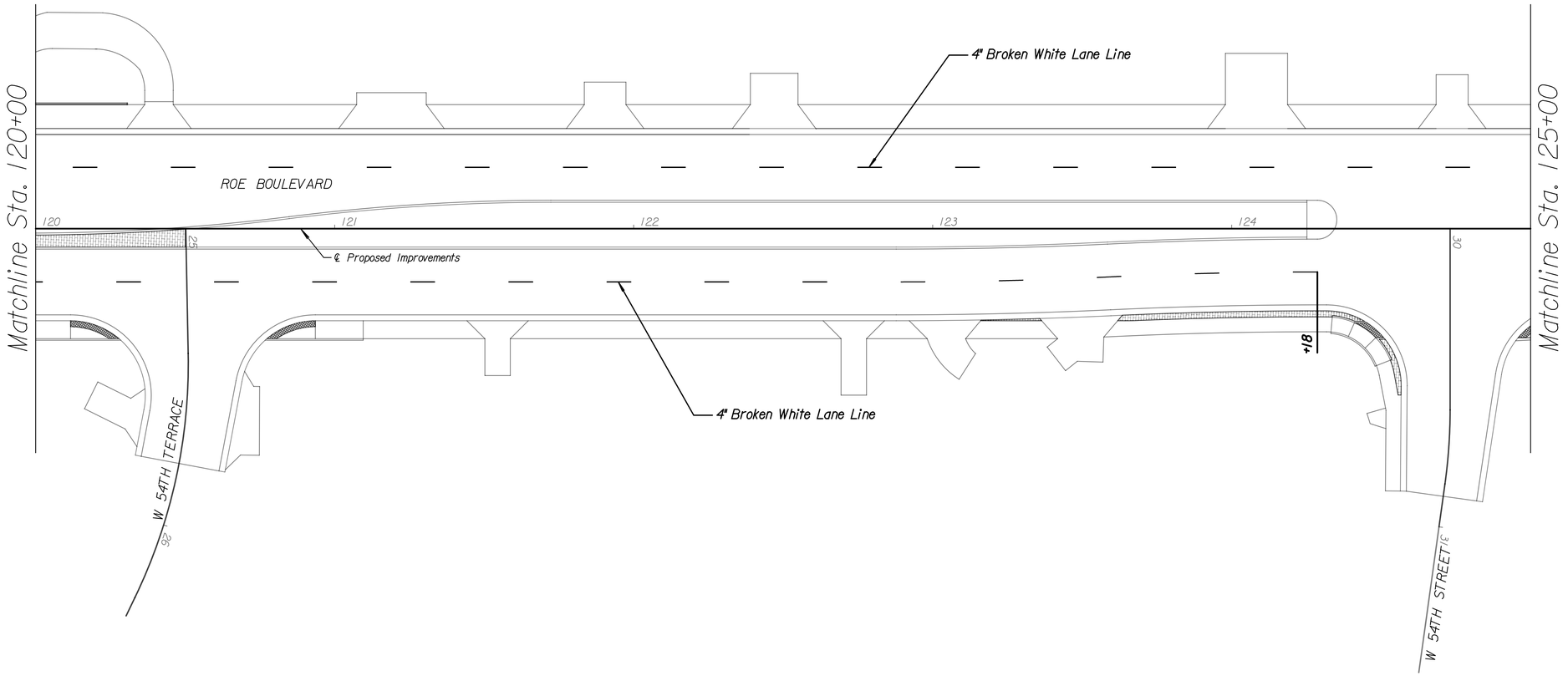
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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| KANSAS | 46 N-0661-01 | 2019 | 181 | 393 |

SCALE

20' 0 20' 40'

PLAN: Lat. & Long.




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| | | REFERENCES CHECKED |

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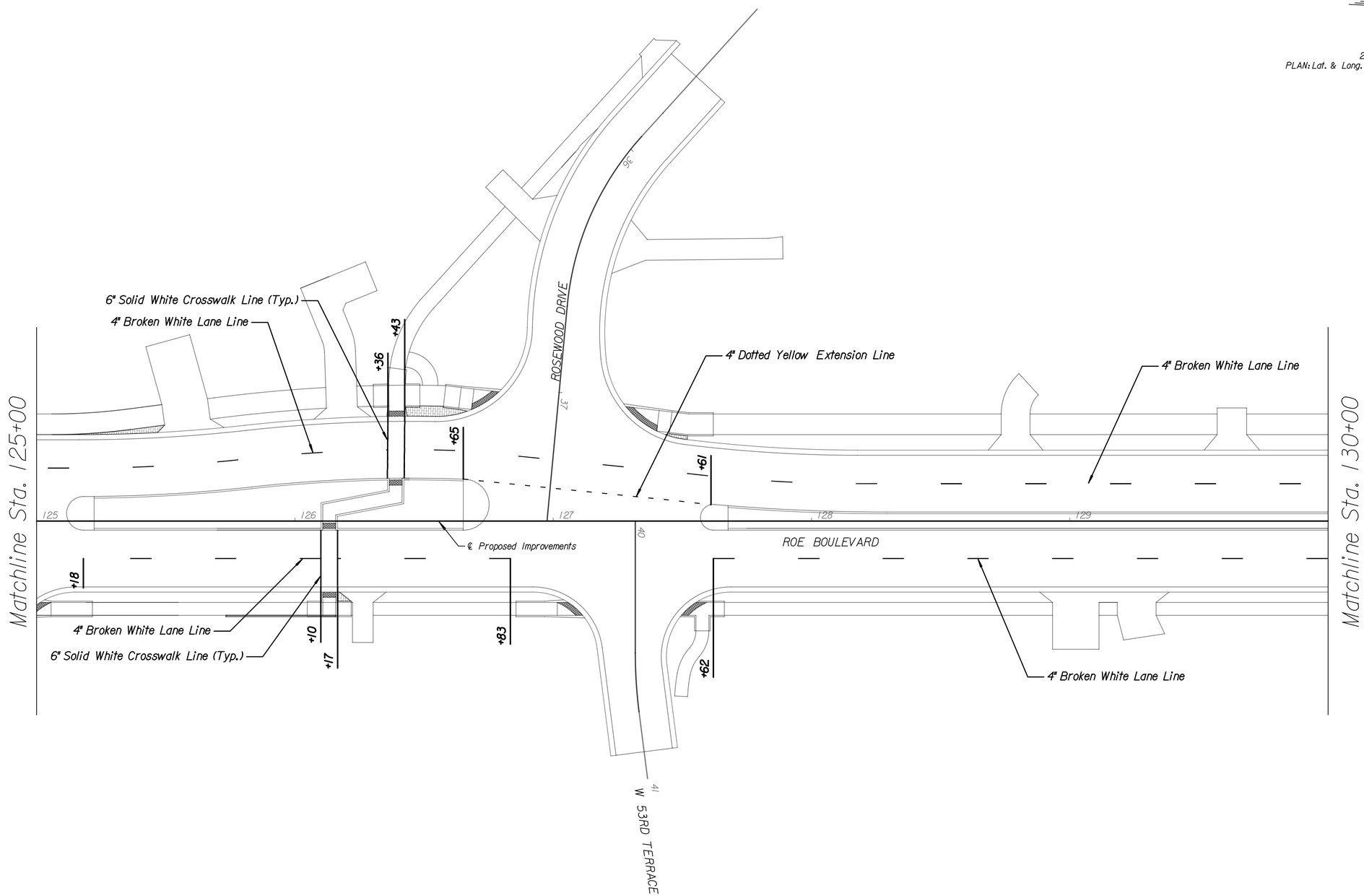
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# PAVEMENT MARKING PLAN
## ROE BOULEVARD
## STA. 120+00 TO STA. 125+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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SCALE
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PLAN: Lat. & Long.



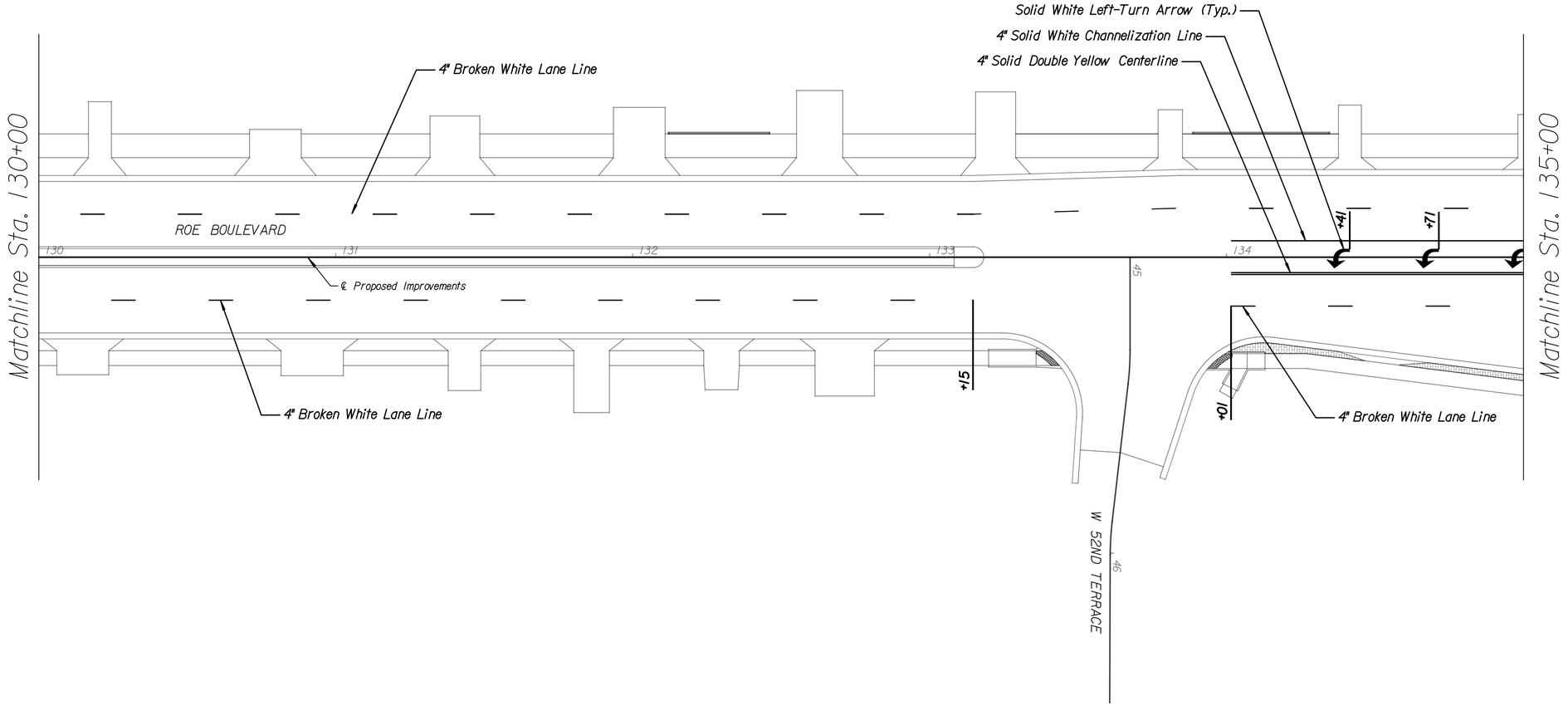

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KANSAS DEPARTMENT OF TRANSPORTATION
# PAVEMENT MARKING PLAN
## ROE BOULEVARD
## STA. 125+00 TO STA. 130+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 183 | 393 |

SCALE
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PLAN: Lat. & Long.




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| REFERENCES NOTED | |
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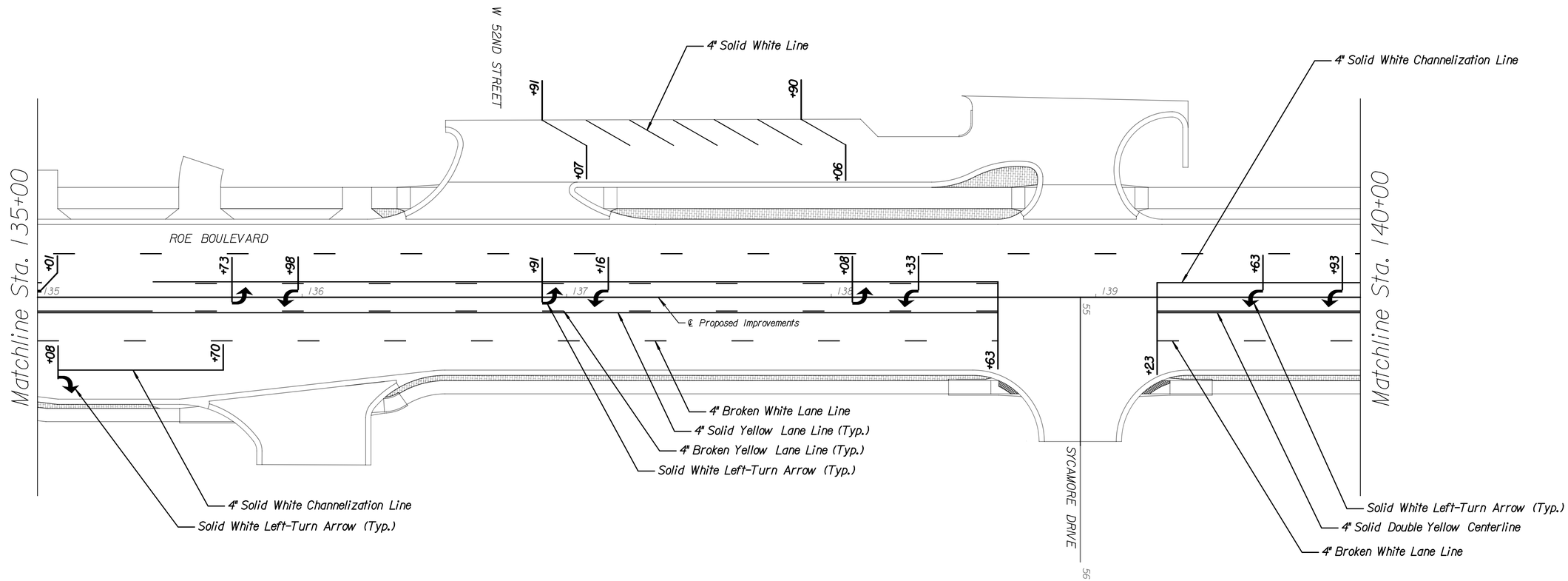
*KANSAS DEPARTMENT OF TRANSPORTATION*

# PAVEMENT MARKING PLAN
## ROE BOULEVARD
## STA. 130+00 TO STA. 135+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 184 | 393 |

SCALE

PLAN: Lat. & Long. 20' 0 20' 40'




| BY | DATE |
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| REFERENCES NOTED | |
| REFERENCES CHECKED | |

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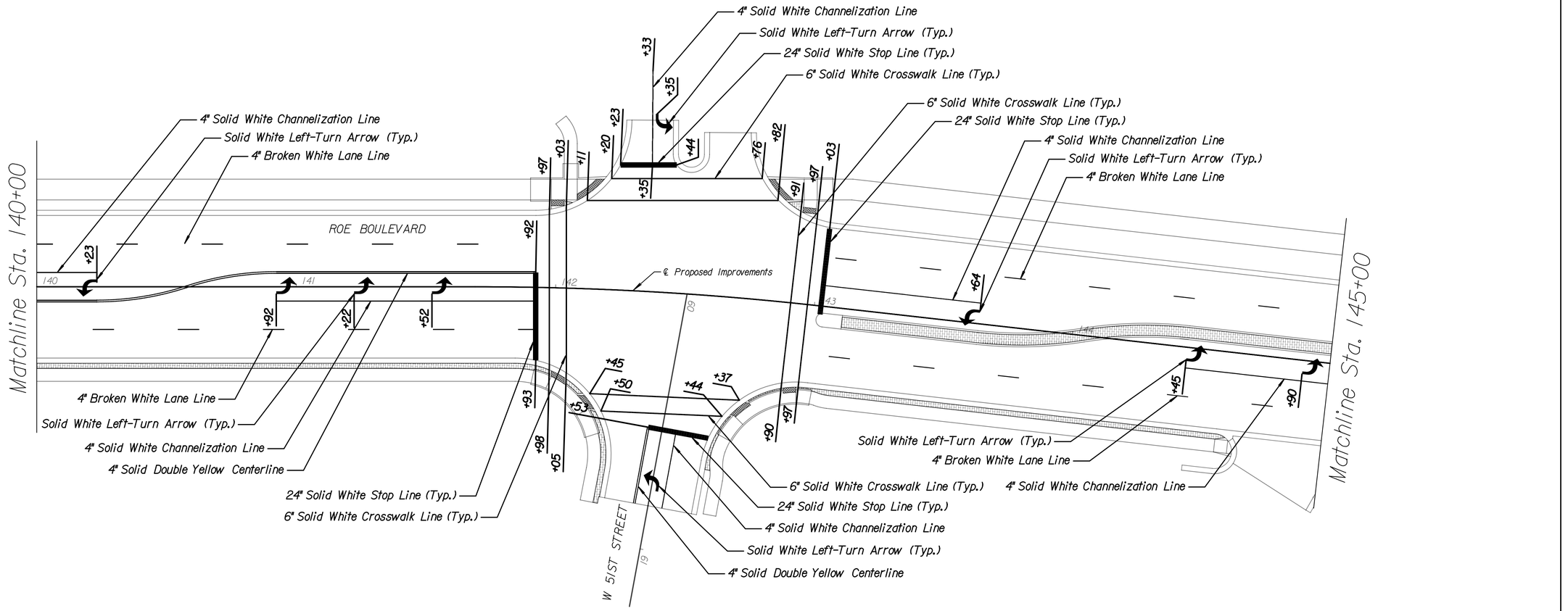
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File : 13668T5208.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

# PAVEMENT MARKING PLAN
## ROE BOULEVARD
## STA. 135+00 TO STA. 140+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 185 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.




| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:02

Drawn By : Irosenbaum
File : 136681T5209.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKING PLAN
ROE BOULEVARD
STA. 140+00 TO STA. 145+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 186 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

Solid White Thru-Right Arrow (Typ.)
Solid White Left-Turn Arrow (Typ.)
4" Solid White Channelization Line
12" Yellow Crosshatch Line (Typ.) @ 20' Spacing
4" Solid Double Yellow Centerline
4" Dotted White Extension Line (Typ.)
6" Solid White Crosswalk Line (Typ.)
24" Solid White Stop Line (Typ.)
Solid White Right-Turn Arrow (Typ.)
4" Broken White Lane Line
24" Solid White Stop Line (Typ.)
6" Solid White Crosswalk Line (Typ.)
4" Broken White Lane Line
Matchline Sta. 150+00
Matchline Sta. 145+00
ROE BOULEVARD
50TH TERRACE
ROE LANE
℄ Proposed Improvements
Solid White Left-Turn Arrow (Typ.)
4" Solid White Channelization Line
4" Broken White Lane Line
24" Solid White Stop Line (Typ.)
6" Solid White Crosswalk Line (Typ.)
Solid White Bike Lane Marking
4" Solid White Channelization Line
6" Solid White Crosswalk Line (Typ.)
24" Solid White Stop Line (Typ.)
4" Solid White Channelization Line
4" Dotted White Extension Line (Typ.)
Solid White Left-Turn Arrow (Typ.)
4" Solid Double Yellow Centerline
4" Solid White Channelization Line

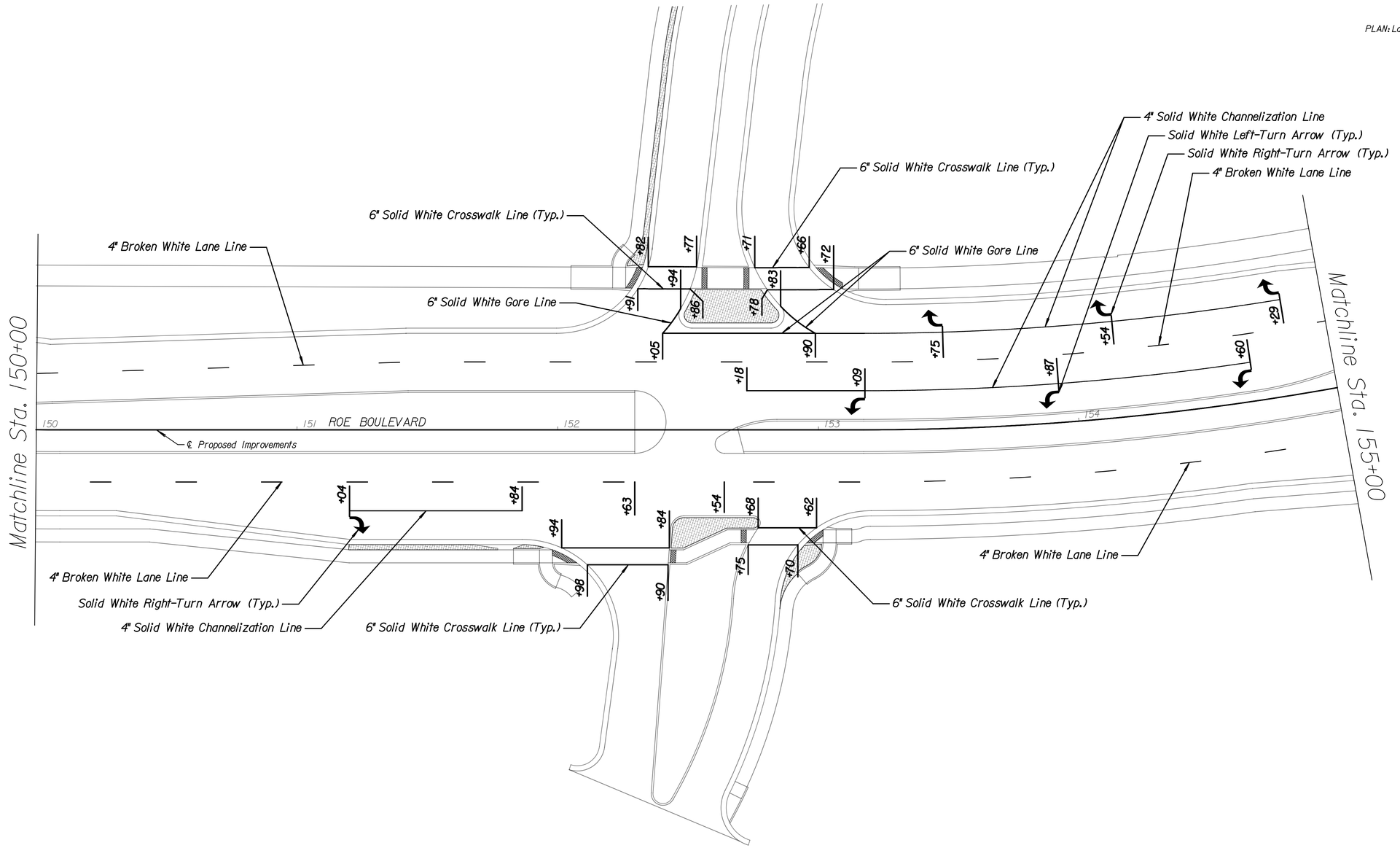
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KANSAS DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKING PLAN
ROE BOULEVARD
STA. 145+00 TO STA. 150+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 187 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.




| DATE | BY | |
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| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:02
Drawn By : lrosenbaum
File : 13668T5211.dgn

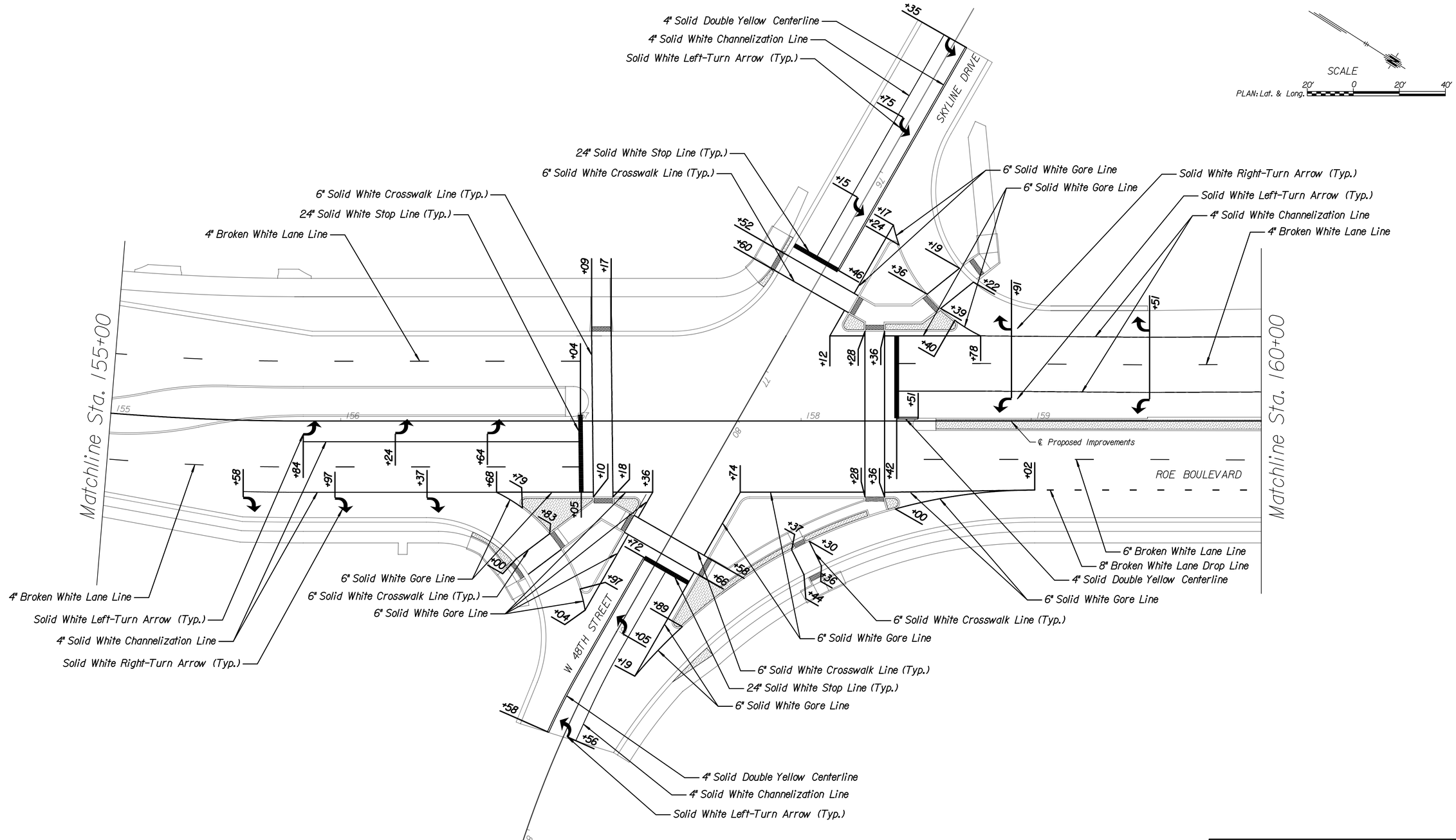
KANSAS DEPARTMENT OF TRANSPORTATION

# PAVEMENT MARKING PLAN
## ROE BOULEVARD
## STA. 150+00 TO STA. 155+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 188 | 393 |

| DATE | BY | |
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| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

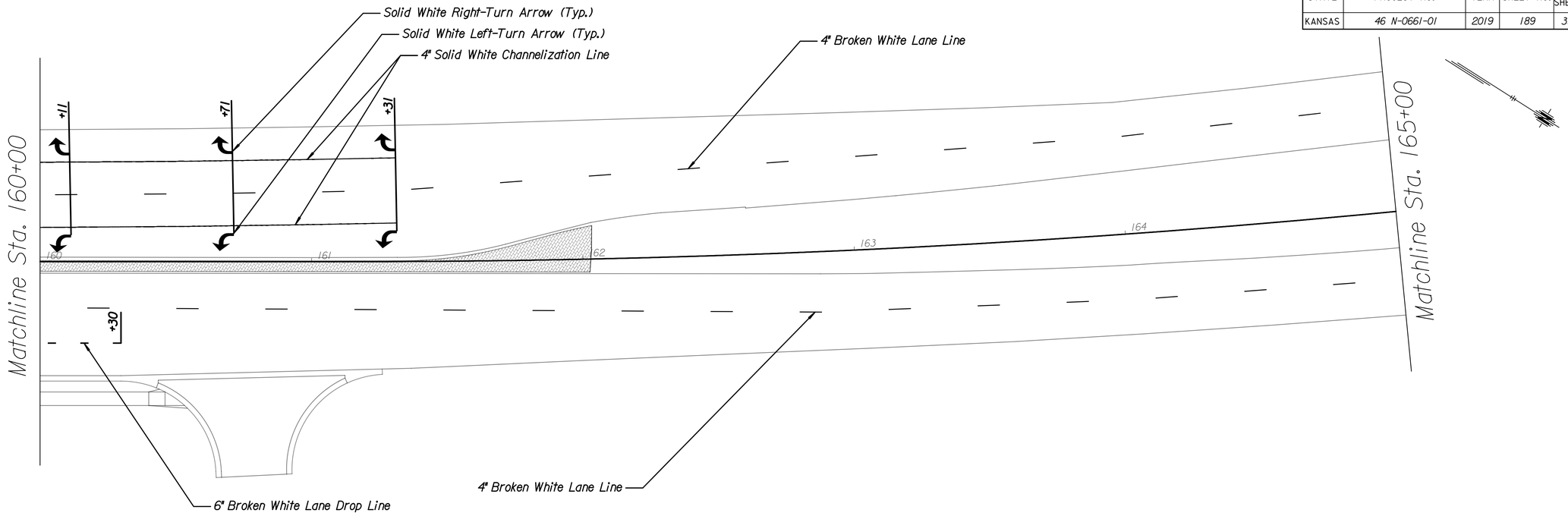
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PLAN: Lat. & Long.

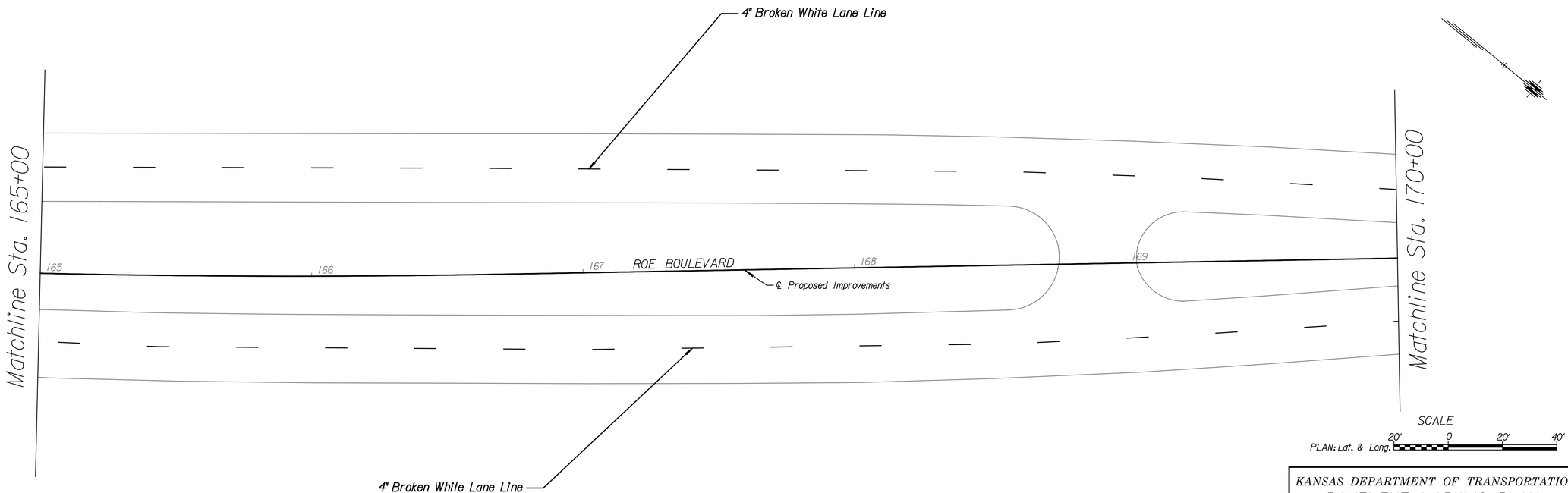



KANSAS DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKING PLAN
ROE BOULEVARD
STA. 155+00 TO STA. 160+00

Plotted : 25-APR-2019 13:02
Drawn By : lrosenbaum
File : 136681T5212.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 189 | 393 |




KANSAS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN

ROE BOULEVARD

STA. 160+00 TO STA. 170+00

| DATE | BY | REFERENCES NOTED |
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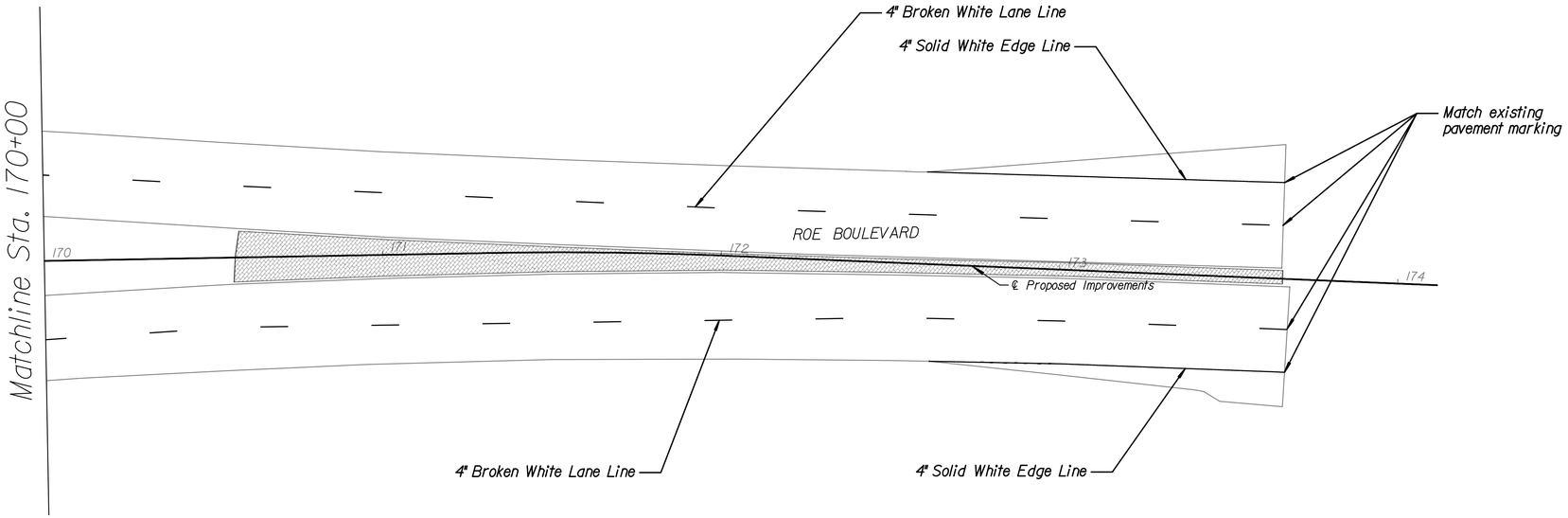
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File : 13668T5213.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 190 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.




| DATE | BY | |
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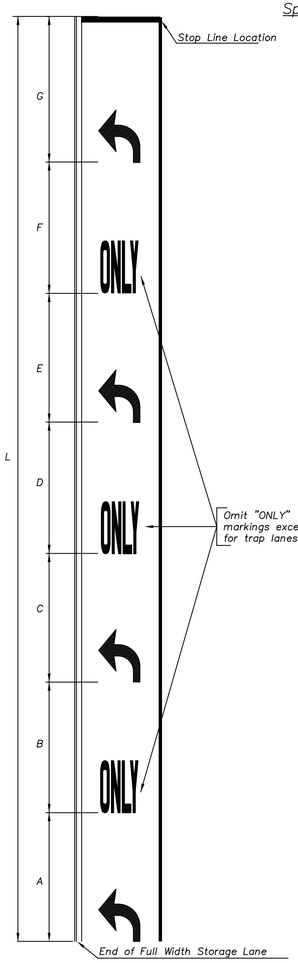
*KANSAS DEPARTMENT OF TRANSPORTATION*

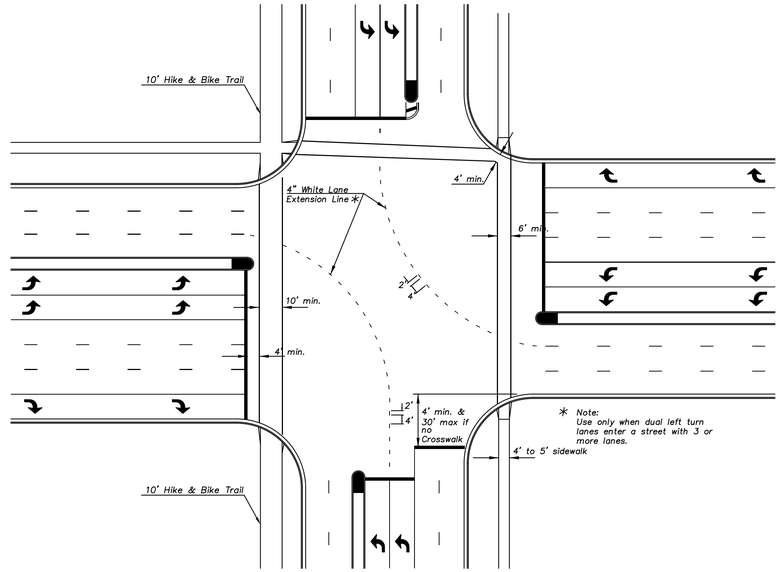
# PAVEMENT MARKING PLAN
# ROE BOULEVARD
# STA. 165+00 TO STA. 173+68

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|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 191 | 393 |

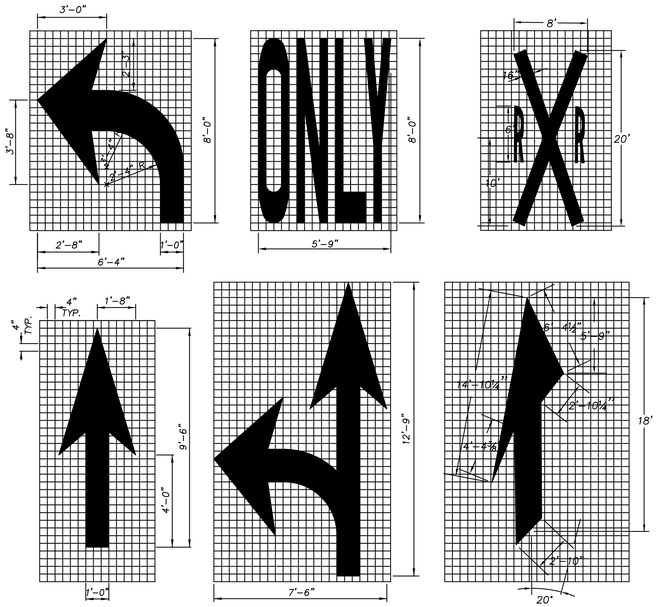
| L | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| <80' | One Arrow | | | | | | |
| 81'–100' | 30' | 30' | 21'–40' | | | | |
| 101'–120' | 40' | 40' | 21'–40' | | | | |
| 121'–140' | 45' | 45' | 31'–50' | | | | |
| 141'–160' | 55' | 55' | 31'–50' | | | | |
| 161'–180' | 65' | 65' | 31'–50' | | | | |
| 181'–200' | 75' | 75' | 31'–50' | | | | |
| 201'–220' | 80' | 80' | 41'–60' | | | | |
| 221'–240' | 45' | 45' | 45' | 45' | 41'–60' | | |
| 241'–260' | 50' | 50' | 50' | 50' | 41'–60' | | |
| 261'–280' | 55' | 55' | 55' | 55' | 41'–60' | | |
| 281'–300' | 60' | 60' | 60' | 60' | 41'–60' | | |
| 301'–320' | 65' | 65' | 65' | 65' | 41'–60' | | |
| 321'–340' | 70' | 70' | 70' | 70' | 41'–60' | | |
| 341'–360' | 75' | 75' | 75' | 75' | 41'–60' | | |
| 361'–380' | 80' | 80' | 80' | 80' | 41'–60' | | |
| 381'–400' | 55' | 55' | 55' | 55' | 55' | 55' | 51'–70' |
| 401'–420' | 60' | 60' | 60' | 60' | 60' | 60' | 41'–60' |
| 421'–440' | 65' | 65' | 65' | 65' | 65' | 65' | 31'–50' |
| 441'–460' | 65' | 65' | 65' | 65' | 65' | 65' | 51'–70' |
| 461'–480' | 70' | 70' | 70' | 70' | 70' | 70' | 41'–60' |
| 481'–500' | 75' | 75' | 75' | 75' | 75' | 75' | 31'–50' |
| >500' | 80' | 80' | 80' | 80' | 80' | 80' | Varies |

Turn Lane Word and Symbol Spacing Schedule




Typical Crosswalk and Left Turn Extension Line Markings

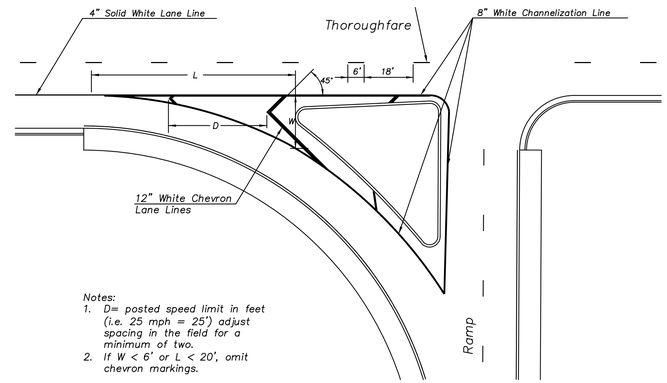



Word and Symbol Details

Notes:
1) Word & symbol markings shall be white.
2) Right Turn and Combination Right Turn/Straight arrows are reverse of arrows shown.

## Pavement Marking General Notes

1. All permanent pavement markings shall be provided and installed by the contractor as indicated in the plans or as directed by the City Inspector. See the Pavement Marking Material Matrix and the Bill of Materials for the type of material required for this specific project.
2. Pavement markings on concrete, asphalt, chip seal or UBAS shall be per the specifications, unless otherwise indicated on the plans or directed by the City Inspector.
3. Crosswalk lines shall be installed such that the minimum distance between the inside edges of the line is 6' for standard crosswalks or 10' for bike trail crossings.
4. Stop lines shall be installed such that the minimum distance between the trailing edge of the stop line and the leading edge of the first crosswalk line is 4 feet.
5. The proposed permanent markings shall be laid out by the contractor in advance of the marking installation. Markings shall not be applied until the layout and conditions of the surface have been approved by the City Inspector.




Notes:
1. D= posted speed limit in feet (i.e. 25 mph = 25') adjust spacing in the field for a minimum of two.
2. If W < 6' or L < 20', omit chevron markings.

Typical Interstate Ramp Entrance Markings

| Pavement Marking Material Matrix | | | | |
|---|---|---|---|---|
| Permanent Markings | Pavement Type | | | |
| | Asphalt | UBAS | Chip Seal | Concrete |
| Words & Symbols | PTP | PTP | PCP[3] | PCP[2] |
| Int'l Symbol of Accessibility | PTP | PTP | – | PTP[3] |
| Transverse Lines | TP[1] | TP[1] | PCP[3] | IMP[1] |
| Longitudinal Lines | TP | TP | UA | IMP |
| Temporary Markings | Pavement Type | | | |
| | Asphalt | UBAS | Chip Seal | Concrete |
| Words & Symbols | CP P[4] | CP P[4] | – | CP P |
| Int'l Symbol of Accessibility | CP P[4] | CP P[4] | – | CP P |
| Transverse Lines | CP P[4] | CP P[4] | P[4] | CP P |
| Longitudinal Lines | CP P[4] | CP P[4] | TRPM[4] P[4] | CP P |

## Pavement Marking Material Matrix Notes

1. Applies only to tranverse lines that can be installed with one pass of the installation equipment, e.g. 24" stop lines, shall be pre-formed thermoplastic on asphalt or UBAS and inlaid patterned cold plastic on concrete.
2. All patterned cold plastic on concrete shall be inlaid with a primer per the specifications.
3. Markings so indicated shall be installed with a primer.
4. Markings so indicated are acceptable on asphalt surfaces only when installed prior to the application of the final surface material.

## Legend:

TP – Thermoplastic
PTP – Pre formed Thermoplastic
PCP – Patterned Cold Plastic
IMP – Integrated Multi polymer
UA – Urethane Acrylate
CP – Cold Plastic
P – Paint
TRPM – Temporary Raised Pavement Marker

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

KANSAS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING DETAILS

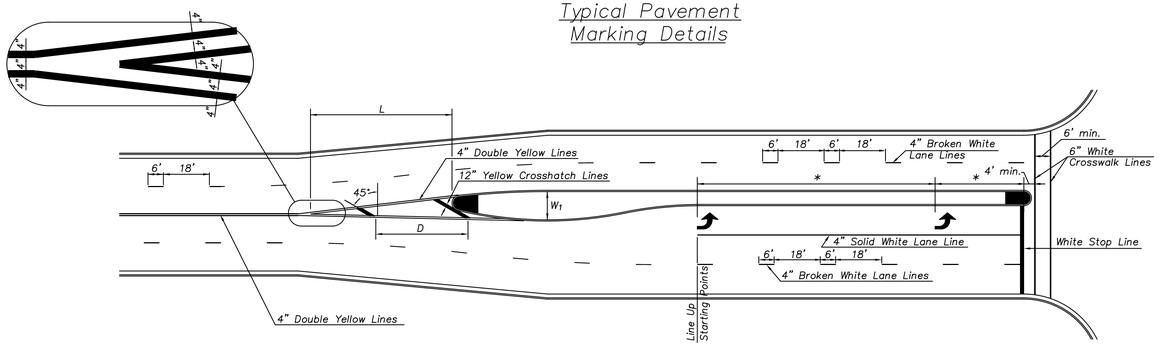
SHEET 1 OF 5

DATE
BY
REFERENCES NOTED
REFERENCES CHECKED

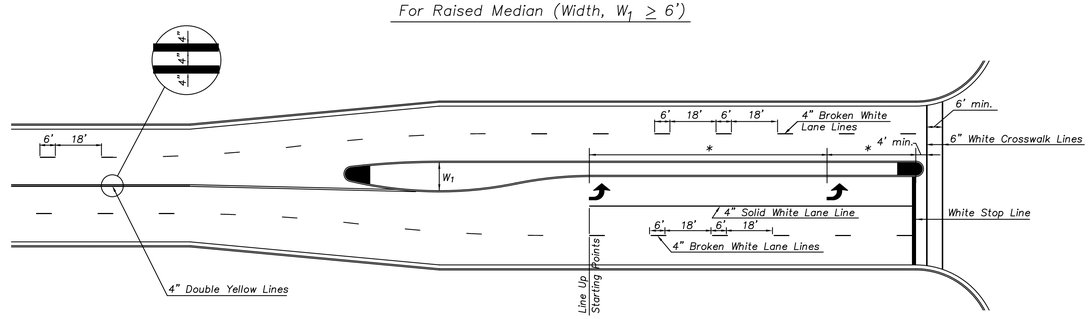
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File : 136681T501.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 192 | 393 |

# Typical Pavement Marking Details

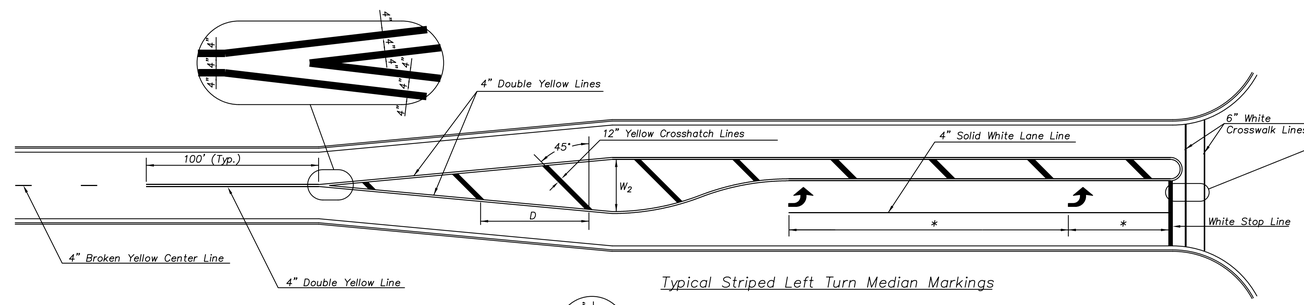



For Raised Median (Width, $W_1 \geq 6'$)



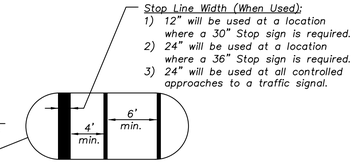

For Raised Median (Width, $W_1 < 6'$)

Notes:
1) * Variable, see spacing schedule and/or plans for location.
2) D= posted speed limit in feet (i.e. 25mph = 25' spacing) adjust in the field for a minimum of two.
3) If $W_2 < 4'$ or $L < 20'$, omit crosshatch lines.

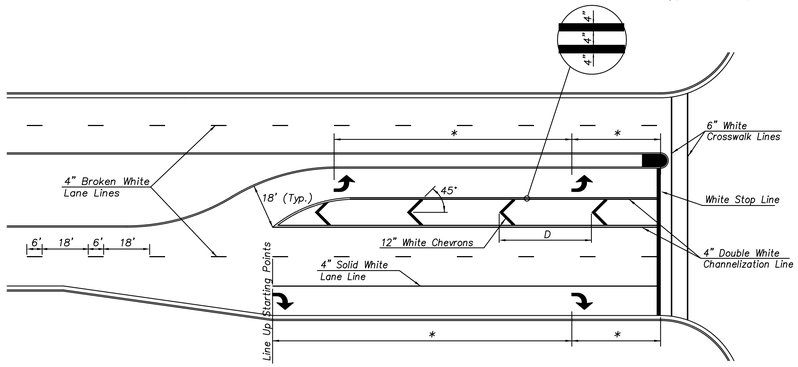



Typical Striped Left Turn Median Markings

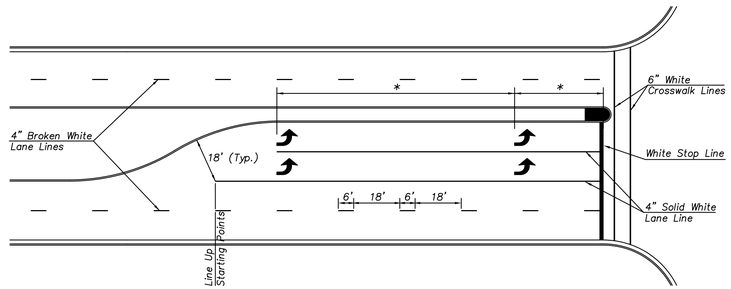
Stop Line Width (When Used):
1) 12" will be used at a location where a 30" Stop sign is required.
2) 24" will be used at a location where a 36" Stop sign is required.
3) 24" will be used at all controlled approaches to a traffic signal.




Typical Detail of Stop Line and Crosswalk Separation




Typical Left Turn Channelization Island Lane Markings




Typical Dual Left Turn Lane Markings

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

KANSAS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING DETAILS

SHEET 2 OF 5

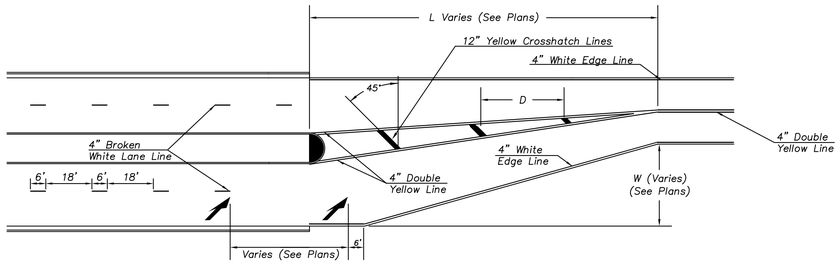
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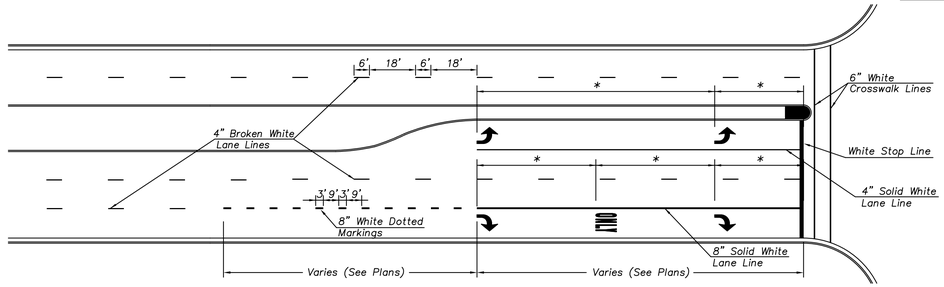
Drawn By : lrosenbaum

File : 13668T5702.dgn

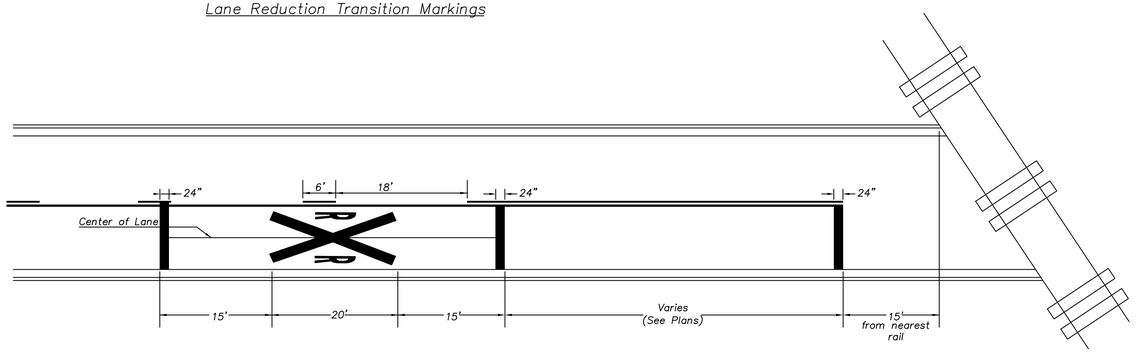
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 193 | 393 |




Lane Reduction Transition Markings

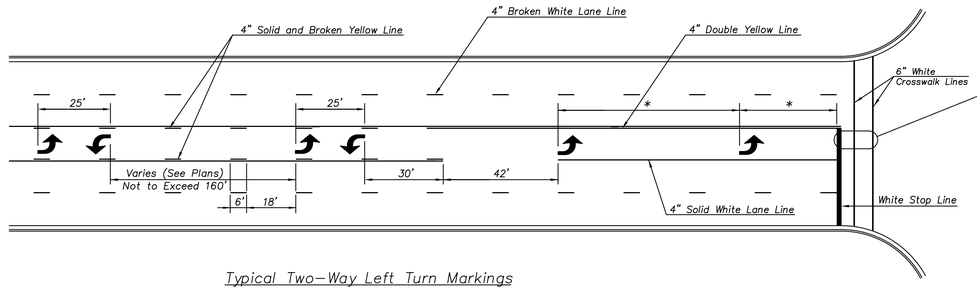



Trap Lane Drop Markings



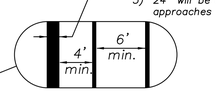

Grade Crossing Pavement Markings

Notes:
1) * Variable, see spacing schedule and/or plans for locations.
2) D= posted speed limit in feet (i.e. 25mph = 25' spacing) adjust in the field for a minimum of two.

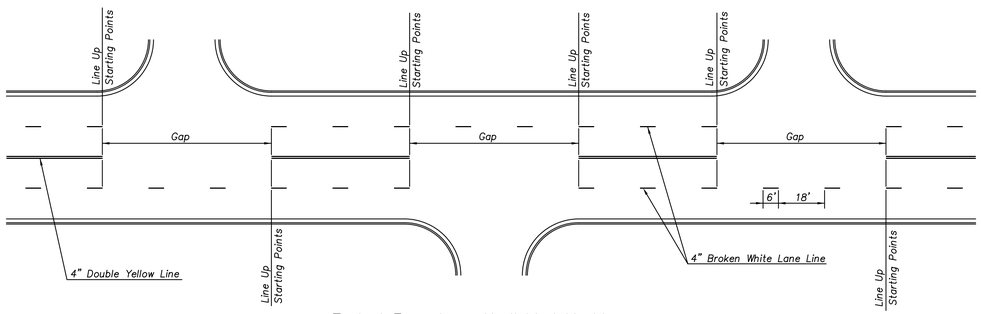



Typical Two–Way Left Turn Markings

Stop Line Width (When Used):
1) 12" will be used at a location where a 30" Stop sign is required.
2) 24" will be used at a location where a 36" Stop sign is required.
3) 24" will be used at all controlled approaches to a traffic signal.




Typical Detail of Stop Line and Crosswalk Separation




Typical Four–Lane Undivided Markings with Side Street Intersections

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

KANSAS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING DETAILS

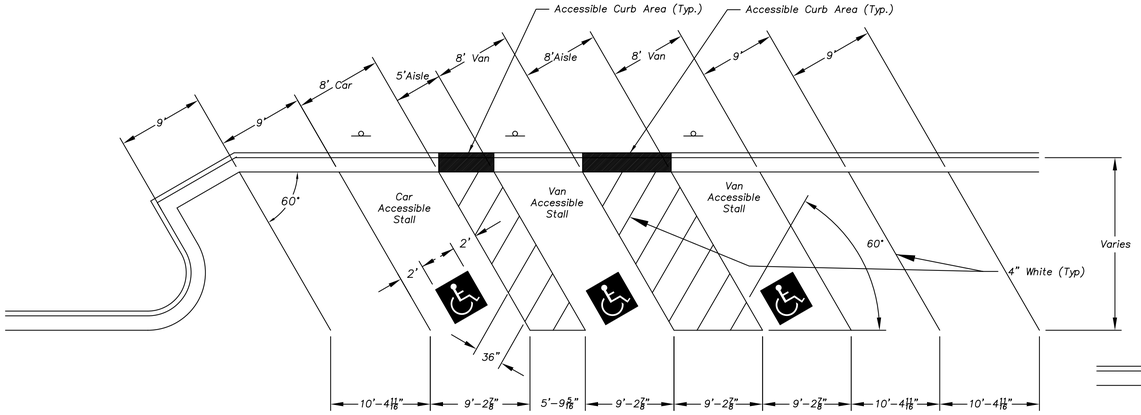
SHEET 3 OF 5

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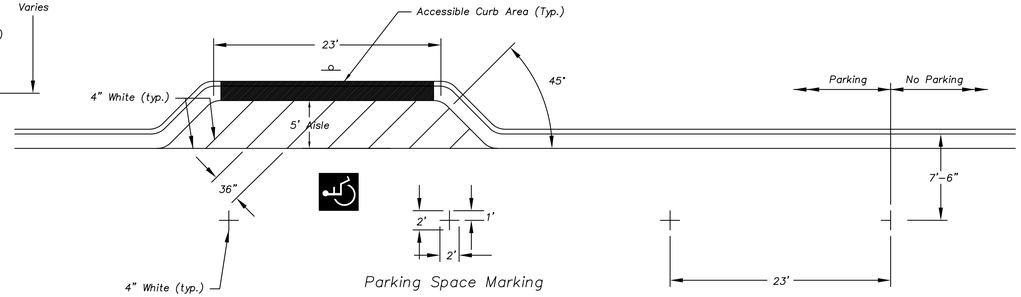
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| KANSAS | 46 N-0661-01 | 2019 | 194 | 393 |

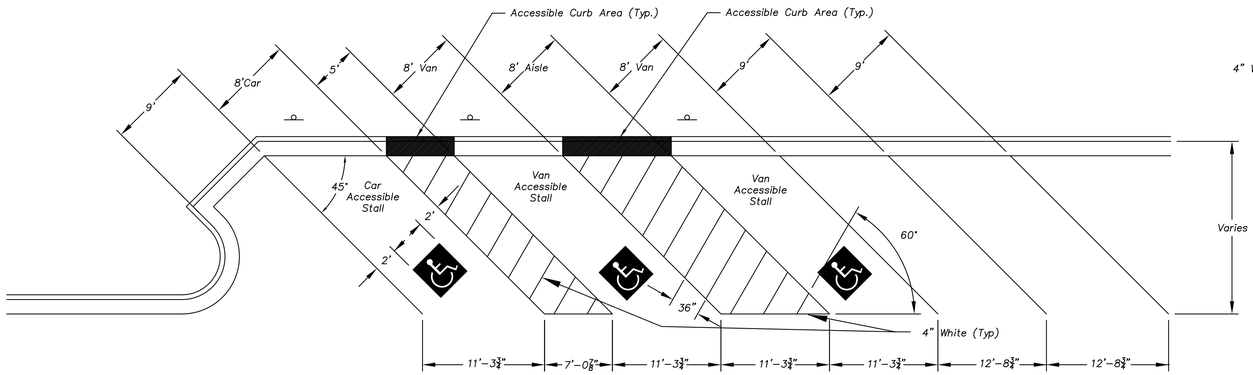



60 Degree Angle Parking




Parking Space Marking

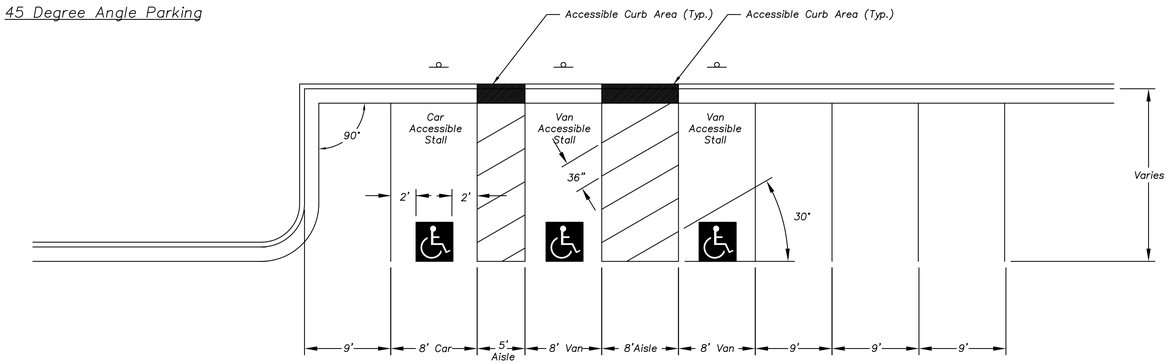
Parallel Parking




45 Degree Angle Parking




International Symbol of Accessibility (Typ.)




90 Degree Angle Parking

Accessible Parking Pavement Marking Details

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*KANSAS DEPARTMENT OF TRANSPORTATION*

PAVEMENT MARKING DETAILS

SHEET 4 OF 5

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

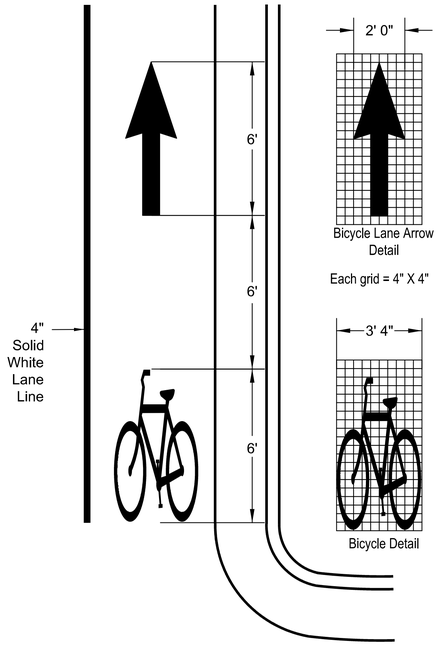
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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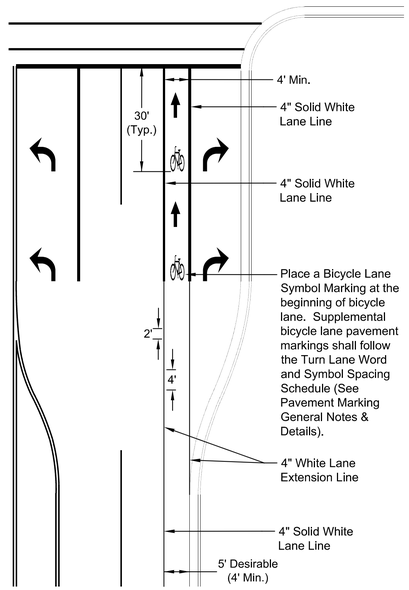
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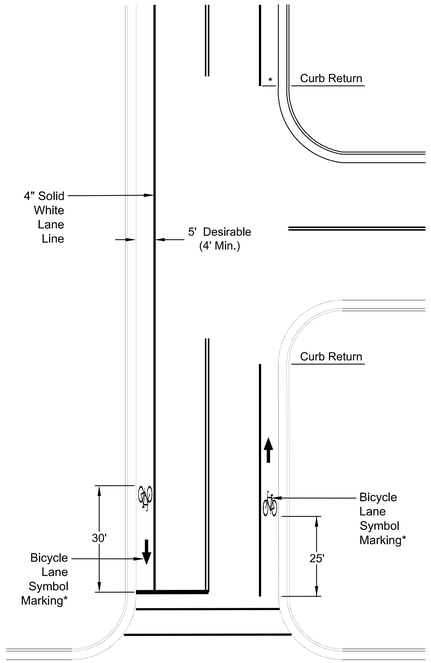

Bicycle Lane Symbol Marking Detail

## Bicycle Lane Marking Notes

1. Longitudinal pavement markings (4" Solid White Lane Line) shall be used to define bicycle lanes.
2. Bicycle lanes should not be provided on the circular roadway of a roundabout. Bicycle lane markings should stop at least 100 feet before the crosswalk, or if no crosswalk is provided, at least 100 feet before the yield line, or if no yield line is provided, then at least 100 feet before the edge of the circular roadway.
3. If used, Bicycle Lane Lane Symbol Markings should be placed at the beginning of a bicycle lane and at periodic intervals along the bicycle lane based on engineering judgement.
4. Bicycle Lane Symbol Markings shall include the Bicycle Lane Arrow and Bicycle Symbol.
5. Bicycle Lane Symbol Marking shall be placed centered in the bicycle lane, when possible. Care should be taken to avoid placing the Bicycle Lane Symbol marking in the gutter pan.
6. Bicycle Lane Symbol Markings are comprised of the Bicycle Symbol and one Bicycle Lane Arrow. Measurement will be made per each for each Bicycle Symbol and per each for each Bicycle Lane Arrow.

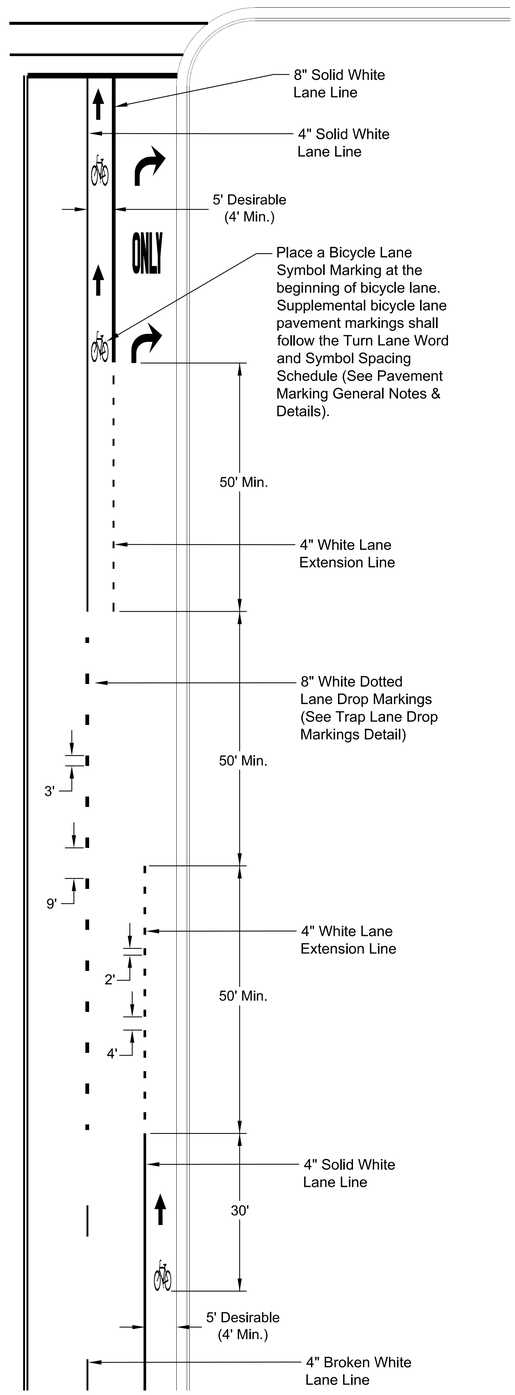



Typical Bicycle Lane Approaching Right-Turn Lane

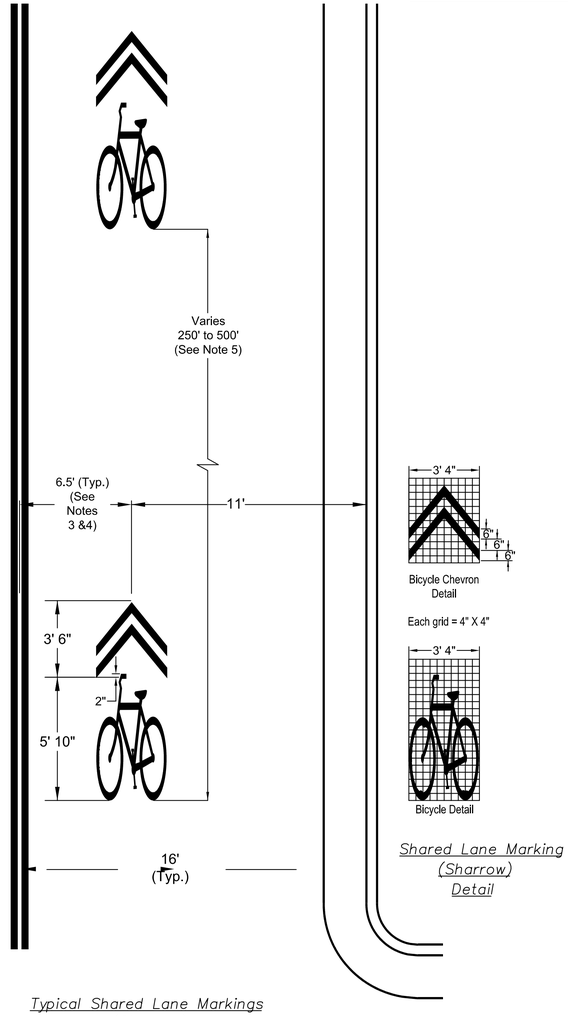



Typical Bicycle Lane Approaching Right-Turn Lane

*Bicycle Lane Symbol Markings are not required at every intersection but should be placed after each intersection with a thoroughfare or collector roadway. Supplemental Bicycle Lane Pavement Markings may also be placed in a visible location in a bicycle lane on the intersection approach (prior to the crosswalk). Install per engineering judgement.




Typical Bicycle Lane Approaching Trap Through Lane




Shared Lane Marking (Sharrow) Detail

Typical Shared Lane Markings (Sharrow)

## Shared Lane Marking Notes:

1. The Shared Lane Marking should not be placed on roadways that have a speed limit above 35 mph.
2. Shared Lane Markings shall not be used on shoulders or in designated bicycle lanes.
3. If used in a shared lane with on-street parallel parking, Shared Lane Markings should be placed so that the centers of the marking are at least 11 feet from the face of the curb, or from the edge of the pavement where there is no curb. When parking does not regularly occur, the sharrow marking should be placed such that the centers of the marking are at least 5'-2" from the face of the curb or edge of pavement when there is no curb.
4. If used, the Shared Lane Marking should be placed immediately after an intersection and per engineering judgement thereafter between 250 and 500 feet.
5. Shared Lane Marking (Sharrow) symbols are comprised of the Bicycle Symbol and two (2) Chevrons. Measurement will be per each for the Combined Bicycle Symbol and Chevrons.

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KANSAS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING DETAILS

SHEET 5 OF 5

Drawn By : lrosenbaum
File : 136681T5705.dgn
Plotted : 25-APR-2019 13:03

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 196 | 393 |

# SUMMARY OF PAVEMENT MARKINGS

| LOCATION | 4" Solid WHITE Edge Line | 6" Solid WHITE Edge Line | 4" Broken WHITE Lane Line | 6" Broken WHITE Lane Drop Line | 4" Dotted WHITE Extension Line | 4" Dotted YELLOW Extension Line | 4" Solid WHITE Lane Line | 8" Broken WHITE Lane Drop Line | 8" Solid WHITE Gore Line | 8" Dotted WHITE Extension Line | 12" Solid WHITE Diagonal Line | 12" Solid WHITE Chevron Line | 12" Solid WHITE Type I Crosswalk Line | 24" Solid WHITE Type II Crosswalk Line | 24" Solid WHITE Stop Line | 4" Solid YELLOW Edge Line | 4" Solid YELLOW Double Line | 4" Solid YELLOW Line | 4" Broken YELLOW Line | 6" Solid YELLOW Edge Line | 12" Solid YELLOW Diagonal Line |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W 55TH STREET | | | | | | | | | | | | | | | | | | | | | |
| Sta. 20+47 to 20+93 | | | | | | | 46' | | | | | | | | 23' | | 91' | | | | |
| Sta. 22+02 to 22+58 | | | | | | | 55' | | | | | | | | 23' | | 109' | | | | |
| W 51ST STREET | | | | | | | | | | | | | | | | | | | | | |
| Sta. 60+53 to 60+84 | | | | | | | 30' | | | | | | | | 24' | | 60' | | | | |
| W 50TH TERRACE | | | | | | | | | | | | | | | | | | | | | |
| Sta. 65+33 to 66+59 | | | | | | | 250' | | | | | | | | 33' | | 511' | | | | 37' |
| ROE LANE | | | | | | | | | | | | | | | | | | | | | |
| Sta. 70+56 to 72+37 | | | | | 33' | | 353' | | | | | | | | 27' | | 357' | | | | |
| W 48TH STREET | | | | | | | | | | | | | | | | | | | | | |
| Sta. 80+71 to 81+58 | | | | | | | 84' | | | | | | | | 22' | | 173' | | | | |
| SKYLINE DRIVE | | | | | | | | | | | | | | | | | | | | | |
| Sta. 75+34 to 76+47 | | | | | | | 112' | | | | | | | | 22' | | 223' | | | | |
| ROE BOULEVARD | | | | | | | | | | | | | | | | | | | | | |
| Sta. 100+91 to 116+61 | | 316' | 761' | | | | 712' | | | | | | | | 87' | | | 312' | 78' | | |
| Sta. 116+61 to 142+06 | | 531' | 1,116' | | | 32' | 746' | | | | | | | | 68' | | 825' | 639' | 160' | | |
| Sta. 142+06 to 145+93 | | 490' | 137' | | 62' | | 231' | | | | | | | | 88' | | | | | | |
| Sta. 145+93 to 157+06 | | 851' | 493' | | | | 864' | | | | | | | | 71' | | | | | | |
| Sta. 157+06 to 173+68 | | 976' | 762' | 32' | | | 754' | | | | | | | | 36' | | 19' | | | | |
| TOTALS | | 3,164' | 3,269' | 32' | 95' | 32' | 4,235' | | | | | | | | 523' | | 2,368' | 951' | 238' | | 37' |

# RECAPITULATION OF QUANTITIES

| ITEMS | TOTAL | UNITS |
|---|---|---|
| PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4") | 7,599 | FT |
| PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6") | 3,196 | FT |
| PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8") | | FT |
| PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12") | | FT |
| PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4") | 3,589 | FT |
| PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(6") | | FT |
| PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(12") | 37 | FT |
| | | |
| PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4") | | FT |
| PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(6") | | FT |
| PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(8") | | FT |
| PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(12") | | FT |
| PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4") | | FT |
| PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(6") | | FT |
| PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(12") | | FT |
| | | |
| PAVEMENT MARKING (EPOXY)(WHITE)(4") | | FT |
| PAVEMENT MARKING (EPOXY)(WHITE)(6") | | FT |
| PAVEMENT MARKING (EPOXY)(WHITE)(8") | | FT |
| PAVEMENT MARKING (EPOXY)(WHITE)(12") | | FT |
| PAVEMENT MARKING (EPOXY)(YELLOW)(4") | | FT |
| PAVEMENT MARKING (EPOXY)(YELLOW)(6") | | FT |
| PAVEMENT MARKING (EPOXY)(YELLOW)(12") | | FT |
| | | |
| PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(12") | | FT |
| PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(24") | 523 | FT |
| PAVEMENT MARKING (INTERSECTION GRADE)(YELLOW)(12") | | FT |
| PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(RIGHT TURN ARROW) | 17 | EACH |
| PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(LEFT TURN ARROW) | 58 | EACH |
| PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(BIKE LANE MARKING) | 1 | EACH |
| PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(THRU/RIGHT ARROW) | 3 | EACH |
| PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( ) | | EACH |
| PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(US-SHIELD)( ) | | EACH |
| PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(K-SHIELD)( ) | | EACH |
| PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(I-SHIELD)( ) | | EACH |
| | | |
| PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(6") | | FT |
| PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(8") | | FT |
| PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(12") | | FT |
| | | |
| PAVEMENT MARKING REMOVAL | | FT |

# SUMMARY OF WORD & SYMBOL MARKINGS

| LOCATION | ↱ | ↰ | ↑ | ↱ | ↰ | 🚲 | STOP | ONLY | X-ING | SCHOOL | 70 | 435 | 24 | 400 | 18 | ⤵ | ↰ | ⤵ | ↱ | ↗ | | ⇨ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W 55TH STREET | | | | | | | | | | | | | | | | | | | | | | | |
| Sta. 20+47 | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Sta. 22+02 | | | | | 1 | | | | | | | | | | | | | | | | | | |
| W 51ST STREET | | | | | | | | | | | | | | | | | | | | | | | |
| Sta. 60+53 | | | | | 1 | | | | | | | | | | | | | | | | | | |
| W 50TH TERRACE | | | | | | | | | | | | | | | | | | | | | | | |
| Sta. 65+33 | 3 | | | | 6 | | | | | | | | | | | | | | | | | | |
| ROE LANE | | | | | | | | | | | | | | | | | | | | | | | |
| Sta. 70+56 | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| W 48TH STREET | | | | | | | | | | | | | | | | | | | | | | | |
| Sta. 80+71 | | | | | 2 | | | | | | | | | | | | | | | | | | |
| SKYLINE DRIVE | | | | | | | | | | | | | | | | | | | | | | | |
| Sta. 75+34 | | | | | 3 | | | | | | | | | | | | | | | | | | |
| ROE BOULEVARD | | | | | | | | | | | | | | | | | | | | | | | |
| Sta. 100+91 | | | | 5 | 11 | | | | | | | | | | | | | | | | | | |
| Sta. 116+61 | | | | 1 | 20 | | | | | | | | | | | | | | | | | | |
| Sta. 142+06 | | | | | 5 | | | | | | | | | | | | | | | | | | |
| Sta. 145+93 | | | | 10 | 6 | | | | | | | | | | | | | | | | | | |
| Sta. 157+06 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | |
| TOTALS | 3 | | | 17 | 58 | 1 | | | | | | | | | | | | | | | | | |

NOTE:
WORDS & SYMBOLS SHALL CONFORM TO THE LATEST EDITION OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" PRINTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

PRIOR TO COMMENCEMENT OF PAVEMENT MARKING WORK THE ENGINEER WILL ESTABLISH THE LIMITS FOR "NO PASSING" ZONES. THESE LIMITS SHALL BE USED FOR THE LOCATION OF "NO PASSING" LINES AND FOR THE COMPUTATION OF ACTUAL MARKING QUANTITIES FOR THIS LINE TYPE.

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 2 | 5/25/12 | Added Line Types, Symbols, and Shields | B.A.H. | B.D.G. |
| 1 | 7/26/05 | New FHWA Approval Date | J.F.F. | B.D.G. |

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY AND RECAPITULATION OF PAVEMENT MARKING QUANTITIES

~~TE31~~

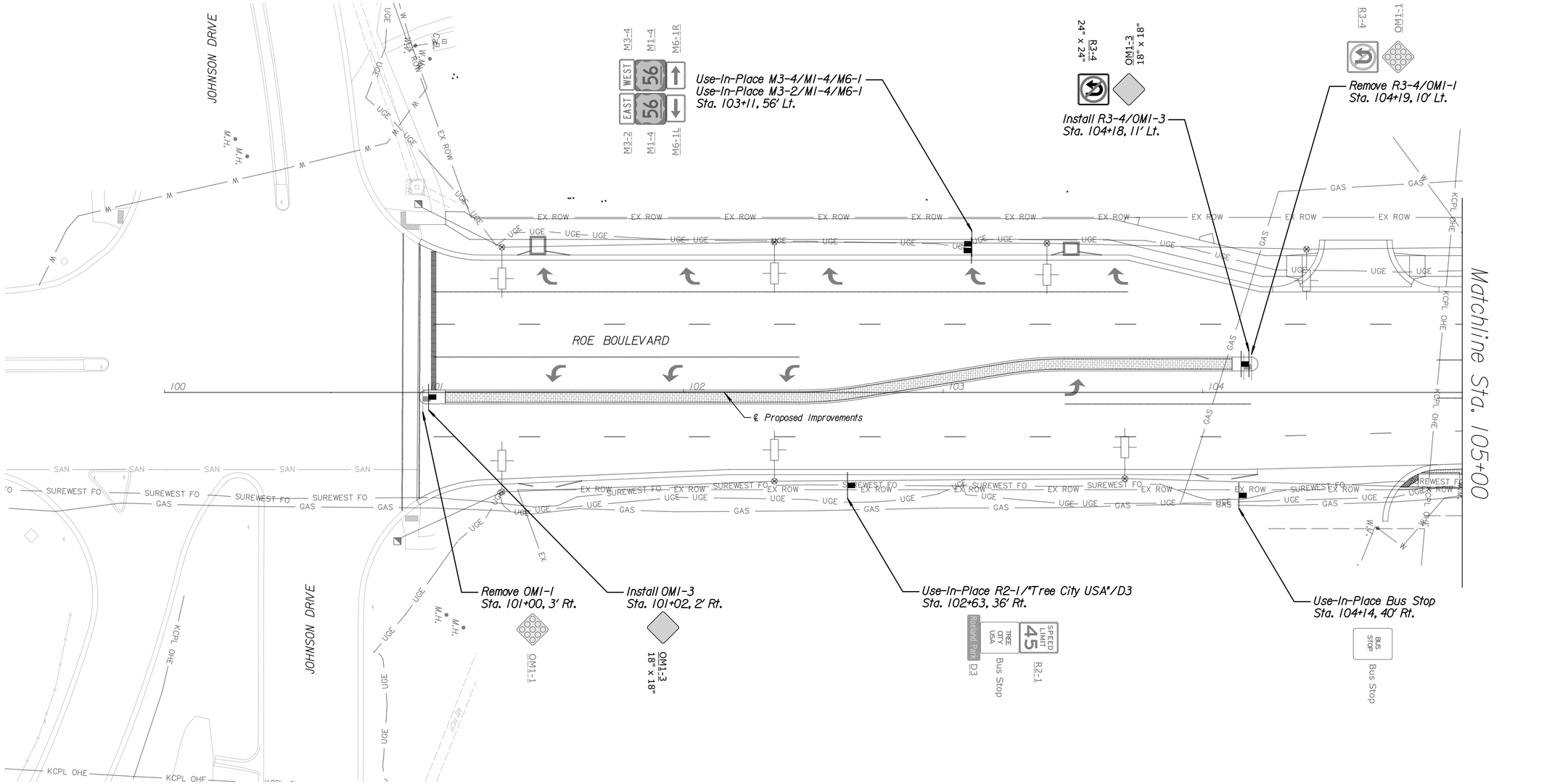
| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 5/25/2012 | APP'D | Brian D. Gower | |
| DESIGNED | J.F.F. | DETAILED | J.F.F. | QUANTITIES | TRACED |
| DESIGN CK. | B.D.G. | DETAIL CK. | B.D.G. | QUAN. CK. | TRACE CK. |

Plotted : 25-APR-2019 13:03
Drawn By : lrosenbaum
File : te311a.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 197 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 100+00 TO STA. 105+00

Plotted :25-APR-2019 13:03
Drawn By : lrosenbaum
File : 13668T5231.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 198 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:03
Drawn By: : Irosenbaum
File : 136687S232.dgn

Use-In-Place D3/D3/RI-2
Sta. 5+86, 14' Rt. (Linden)

Use-In-Place D3/D3/RI-1
Sta. 1+38, 11' Lt.

Use-In-Place RI-1
Sta. 1+37, 22' Rt.

Remove R2-1
Sta. 5+47, 13' Lt. (Linden)

Install R2-1
Sta. 5+47, 19' Lt. (Linden)

Remove R5-1
Sta. 107+45, 42' Lt.

Install W6-2/W6-1/OM1-3
Sta. 107+34, 7' Lt.

Remove W6-2/W6-1/OM1-3
Sta. 107+24, 7' Lt.

Install R2-1/R8-3
Sta. 108+45, 30' Rt.

Remove R2-1
Sta. 108+57, 36' Rt.

Remove R8-3a
Sta. 109+30, 36' Rt.

℄ Proposed Improvements

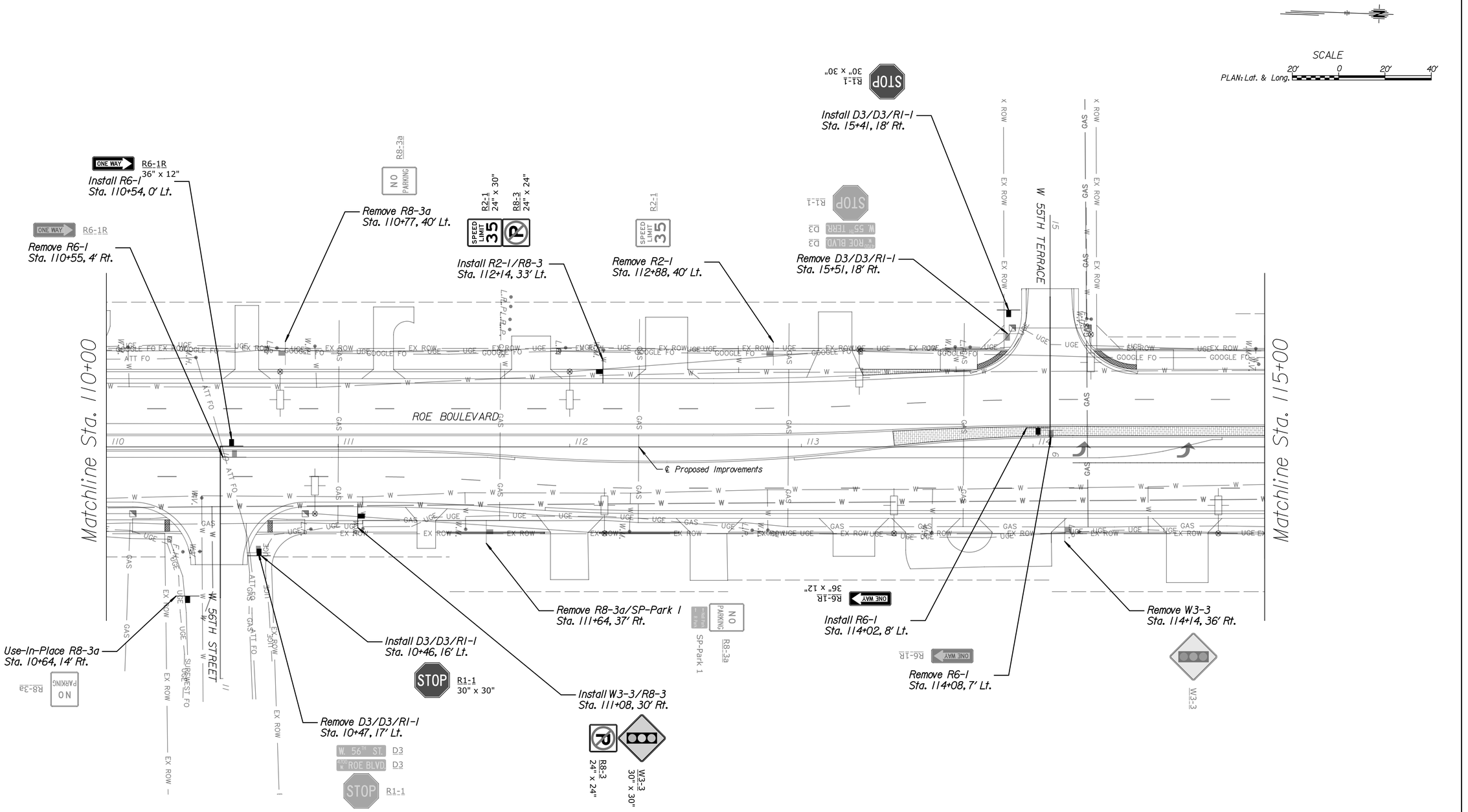
Matchline Sta. 105+00

Matchline Sta. 110+00

KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 105+00 TO STA. 110+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 199 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.




| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:03
Drawn By : lrosenbaum
File : 136681T5233.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 110+00 TO STA. 115+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 200 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

SPEED LIMIT 25 R2-1
R5-2
R8-3 24" x 24"

Use-In-Place R2-1/R5-2
Install R8-3
Sta. 20+57, 23' Lt.

Remove R8-3a
Mounted on Luminaire Pole
Sta. 20+89, 23' Lt.

NO PARKING R8-3a

Remove R1-1 (Folding)/SP-Park 2
Relocate Bus Stop
Mounted on Utility Pole
From Sta. 117+46, 41' Lt.
To Sta. 117+53, 45' Lt.

Bus Stop
BUS STOP
R1-1
STOP
SP-Park 2

Install Relocated Bus Stop
Sta. 117+53, 45' Lt.

Bus Stop
BUS STOP

W6-1 OM1-3

OM1-3 18" x 18"

Install OM1-3
Sta. 116+64, 7' Lt.

Remove W6-1/OM1-3
Sta. 116+62, 7' Lt.

Matchline Sta. 115+00

ROE BOULEVARD

W 557TH STREET

℄ Proposed Improvements

Remove R8-3a
Sta. 115+04, 36' Rt.

NO PARKING R8-3a

Relocate Bus Stop
From Sta. 116+58, 37' Rt.
To Sta. 116+61, 42' Rt.

BUS STOP Bus Stop

Install Relocated Bus Stop
Sta. 116+61, 42' Rt.

BUS STOP Bus Stop

Remove R1-1 (Folding)
Mounted on Pedestal Pole
Sta. 116+75, 38' Rt.

STOP R1-1

W 55TH STREET

Remove OM1-1
Sta. 117+48, 3' Rt.

OM1-1

Remove R1-1 (Folding)
Mounted on Pedestal Pole
Sta. 22+11, 24' Lt.

STOP R1-1

Install OM1-3
Sta. 117+50, 4' Rt.

OM1-3 18" x 18"

Remove R8-3a
Sta. 119+91, 37' Rt.

NO PARKING R8-3a

Matchline Sta. 120+00

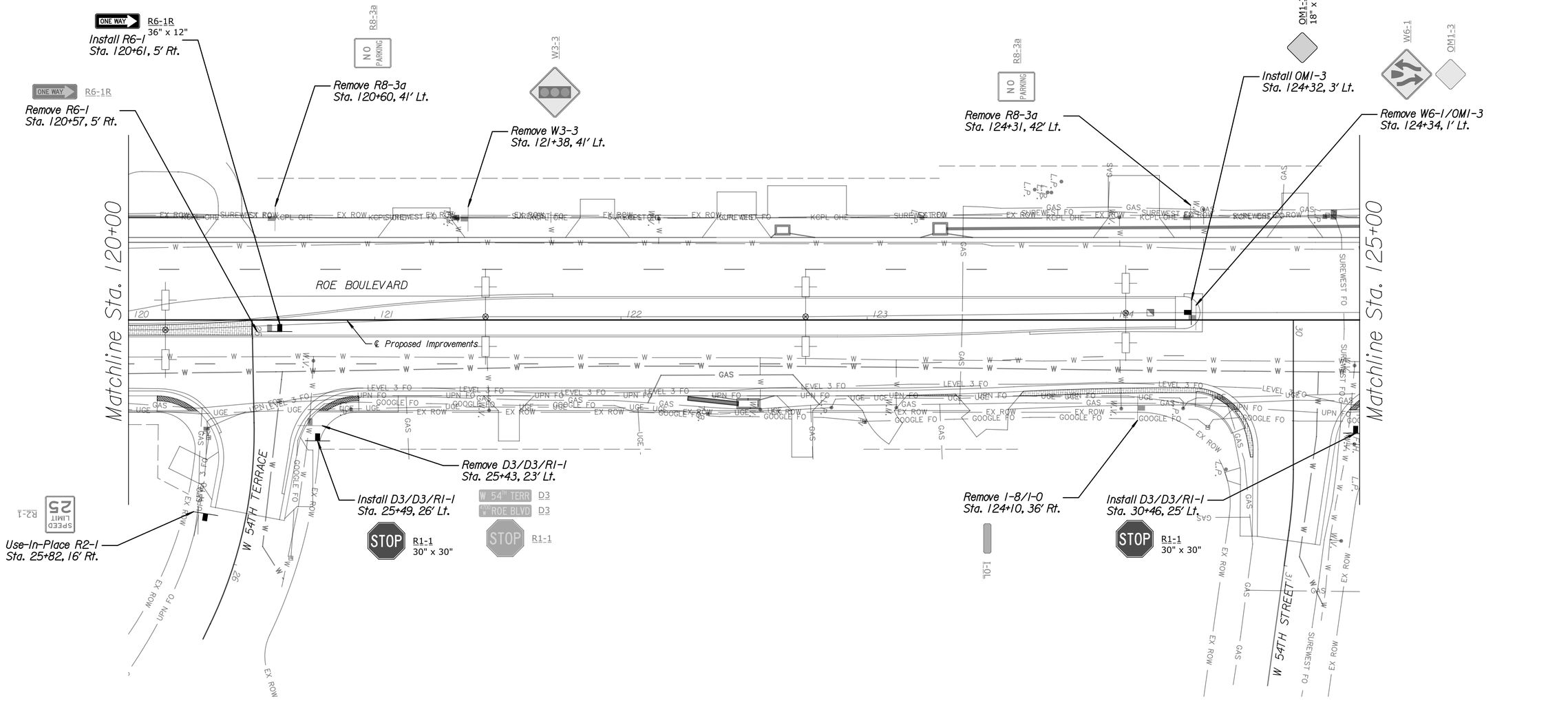
KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 115+00 TO STA. 120+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:03
Drawn By : lrosenbaum
File : 1366815234.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 201 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.




| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:03
Drawn By: : lrosenbaum
File : 136681235.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 120+00 TO STA. 125+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 202 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:03
Drawn By: Irosenbaum
File: 136681S236.dgn

Matchline Sta. 125+00

Matchline Sta. 130+00

ROSEWOOD DRIVE

W 53RD TERRACE

℄ Proposed Improvements

ROE BOULEVARD

Remove W6-1/OM1-3
Sta. 125+19, 3' Rt.

Install OM1-3
Sta. 125+15, 3' Lt.

Remove R1-1
Sta. 125+76, 50' Lt.

Install W3-3/R8-3
Sta. 125+82, 52' Lt.

Remove R1-1
Sta. 126+38, 46' Lt.

Remove R5-1
Sta. 125+97, 58' Lt.

Install W11-2/W16-7pL
Sta. 126+46, 55' Lt.

Remove D3/D3/R1-1
Sta. 36+99, 12' Rt.

Install D3/D3/R1-1
Sta. 36+93, 22' Rt.

Remove R5-2
Sta. 36+95, 20' Lt.

Install R5-2
Sta. 36+97, 25' Lt.

Relocate Bus Stop
From Sta. 127+64, 40' Lt.
To Sta. 127+80, 31' Lt.

Install Relocated Bus Stop/R8-3
Sta. 127+80, 31' Lt.

Remove I-8/I-0
Sta. 128+24, 42' Lt.

Remove R8-3a
Sta. 129+34, 41' Lt.

Remove D3/D3/R1-1
Sta. 30+46, 29' Lt.

Install R2-1/R8-3
Sta. 125+24, 38' Rt.

Remove R2-1
Sta. 125+36, 37' Rt.

Install W11-2/W16-7pL
Sta. 126+07, 38' Rt.

Remove OM1-3
Sta. 126+74, 7' Rt.

Install R4-7/OM1-3
Sta. 126+72, 6' Lt.

Install Relocated Bus Stop
Sta. 126+87, 39' Rt.

Relocate Bus Stop
From Sta. 126+87, 39' Rt.
To Sta. 126+89, 36' Rt.

Use-In-Place R2-1
Sta. 40+94, 15' Rt.

Remove R8-3a
Sta. 127+80, 37' Rt.

Install OM1-3
Sta. 127+61, 2' Lt.

Remove OM1-1
Sta. 127+76, 3' Rt.

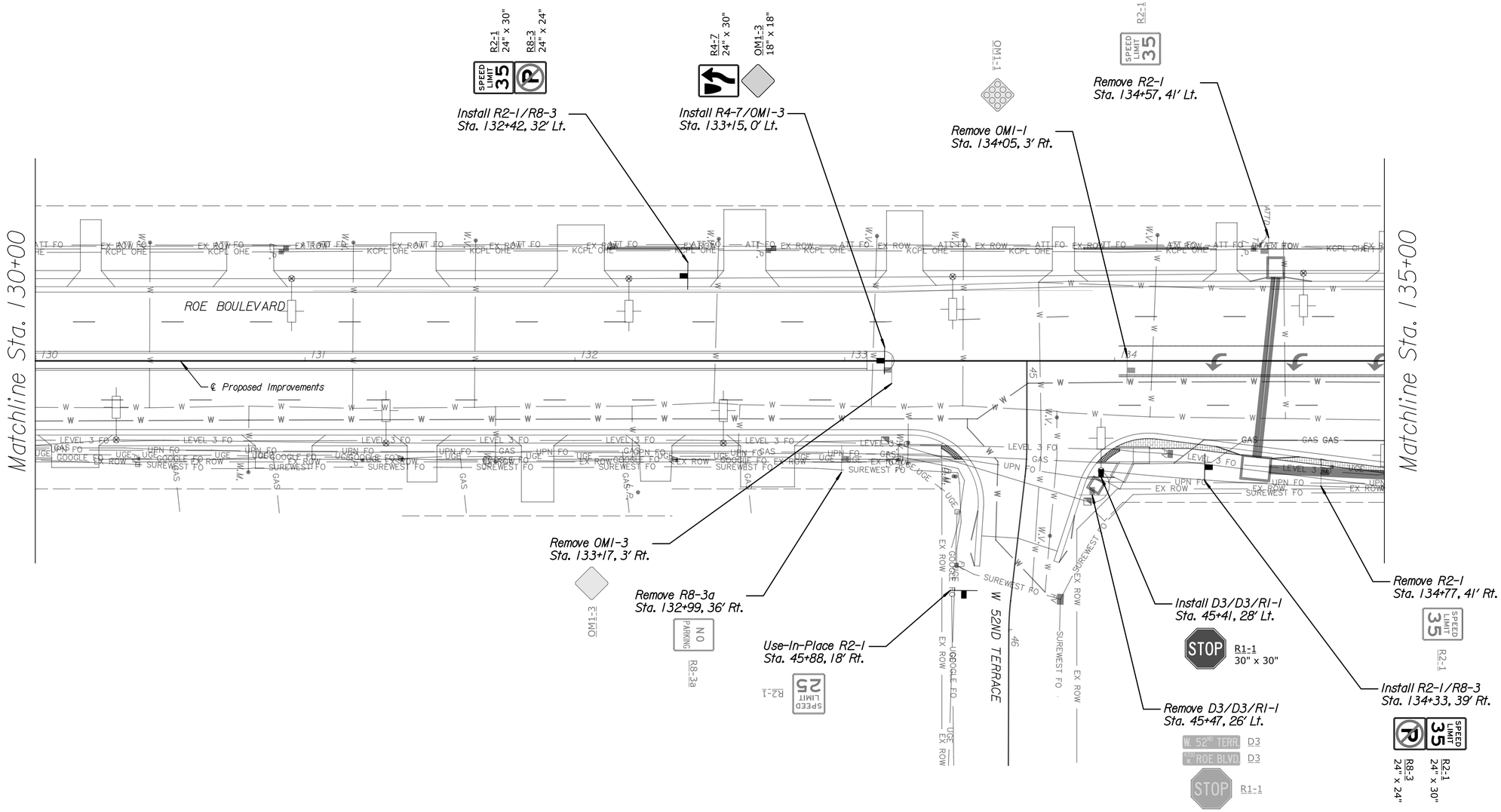
Remove D3/D3/R1-1
Sta. 40+47, 27' Lt.

Install D3/D3/R1-1
Sta. 40+43, 18' Lt.

KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 125+00 TO STA. 130+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 203 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.




KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 130+00 TO STA. 135+00

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

Plotted : 25-APR-2019 13:03
Drawn By : lrosenbaum
File : 136681T5237.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 204 | 393 |

SCALE
PLAN: Lat. & Long.
20' 0 20' 40'

Remove Truck Entrance Sign
Sta. 136+52, 47' Lt.

Remove R8-3a
Sta. 136+05, 40' Lt.

Remove W6-1/OM1-3
Sta. 137+27, 7' Lt.

Remove R1-1
Sta. 138+48, 61' Lt.

Remove OM1-1
Sta. 138+32, 7' Lt.

Remove W6-1/OM1-1
Sta. 139+39, 3' Rt.

Remove W6-1/OM1-3
Mounted on Signal Pole
Sta. 136+40, 1' Rt.

Use-In-Place D3/D3/R1-1
Sta. 55+50, 20' Lt.

Remove SP-City Hall 1
Sta. 139+92, 32' Rt.

℄ Proposed Improvements

W 52ND STREET

ROE BOULEVARD

SYCAMORE DRIVE

Matchline Sta. 135+00

Matchline Sta. 140+00

R8-3a NO PARKING

OM1-3 W6-1

R1-1 STOP

OM1-1

OM1-1 W6-1

W6-1 OM1-3

Roe Blvd D3
Sycamore Dr D3
STOP R1-1

SP-City Hall 1

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:03

Drawn By: : lrosenbaum
File : 136681238.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 135+00 TO STA. 140+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 205 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

Matchline Sta. 140+00

Matchline Sta. 145+00

ROE BOULEVARD

W 51ST STREET

℄ Proposed Improvements

Install Relocated Bus Stop
Sta. 141+42, 33' Lt.

Relocate Bus Stop
From Sta. 141+37, 38' Lt.
To Sta. 141+42, 33' Lt.

Remove OM1-1
Sta. 142+06, 7' Lt.

Remove R1-1 (Folding)
Sta. 142+20, 53' Lt.

Use-In-Place R5-2
Sta. 142+48, 67' Lt.

Remove R1-1 (Folding)
Sta. 143+01, 50' Lt.

Install Relocated R5-2SP
Sta. 143+01, 36' Lt.

Remove R3-7/Relocate R5-2SP
From Sta. 143+30, 50' Lt.
To Sta. 143+01, 36' Lt.

Remove D9-11b/I-0
Mounted on Signal Pole
Sta. 143+13, 1' Rt.

Remove R2-1
Sta. 144+94, 51' Lt.

Install R2-1
Sta. 144+94, 38' Lt.
R2-1
24" x 30"

Remove R2-1
Sta. 141+38, 32' Rt.

Relocate Bus Stop
From Sta. 141+83, 31' Rt.
To Sta. 141+91, 38' Rt.

Install Relocated Bus Stop
Sta. 141+91, 38' Rt.

Remove R1-1 (Folding)
Mounted to Pedestal Pole
Sta. 141+95, 33' Rt.

Remove D3/D3
Sta. 60+50, 37' Rt.

Remove R1-1 (Folding)
Mounted to Pedestal Pole
Sta. 60+55, 21' Lt.

Remove OM1-1
Sta. 143+03, 3' Rt.

Install OM1-3
Sta. 143+05, 6' Rt.
OM1-3
18" x 18"

W 51ST ST D3
W ROE BLVD D3

KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 140+00 TO STA. 145+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:03
Drawn By : lrosenbaum
File : 136681T5239.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 206 | 393 |

SCALE
PLAN: Lat. & Long.
20' 0 20' 40'

Use-In-Place R14-2/M6-4
Sta. 66+25, 34' Rt.

Remove R1-1 (Folding)
Sta. 66+47, 33' Rt.

Remove OM1-1
Sta. 145+83, 9' Lt.

Install OM1-3
Sta. 145+78, 6' Lt.

Remove SP-Center 2/SP-Park 5
Sta. 145+58, 46' Rt.

Remove R1-1 (Folding)
Sta. 145+84, 46' Rt.

Remove R1-1 (Folding)/SP-Center 1
Sta. 147+00, 63' Lt.

Remove R3-7/SP-City Hall 2/
SP-Park 5
Sta. 147+00, 59' Lt.

Remove D9-11b/I-0
Sta. 148+77, 54' Lt.

℄ Proposed Improvements

Install R2-1/R8-3
Sta. 148+60, 37' Rt.

Remove OM1-1
Sta. 146+84, 2' Rt.

Remove R2-1
Sta. 148+60, 40' Rt.

Install OM1-3
Sta. 146+83, 0' Rt.

Remove R1-1 (Folding)
Sta. 70+58, 41' Lt.

Remove SP-Park 4
Mounted to Luminaire Pole
Sta. 71+52, 34' Lt.

50TH TERRACE

ROE BOULEVARD

ROE LANE

Matchline Sta. 145+00

Matchline Sta. 150+00

OM1-3
18" x 18"

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |

Plotted :25-APR-2019 13:04

Drawn By : lrosenbaum
File : 13668T5240.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 145+00 TO STA. 150+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 207 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:04
Drawn By : lrosenbaum
File : 13668T5241.dgn

Matchline Sta. 150+00

Matchline Sta. 155+00

ROE BOULEVARD

℄ Proposed Improvements

Install R3-2
Sta. 152+55, 50' Lt.

R3-2
24" x 24"

Remove R1-1 (Folding)
Sta. 152+13, 70' Lt.

R1-1

Install R6-1
Sta. 152+18, 13' Lt.

R6-1R
36" x 12"

Remove R1-1 (Folding)
Sta. 153+20, 63' Lt.

Remove R3-7
Sta. 153+58, 53' Lt.

Remove OM1-1
Sta. 151+99, 10' Lt.

OM1-1

Remove R1-1 (Folding)
Sta. 151+86, 44' Rt.

Install OM1-3
Sta. 152+38, 3' Lt.

OM1-3
18" x 18"

Install R3-2
Sta. 152+66, 49' Rt.

R3-2
24" x 24"

Install OM1-3
Sta. 152+64, 5' Rt.

OM1-3
18" x 18"

Remove R1-1 (Folding)
Sta. 152+96, 56' Rt.

Install R6-1
Sta. 152+97, 6' Rt.

R6-1R
36" x 12"

Remove OM1-3
Sta. 153+25, 1' Rt.

OM1-3

Relocate Bus Stop
Mounted on Luminaire Pole
From Sta. 154+82, 50' Rt.
To Sta. 154+74, 45' Rt.

Bus Stop

Install Relocated Bus Stop
Sta. 154+74, 45' Rt.

Bus Stop

KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 150+00 TO STA. 155+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 208 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.

Relocate Bus Stop
From Sta. 155+92, 54' Lt.
To Sta. 155+92, 50' Lt.

Bus Stop

Install Relocated Bus Stop
Sta. 155+92, 50' Lt.

Bus Stop

R3-7R

Remove R3-7
Sta. 155+36, 53' Lt.

Install OM1-3
Sta. 157+04, 8' Lt.

OM1-3
18" x 18"

Remove OM1-1
Sta. 157+00, 9' Lt.

OM1-1

Remove R1-1 (Folding)
Sta. 76+43.17' Rt.

R1-1

SKYLINE DRIVE

Remove R1-1 (Folding)
Sta. 158+52, 58' Lt.

R1-1

Matchline Sta. 155+00

Matchline Sta. 160+00

℄ Proposed Improvements

ROE BOULEVARD

W 48TH STREET

Remove R3-7
Sta. 155+50, 1' Lt.

R3-7L

Remove R1-1 (Folding)
Sta. 157+02, 42' Rt.

R1-1

Remove R1-1 (Folding)/SP-Park 2
Sta. 77+25.00' Lt.

R1-1

SP-Park 1

Install OM1-3
Sta. 158+50, 1' Rt.

OM1-3
18" x 18"

Remove OM1-1
Sta. 158+53, 2' Rt.

OM1-1

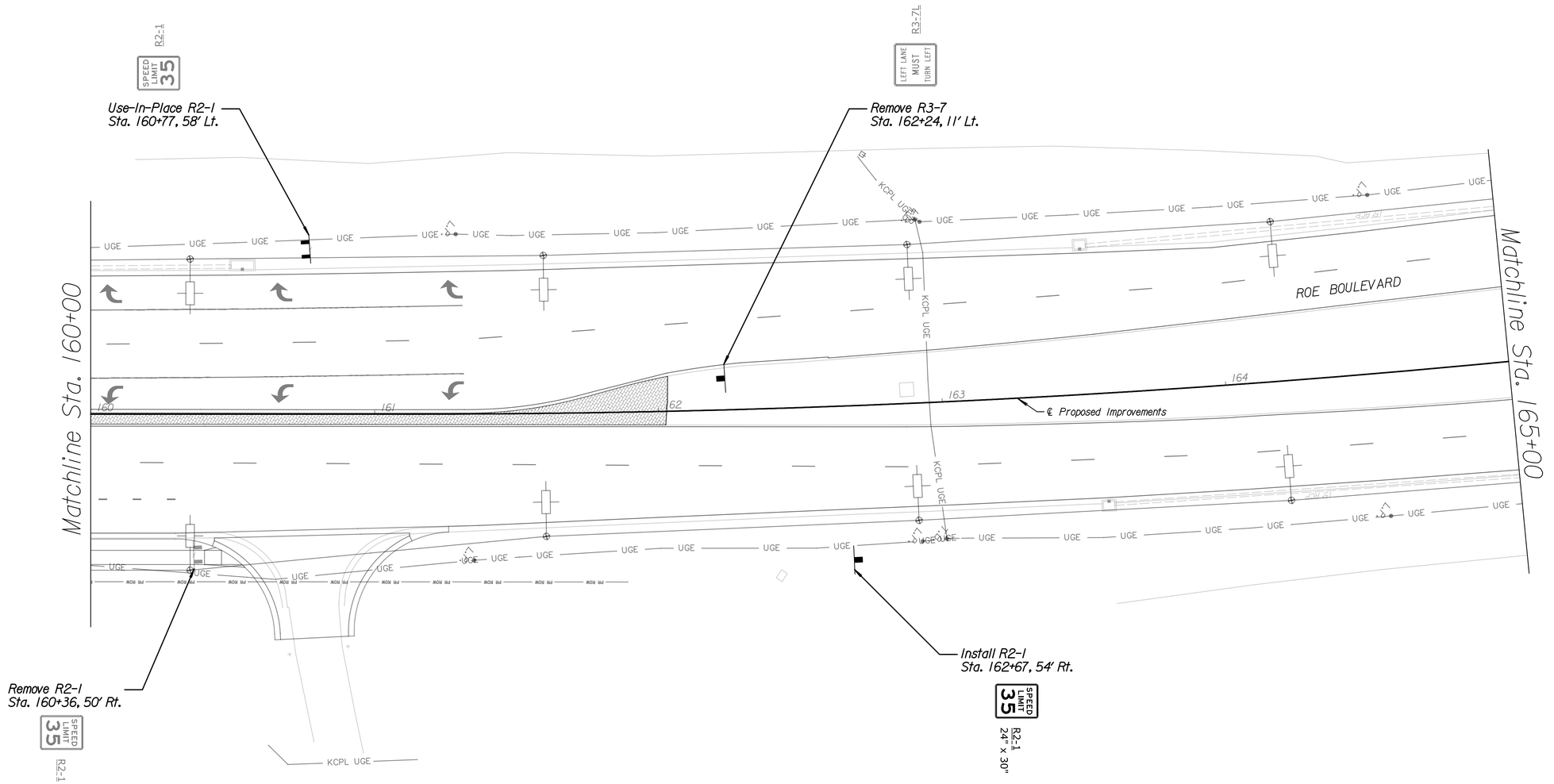
KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 155+00 TO STA. 160+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:04
Drawn By : lrosenbaum
File : 13668T5242.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 209 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.



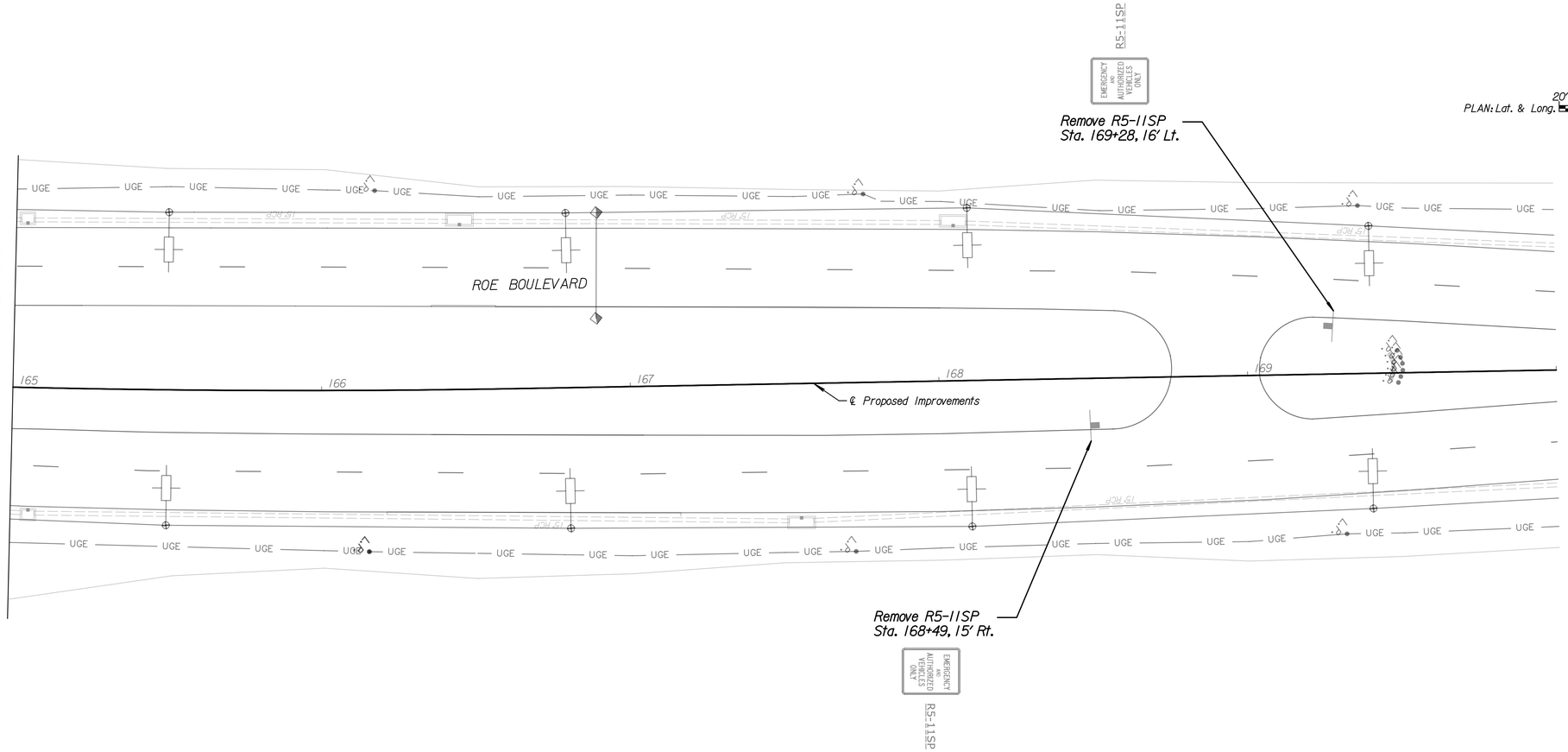

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:04
Drawn By : lrosenbaum
File : 13668T5243.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
SIGNING PLAN
ROE BOULEVARD
STA. 160+00 TO STA. 165+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 210 | 393 |

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.




| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

Drawn By : lrosenbaum
File : 136681T5244.dgn
Plotted : 25-APR-2019 13:04

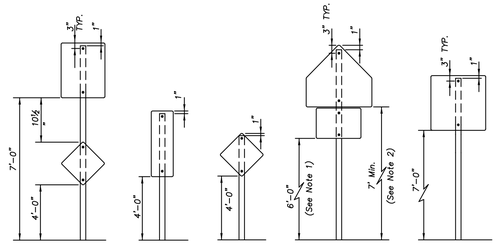
*KANSAS DEPARTMENT OF TRANSPORTATION*

SIGNING PLAN
ROE BOULEVARD
STA. 165+00 TO STA. 170+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 211 | 393 |

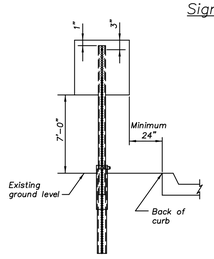
## Permanent Signing General Notes

1. All permanent signing shall be provided and installed by the contractor as indicated in the plans and specifications, and according to the City of Overland Park Standard Details.
2. All letter, number and symbol sizes, spacing and sign colors shall conform to the current Manual on Uniform Traffic Control Devices (MUTCD).
3. All school signing shall have a fluorescent yellow–green background with a black legend and border. All other warning signs shall have a standard yellow background.
4. The locations of existing utilities, if shown, are approximate only and have not been independently verified. The Contractor shall be responsible for contacting all utility companies for locations of all underground lines prior to excavation and be fully responsible for any and all damages, which might occur as a result of the Contractors failure to exactly locate and preserve any and all underground utilities.
5. The City of Overland Park is on the KS One Call System. The Contractor shall call 811 to obtain locates for streetlighting, traffic signal, and fiber optic conduits/cables.
6. All new signs shall be located within public right–of–way.
7. All retro–reflective micro–encapsulated prismatic sheeting shall be ASTM Type XI. All signs shall be made from a combination retro–reflective sheeting background with electronic cuttable film applied to the surface. (Unless otherwise indicated in the plans or specifications). Process color inks or silk screening signs are not allowed.
8. All sign blank material shall be made of 0.08" aluminum except all overhead street name signs shall be made of 0.125" aluminum.
9. Existing street name signs in the way of construction:
   The street name signs shall be relocated out of the way of construction but in a conspicuous location for the driving public and emergency providers. The street name signs shall be reinstalled in their proper location as soon as possible unless otherwise indicated. The removal and re–installation of existing signs will be considered subsidiary to other bid items.
10. Signs shown to be installed on the side of poles shall be mounted by stainless steel mounting bands as detailed in the plans. All R10 series signs installed on a traffic signal mast arm shall be mounted with cable mounting brackets as specified.
11. All post mounted signs shall be mounted on break–away sign posts according to the standard details.
12. All signs and posts shown in the plans shall be new unless otherwise indicated in the plans or by the Traffic Service Inspector.
13. All existing regulatory signs, warning signs, and street name signs will be used in place during construction and protected from damage unless otherwise indicated in the plans. If the contractor damages any existing sign or posts during construction, he shall be required to reinstall new signs and posts of the same type to replace the damaged equipment.
14. Any existing permanent signs shown to be removed by the contractor for construction purposes other than stop signs, yield signs or street name signs shall be salvaged. See Instructions for Disassembly and Return of Traffic Sign Equipment.
15. All stop, yield, warning signs, and street name signs shall be maintained in a conspicuous location for the driving public. All stop and yield signs removed for construction purposes can be temporarily erected (no less than 7 feet vertical from grade) until they can be permanently re–installed. Any temporary stop or yield sign installation to be left in place overnight will require prior approval from the Traffic Services Inspector.
16. All existing signs, other than stop, yield, warning signs, or street name signs, shown to be used in place shall be protected from damage by the contractor. The contractor may temporarily remove the sign and post to prevent damage at the approval of the inspector. Storage of the signs & posts is the responsibility of the contractor.
17. All sign posts installed in concrete, asphalt or brick paver islands or medians shall have a 6" PVC sleeve or 6" core drilled hole completely through the full depth of pavement to the top of subgrade. See Median Nose Details
18. The contractor shall be required to install inventory stickers on the back of all signs installed on the project and record each respective bar code number on the plan sheet adjacent to the corresponding sign, for delivery to the project inspector. Inventory stickers will be provided by the City.
19. Minor adjustments in the location of sign posts should be made in the field during construction in order to maintain 4'–0" clearance from the centerline of any fire hydrant to the face of the sign post.
20. In the event of utility conflicts with sign post locations and the sign post cannot be relocated, the contractor shall be required to hand dig the sign post and backfill with concrete to provide a sturdy post installation. The cost shall be subsidiary to other sign bid items.




Typical Mounting for R4–7 W/OM1–3 | Typical OM3 Mounting | Typical OM1–3 & OM4–3 Mounting | Typical Mounting for Primary & Supplemental Plaques | Typical Mounting for Primary Signs

## Sign Mounting Details




Traffic Sign Installation Detail

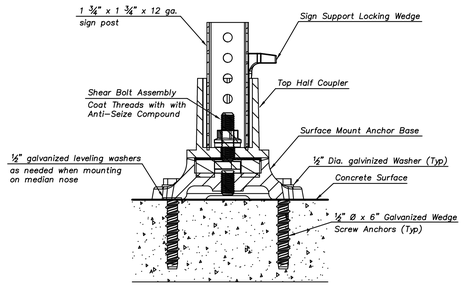
Notes:
1. The height to the bottom of a supplemental plaque mounted below another sign when it is located in a pedestrian walkway, or extends more than 4" into a pedestrian walkway, shall be a minimum of 80" in compliance with the Americans with Disability Act (ADA).
2. If the supplemental plaque is less than 12" high, the height to the bottom of the primary sign should be a minimum of 7'–0".

## Instructions for Disassembly and Return of Traffic Sign Equipment

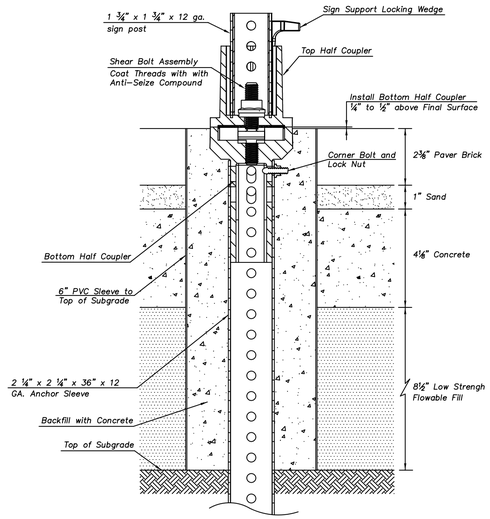
The following is a list of permanent signing equipment which shall be salvaged and returned to the City of Overland Park, unless otherwise instructed by the inspector. The condition at the time of delivery shall be the same as prior to removal. Disassembly of equipment shall be done prior to to returning the equipment to the Blue Valley Public Works Maintenance Facility (Traffic Services Maintenance Office and Shop) 6869 W. 153rd Street. The contractor shall notify the City of Overland Park Department of Public Works, Marvin Furgison (913) 327–6603 to arrange for the delivery of the salvaged equipment. Provide 48–hours advance notice.

The City maintains the first right of refusal of any equipment listed. The project inspector will make an on–site assessment to determine if the equipment should be salvaged or disposed. Any equipment that will not be salvaged shall become the property of the contractor.

1. All traffic signs shall be removed from sign posts, signal poles or street light poles and be salvaged.
2. All Astro–Brackets shall be removed from the tubular support. Do not cut the Astro–Bracket cable.
3. All traffic sign posts, shall be removed and salvaged unless bent. If the sign post or pole was mounted in concrete, the post or pole shall be discarded upon removal.
4. Any hardware (i.e. bolts, bandit material, etc.) involved in mounting the sign must be discarded.
5. All flashing beacon assemblies shall be salvaged, including solar panels, poles, cabinet and internal components. Solar panels and signs shall be removed removed prior to salvaging. Screw–in foundations shall be cleaned of dirt and debris and salvaged with bolt and anchor studs.




Break–Away Sign Post Anchor Detail
(Concrete Surface Mount)




Break–Away Sign Post Anchor Detail
(Brick Paver Median/Island Mount)

### Pavement Installation Sequence

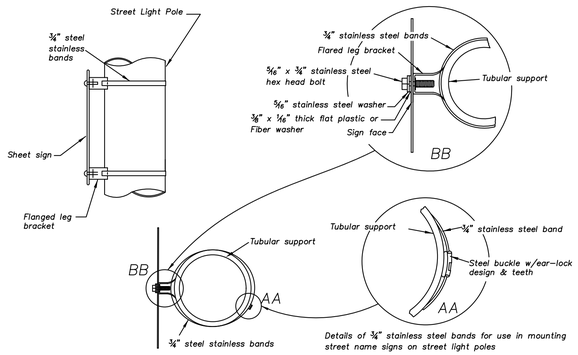
1. Sign post anchor driven partially into subgrade using a drive cap with sledge or power equipment prior to the placement of the pavement.
2. Anchor sleeve slipped over anchor and driven into subgrade together with the sign post anchor prior to the placement of the pavement.
3. Insert sign post into the post anchor and bolt in place.

### Ground Installation Sequence

1. Sign post anchor driven partially into subgrade using a drive cap with sledge or power equipment.
2. Anchor sleeve slipped over anchor and driven into subgrade together with the sign post anchor.
3. Insert sign post into the post anchor and bolt in place.

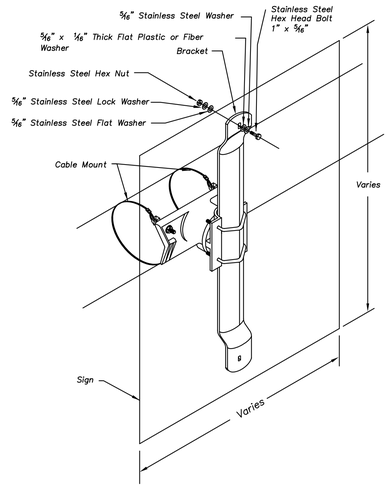
Note: The first hole above the finished grade level in all three units must be in line for insertion of the corner bolt.

All corner bolts and nuts for fastening the signs and sign post assembly and all washers shall comply with appropriate sections of the standard specifications (latest edition) and shall be a subsidiary item.

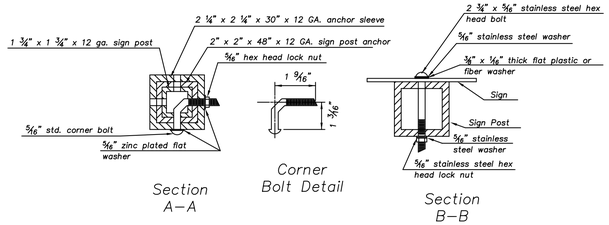



Sign Mounting Detail (Vertical Pole)

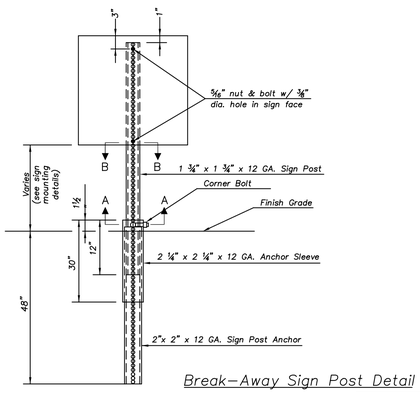
Notes:
1. Signs on tubular supports shall be attached with two (2) brackets and stainless steel bands.
2. Holes in sign for attachment to the mounting brackets shall be offset a minimum of 2" from the edge of sign.
3. Holes in sign shall be located such that the sign is level.




Sign Mounting Detail (Mast Arm)
(Does not apply to overhead street name signs)




Section A–A | Corner Bolt Detail | Section B–B




Break–Away Sign Post Detail

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGNING DETAILS

SHEET 1 OF 3

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 14:13

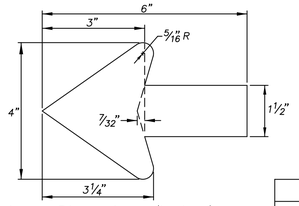
Drawn By : lrosenbaum
File : 1366815721.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 212 | 393 |

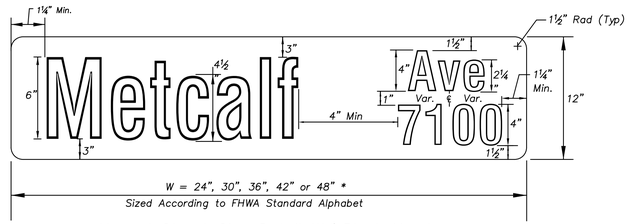
| Table 1 (Alpha Streets) | |
|---|---|
| Standard Abbreviation List | |
| Avenue | Ave |
| Boulevard | Blvd |
| Circle | Cir |
| Court | Ct |
| Creek | Crk |
| Drive | Dr |
| Highway | Hwy |
| Lane | Ln |
| Parkway | Pkwy |
| Place | Pl |
| Plaza | Plz |
| Road | Rd |
| Street | St |
| Terrace | Ter |
| Trail | Tr |
| Way | Way |

| Table 2 (Numbered Streets) | |
|---|---|
| Standard Abbreviation List | |
| First | st |
| Second | nd |
| Third | rd |
| Fourth to Ninth | th |

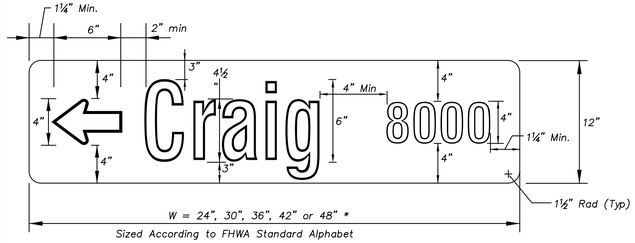
*Note: Series B 2000 letters shall be used in lieu of Highway Series C to avoid exceeding a 48" sign blank.



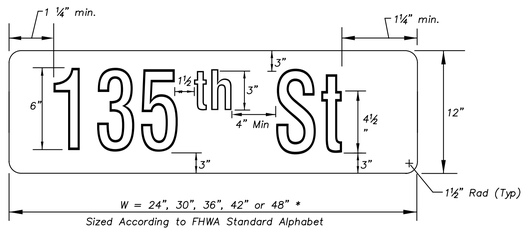

Arrow Dimensions (Inches)




Named Street Sign Detail W/ Block Number




Named Street Sign Detail / Directional




Numbered Street Sign Detail

Sign Material Notes:

Sign Blank: 0.080 Gauge, Alodized 6061-T6 or 5052-H38

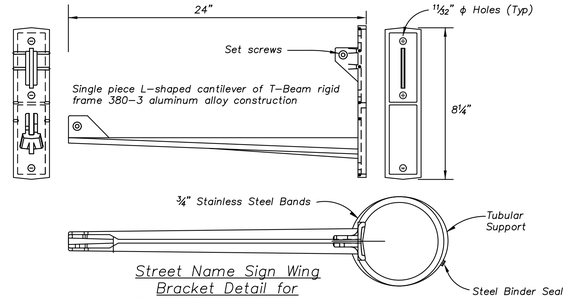
Legend: White (No Border)

Background: Green (Federal Color STDS 595A, Color No.14109

Text Series: Series C 2000 as indicated in the examples

Sheeting: Micro-Encapsulated, Retro-Reflective Prismatic Sheeting (Type XI)

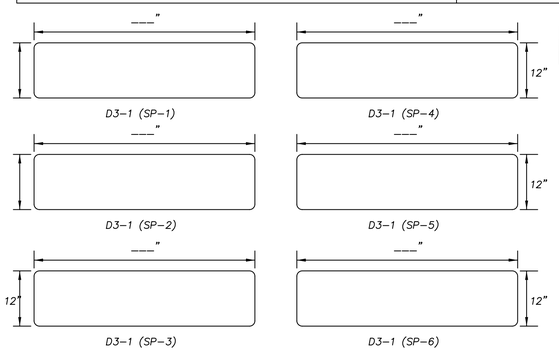
Process: Electro-Cutable Film



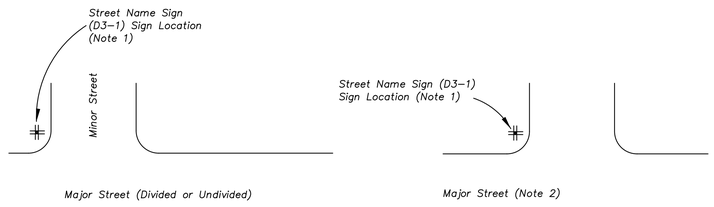

Street Name Sign Wing Bracket Detail for Round Tubular Supports

Mount to round street light pole using two ¾" wide stainless steel bands.

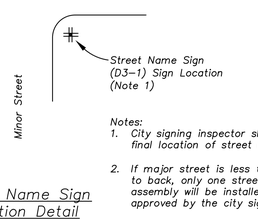
| Street Name Sign Quantity Table | | | | |
|---|---|---|---|---|
| Sign Designation | Size (W x H) | Area (S.F.) | Number | Quantity (S.F.) |
| D3-1 (SP-1) | X 12" | | | |
| D3-1 (SP-2) | X 12" | | | |
| D3-1 (SP-3) | X 12" | | | |
| D3-1 (SP-4) | X 12" | | | |
| D3-1 (SP-5) | X 12" | | | |
| D3-1 (SP-6) | X 12" | | | |
| Total | | | | |




Project Sign Details

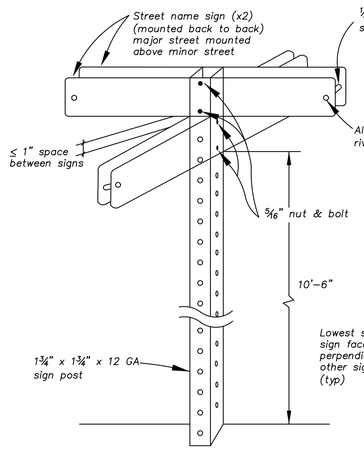



Street Name Sign Location Detail ("T" Intersection)

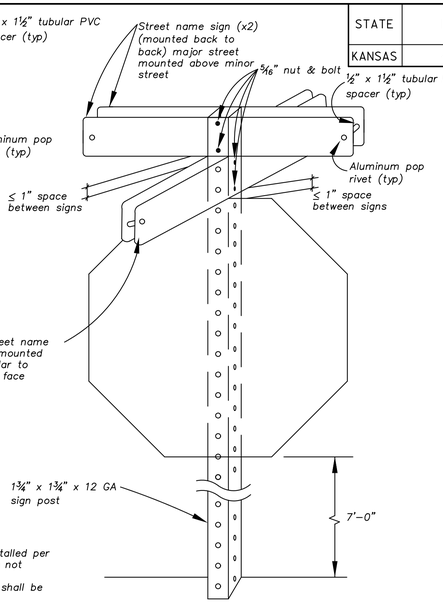



Street Name Sign Location Detail (4-Leg Intersection)

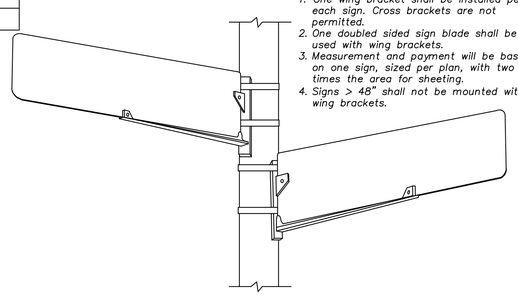
Notes:
1. City signing inspector shall approve final location of street name sign.
2. If major street is less than 36' back to back, only one street name sign assembly will be installed in location approved by the city signing inspector.




Street Name Sign Assembly (Mounted Separately)

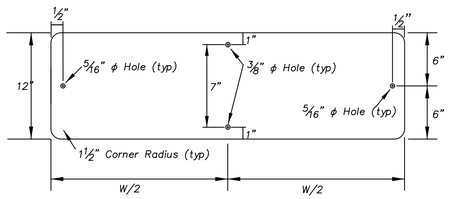



Street Name Sign Assembly (Mounted with Other Sign)

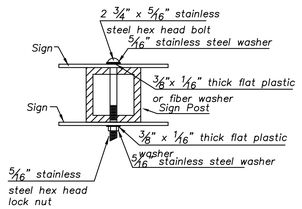


Tubular Support Mounting Detail

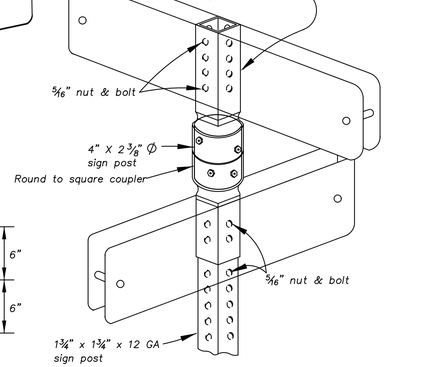
Note:
1. One wing bracket shall be installed per each sign. Cross brackets are not permitted.
2. One doubled sided sign blade shall be used with wing brackets.
3. Measurement and payment will be based on one sign, sized per plan, with two times the area for sheeting.
4. Signs > 48" shall not be mounted with wing brackets.



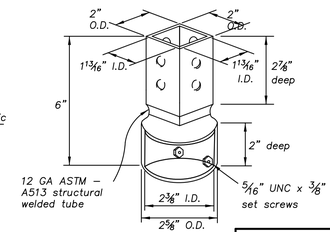

Sign Mounting Hole Detail (For Mounting on Square Tubular Supports)




Double Sign Face Mounting Detail




Street Name Sign Bracket Square Tubular Supports (Skewed Intersections Only)




Round to Square Coupler Detail

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGNING DETAILS

SHEET 2 OF 3

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Plotted : 25-APR-2019 14:13

Drawn By : lrosenbaum

File : 13668157r22.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 213 | 393 |

| MUTCD Designation | Designation | Sign Sizes (W x H) (1), (2), (3), (4) | | Sign Area |
|---|---|---|---|---|
| | | Facing Traffic on Single Lane St or Approach | Facing Traffic on Multi-Lane St or Approach | Small/Large |
| Object Marker Signs | | 20 mph ≤ V ≤ 55 mph | 20 mph ≤ V ≤ 55 mph | (S.F.) |
| OM1-3 | Object Marker (Type 1) | 18" x 18" | 18" x 18" | 2.25 |
| OM-3 (L or R) | Object Marker (Type 3) (Left or Right) | 12" x 36" | 12" x 36" | 3.00 |
| OM4-3 | End of Road Marker | 18" x 18" | 18" x 18" | 2.25 |

| MUTCD Designation | Designation | Sign Sizes (W x H) (1), (2), (3), (4) | | | Sign Area |
|---|---|---|---|---|---|
| | | Facing Traffic on Single Lane St or Approach | Facing Traffic on Multi-Lane St or Approach | | Small / Large |
| Regulatory Marker Signs | | 20 mph ≤ V < 55 mph | V ≤ 35 mph | 35 mph < V < 55 mph | (S.F.) |
| R1-1 | Stop | 30" x 30" (6) | 36" x 36" | 36" x 36" | 5.18 / 7.46 |
| R1-2 | Yield | 36" x 36" x 36" | 36" x 36" x 36" | 48" x 48" x 48" | 3.90 / 6.93 |
| R1-3P | All Way (Plaque) | 18" x 6" | 18" x 6" | 18" x 6" | 0.75 |
| R1-5 | Yield Here to Pedestrians | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| R2-1 | Speed Limit | 24" x 30" | 24" x 30" | 30" x 36" | 5.00 / 7.50 |
| R3-1 | No Right Turn (Symbol) | 24" x 24" | 24" x 24" | 36" x 36" | 4.00 / 9.00 |
| R3-2 | No Left Turn (Symbol) | 24" x 24" | 24" x 24" | 36" x 36" | 4.00 / 9.00 |
| R3-4 | No U-Turn (Symbol) | 24" x 24" | 24" x 24" | 36" x 36" | 4.00 / 9.00 |
| R3-5 (L or R) | Overhead Lane Control Left (Right) Arrow | 30" x 36" | 30" x 36" | 30" x 36" | 7.50 |
| R3-7 (L or R) | Left (Right) Lane Must Turn Left (Right) | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| R3-8 (2-Lane) | Intersection Lane Control | 30" x 30" | 30" x 30" | 30" x 30" | 6.25 |
| R3-8 (3-Lane) | Intersection Lane Control | 48" x 30" | 48" x 30" | 48" x 30" | 10.00 |
| R3-8 (4-Lane) | Intersection Lane Control | 66" x 30" | 66" x 30" | 66" x 30" | 13.75 |
| R3-9b | Two-Way Left Turn Only | 24" x 36" | 24" x 36" | 24" x 36" | 6.00 |
| R4-7 | Keep Right (Symbol) | 24" x 30" | 24" x 30" | 24" x 30" | 5.00 |
| R5-7 | Do Not Enter | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| R5-1a | Wrong Way | 36" x 24" | 36" x 24" | 42" x 30" | 6.00 / 8.75 |
| R5-2 | No Trucks (Symbol) | 24" x 24" | 24" x 24" | 24" x 24" | 4.00 |
| R6-1 (L or R) | One Way (Left or Right) | 36" x 12" | 36" x 12" | 54" x 18" | 3.00 / 6.75 |
| R6-2 (L or R) | One Way (Left or Right) | 24" x 30" | 24" x 30" | 30" x 36" | 5.00 / 7.50 |
| R6-4 | Roundabout Directional (Single Lane) | 30" x 24" | 30" x 24" | 30" x 24" | 5.00 |
| R6-4a | Roundabout Directional (Multi-Lane) | 48" x 24" | 48" x 24" | 48" x 24" | 8.00 |
| R6-5P | Roundabout Circulation (Plaque) | 30" x 30" | 30" x 30" | 30" x 30" | 6.25 |
| R7-108 | No Parking (time) | 12" x 18" | 12" x 18" | 12" x 18" | 1.50 |
| R7-8 | Parking (handicap) | 12" x 18" | 12" x 18" | 12" x 18" | 1.50 |
| R7-8P | Van Accesible Plaque | 18" x 9" | 18" x 9" | 18" x 9" | 1.125 |
| R8-3 (B,R or L) | No Parking (Symbol) with Arrow | 12" x 18" | 12" x 18" | 12" x 18" | 1.50 |
| R8-3bP | No Parking Plaque | 6" x 12" | 6" x 12" | 6" x 12" | 0.50 |
| R10-3e | Countdown Pedestriam Pushbutton | 9" x 15" | 9" x 15" | 9" x 15" | 0.94 |
| R10-11 | No Turn on Red (Red Ball Symbol) | 24" x 30" | 24" x 30" | 36" x 48" | 5.00 / 12.00 |
| R10-12 | Left Turn on Green (Green Ball Symbol) | 30" x 36" | 30" x 36" | 30" x 36" | 7.50 |
| R10-FYA | Left Turn Yield on Flashing Yellow Arrow | 30" x 36" | 30" x 36" | 30" x 36" | 7.50 |
| R10-30 | Right Turn on Red Must Yield to U-Turn | 30" x 36" | 30" x 36" | 30" x 36" | 7.50 |
| R14-1 | Truck Route | 24" x 18" | 24" x 18" | 24" x 18" | 3.00 |

*Signing Notes:*

1. *All retro-reflective micro-encapsulated prismatic (MEP) background sheeting shall be ASTM Type XI.*
2. *All signs shall be made from a combination retroreflective sheeting background with electronic cuttable film applied to the surface.*
3. *Process color inks or silk screening signs are not allowed.*
4. *Sign sizes on roadways with posted speed limits 55 mph or greater shall be in accordance with the MUTCD sign tables for "Expressways" or "Oversized" in the case of School Zone signs.*
5. *All school warning signs and plaques shall have a fluorescent yellow-green background with a black legend and border.*
6. *If a side street intersects a multi-lane street with a speed limit of 45 mph or higher, use a 36" x 36" R1-1.*

| MUTCD Designation | | Sign Sizes (W x H) (1), (2), (3), (4) | | | Sign Area |
|---|---|---|---|---|---|
| | | Facing Traffic on Single Lane St or Approach | Facing Traffic on Multi-Lane St or Approach | | Small / Large |
| Warning Signs | | 20 mph ≤ V ≤ 55 mph | V ≤ 35 mph | 35 mph < V < 55 mph | (S.F.) |
| W1-1 (L or R) | Turn (Left or Right) | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W1-1a (L or R) | Advance Turn (Left or Right) | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W1-2 (L or R) | Curve (Left or Right) | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W1-2a (L or R) | Advance Curve (Left or Right) | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W1-6 (L or R) | One Direction Arrow (Left or Right) | 48" x 24" | 48" x 24" | 48" x 24" | 8.00 |
| W1-7 | Two Direction Large Arrow | 48" x 24" | 48" x 24" | 48" x 24" | 8.00 |
| W1-8 (L or R) | Chevron (Left or Right) | 18" x 24" | 18" x 24" | 18" x 24" | 3.00 |
| W2-6 | Circular Intersection | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W3-1 | Stop Ahead | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W3-2 | Yield Ahead | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W3-3 | Signal Ahead | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W3-5 | Speed Reduction | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W4-2 (L or R) | Lane Ends (Left or Right) | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W4-4P | Cross Traffic Does Not Stop Plaque | 24" x 12" | 24" x 12" | 24" x 12" | 2.00 |
| W6-1 | Divided Highway | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W6-2 | Divided Highway Ends | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W6-3 | Two-Way Traffic | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W9-1 (L or R) | Left (Right) Lane Ends | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W10-1 | R.R. Advance Warning | 36" Dia. | 36" Dia. | 36" Dia. | 7.07 |
| W9-2 (L or R) | Lane Ends Merge Left (Right) | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W11-2 (L or R) | Pedestrian Crossing (Left or Right) | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W11-8 | Emergency Vehicle | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W11-12P | Emergency Signal Ahead Plaque | 36" x 30" | 36" x 30" | 36" x 30" | 7.50 |
| W11-15 (L or R) | Pedestrian/Bicycle Crossing (Left or Right) | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W12-1 | Double Down Arrow | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W12-2 | Low Clearance | 36" x 36" | 36" x 36" | 36" x 36" | 9.00 |
| W13-1P | Advisory Speed Plaque | 18" x 18" | 18" x 18" | 18" x 18" | 2.25 |
| W14-2 | No Outlet | 30" x 30" | 30" x 30" | 36" x 36" | 6.25 / 9.00 |
| W14-2a (L or R) | No Outlet Plaque (Left or Right) | 36" x 12" | 36" x 12" | 36" x 12" | 3.00 |
| W14-3 | No Passing Zone | 48" x 48" x 36" | 48" x 48" x 36" | 48" x 48" x 36" | 5.56 |
| W16-7P (L or R) | Diagonal Arrow Plaque (Left or Right) | 24" x 12" | 24" x 12" | 24" x 12" | 2.00 |
| W16-9P | Ahead Plaque | 24" x 12" | 24" x 12" | 24" x 12" | 2.00 |
| W16-12P | Traffic Circle Plaque | 24" x 18" | 24" x 18" | 24" x 18" | 3.00 |
| W16-17P | Roundabout Plaque | 24" x 12" | 24" x 12" | 24" x 12" | 2.00 |

| MUTCD Designation | | Sign Sizes (W x H) (1), (2), (3), (4) | | | Sign Area |
|---|---|---|---|---|---|
| | | Facing Traffic on Single Lane St or Approach | | Facing Traffic on Multi-Lane St or Approach | Small / Large |
| School Zone Signs (5) | | V ≤ 30 mph | 30 mph < V < 55 mph | 20 mph ≤ V < 55 mph | (S.F.) |
| S1-1 (L or R) | School (Left or Right) | 30" x 30" | 36" x 36" | 36" x 36" | 4.69 / 6.75 |
| S3-1 | School Bus Stop Ahead | 30" x 30" | 36" x 36" | 36" x 36" | 6.25 / 9.00 |
| S4-5 | Reduced School Speed limit Ahead | 30" x 30" | 36" x 36" | 36" x 36" | 6.25 / 9.00 |
| S4-1P | Time Plaque | 24" x 10" | 24" x 10" | 24" x 10" | 1.67 |
| S4-3P | School Plaque | 24" x 8" | 24" x 8" | 24" x 8" | 1.33 |
| S4-4P | When Flashing | 24" x 10" | 24" x 10" | 24" x 10" | 1.67 |
| S5-1 | School Speed Limit XX When Flashing | 24" x 48" | 24" x 48" | 24" x 48" | 8.00 |
| S5-2 | End School Zone | 24" x 30" | 24" x 30" | 24" x 30" | 5.00 |
| S5-3 | End School Speed Limit | 24" x 30" | 24" x 30" | 24" x 30" | 5.00 |
| W16-5P (L or R) | Turn Arrow (Left or Right) | 24" x 12" | 24" x 12" | 24" x 12" | 2.00 |
| W16-6P (L or R) | Advance Turn Arrow (Left or Right) | 24" x 12" | 24" x 12" | 24" x 12" | 2.00 |
| W16-7P (L or R) | Diagonal Arrow Plaque (Left or Right) | 24" x 12" | 24" x 12" | 24" x 12" | 2.00 |
| W16-9P | Ahead Plaque | 24" x 12" | 24" x 12" | 24" x 12" | 2.00 |

| MUTCD Designation | | Sign Sizes (W x H) (1), (2), (3) | | | Sign Area |
|---|---|---|---|---|---|
| | | Facing Traffic on Single Lane St or Approach | | Facing Traffic on Multi-Lane St or Approach | Small / Large |
| Bicycle Facility Signs | | V ≤ 30 mph | 30 mph < V < 55 mph | 20 mph ≤ V < 55 mph | (S.F.) |
| R3-17 | Bike Lane | 24" x 18" | 24" x 18" | 24" x 18" | 3.00 |
| R3-17aP | Ahead Plaque | 24" x 8" | 24" x 8" | 24" x 8" | 1.33 |
| R3-17bP | Ends Plaque | 24" x 8" | 24" x 8" | 24" x 8" | 1.33 |
| R3-17cP | Begins Plaque | 24" x 8" | 24" x 8" | 24" x 8" | 1.33 |
| | | | | | |
| | | | | | |
| | | | | | |

*OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.*

*KANSAS DEPARTMENT OF TRANSPORTATION*

SIGNING DETAILS

SHEET 3 OF 3

| DATE | BY | |
|---|---|---|
| | REFERENCES NOTED | |
| | REFERENCES CHECKED | |

Plotted :25-APR-2019 13:04

Drawn By: lrosenbaum

File : 13668T5723.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 214 | 393 |

# QUANTITIES SHEET

SIGNS, POSTS, & FOOTINGS TO BE INSTALLED ON PROJECT

| PLAN SHEET NUMBER | PLAN STATION NUMBER | (CL) LOCATION / LATERAL POSITION | SIGN DESIGNATION | SIGN SIZE | SIGN LAYOUT SHEET NUMBER | TYPE OF SIGN | | | 4" X 6" POSTS | | | 312.25 ALUMINUM BEAM | U-POSTS | | GALVANIZED STEEL BEAM POSTS | | | | | | PERFORATED SQUARE STEEL TUBE (PSST) POSTS | | | | | | | | CONCRETE FOOTINGS | | | | | TYPE OF SIGN STRUCTURE OR SUPPORT MOUNT | | | | | | MOUNT ABOVE SIGN DESIGNATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | WOOD | | STEEL | | | | W6x9 | | W10x12 | | W10x22 | | 1 3/4" | | 2" | | 2 1/4" | | | | 2 1/2" | | WOOD POST | STEEL BEAM POST | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | A36 | | A572 (ALT) | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 18" DIA. | 24" DIA. | 30" DIA. | 24" DIA. | 30" DIA. | | | | | | |
| | | | | | | FLAT SHEET | REINFORCED PANEL | OVERLAY | FLAT SHEET SIGN | REINFORCED PANEL SIGN | STRUCTURAL TUBING | | 2 LB PER FT | 3 LB PER FT | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | POST | FOOTING | POST | FOOTING | POST | FOOTING | COUPLER | COUPLER & FOOTING | POST | FOOTING | | | | | | OVERHEAD | CANTILEVER | BUTTERFLY | BRIDGE MOUNT | MAST ARM | VERT. SUPPORT | |
| 197 | 101+02 | RT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 197 | 104+18 | LT | R3-4 | 24" x 24" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| | | | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 198 | 107+34 | LT | W6-1 | 36" x 36" | | X | | | | | | | | | | | | | | | | | 2 | 2 | | | | | | | | | | | | | | | | |
| | | | W6-2 | 36" x 36" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 198 | 5+47 | LT | R2-1 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 198 | 108+45 | RT | R2-1 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| | | | R8-3 | 24" x 24" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199 | 110+54 | LT | R6-1 | 36" x 12" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 199 | 10+46 | LT | R1-1 | 30" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 199 | 111+08 | RT | W3-3 | 30" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| | | | R8-3 | 24" x 24" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199 | 112+14 | LT | R2-1 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| | | | R8-3 | 24" x 24" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199 | 15+41 | RT | R1-1 | 30" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 199 | 114+02 | LT | R6-1 | 36" x 12" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 200 | 116+64 | LT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 200 | 117+50 | RT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 201 | 120+61 | RT | R6-1 | 36" x 12" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 201 | 25+49 | LT | R1-1 | 30" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 201 | 124+32 | LT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 201 | 30+46 | LT | R1-1 | 30" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |
| 202 | 125+15 | LT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | |

CENTERLINE LOCATION
L - LEFT OF CENTERLINE
R - RIGHT OF CENTERLINE
C - ON THE CENTERLINE

LATERAL POSITION
S - SHOULDER MOUNT
O - OFFSET MOUNT
G - GORE MOUNT
M - MEDIAN MOUNT

NOTE: SEE STANDARD PLAN SHEET TE590 FOR DETAILED SPECIFICATIONS.

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 1 | 7/23/10 | Added Coupler and Coupler/Footing Quantity | D.D.G. | D.B. |

| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 7/23/2010 | APP'D | Steven A. Buckley | |
| DESIGNED | D.D.G. | DETAILED | K.S. | QUANTITIES | TRACED B.B. |
| DESIGN CK. | S.A.B. | DETAIL CK. | D.D.G. | QUAN. CK. | TRACE CK. |

TE430

7/1/03

KDOT Graphics Certified 04-23-2019

Sh. No. 214

KDOT Graphics Certified

Plotted : 25-APR-2019 14:22

Drawn By : lrosenbaum
File : te430a.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 215 | 393 |

# QUANTITIES SHEET

SIGNS, POSTS, & FOOTINGS TO BE INSTALLED ON PROJECT

| PLAN SHEET NUMBER | PLAN STATION NUMBER | (CL) LOCATION / LATERAL POSITION | SIGN DESIGNATION | SIGN SIZE | SIGN LAYOUT SHEET NUMBER | TYPE OF SIGN | | | 4" X 6" POSTS | | | 312.25 ALUMINUM BEAM | U-POSTS | | GALVANIZED STEEL BEAM POSTS | | | | | | PERFORATED SQUARE STEEL TUBE (PSST) POSTS | | | | | | | | | | CONCRETE FOOTINGS | | | | | TYPE OF SIGN STRUCTURE OR SUPPORT MOUNT | | | | | | MOUNT ABOVE SIGN DESIGNATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | WOOD | | STEEL | | | | W6x9 | | W10x12 | | W10x22 | | 1 3/4" | | 2" | | 2 1/4" | | | | 2 1/2" | | WOOD POST | STEEL BEAM POST | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | A36 | | A572 (ALT) | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 18" DIA. | 24" DIA. | 30" DIA. | 24" DIA. | 30" DIA. | | | | | | | |
| | | | | | | FLAT SHEET | REINFORCED PANEL | OVERLAY | FLAT SHEET SIGN | REINFORCED PANEL SIGN | STRUCTURAL TUBING | | 2 LB PER FT | 3 LB PER FT | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | POST | FOOTING | POST | FOOTING | POST | FOOTING | COUPLER | COUPLER & FOOTING | POST | FOOTING | | | | | | OVERHEAD | CANTILEVER | BUTTERFLY | BRIDGE MOUNT | MAST ARM | VERT. SUPPORT | |
| 202 | 125+24 | RT | R2-1 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | | | R8-3 | 24" x 24" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 202 | 125+82 | LT | W3-3 | 30" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | | | R8-3 | 24" x 24" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 202 | 126+72 | LT | R4-7 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | | | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 202 | 36+93 | RT | R1-1 | 30" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 202 | 36+97 | LT | R5-2 | 24" x 24" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 202 | 40+43 | LT | R1-1 | 30" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 202 | 127+61 | LT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 202 | 127+80 | LT | R8-3 | 24" x 24" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 203 | 132+42 | LT | R2-1 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | | | R8-3 | 24" x 24" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 203 | 133+15 | LT | R4-7 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | | | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 203 | 45+41 | LT | R1-1 | 30" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 203 | 134+33 | RT | R2-1 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | | | R8-3 | 24" x 24" | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 205 | 143+05 | RT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 205 | 144+94 | LT | R2-1 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 206 | 145+78 | LT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 206 | 146+83 | RT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 206 | 148+60 | RT | R2-1 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| 207 | 152+18 | LT | R6-1 | 36" x 12" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | |

CENTERLINE LOCATION
L - LEFT OF CENTERLINE
R - RIGHT OF CENTERLINE
C - ON THE CENTERLINE

LATERAL POSITION
S - SHOULDER MOUNT
O - OFFSET MOUNT
G - GORE MOUNT
M - MEDIAN MOUNT

NOTE: SEE STANDARD PLAN SHEET TE590 FOR DETAILED SPECIFICATIONS.

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 1 | 7/23/10 | Added Coupler and Coupler/Footing Quantity | D.D.G. | D.B. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FHWA APPROVAL | | | 7/23/2010 | APP'D | Steven A. Buckley | | |
| DESIGNED | D.D.G. | DETAILED | K.S. | QUANTITIES | | TRACED | B.B. |
| DESIGN CK. | S.A.B. | DETAIL CK. | D.D.G. | QUAN. CK. | | TRACE CK. | |

TE430

7/1/03

KDOT Graphics Certified 04-23-2019

Sh. No. 215

KDOT Graphics Certified

Plotted : 25-APR-2019 14:22

Drawn By : lrosenbaum
File : te430b.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 216 | 393 |

# QUANTITIES SHEET

SIGNS, POSTS, & FOOTINGS TO BE INSTALLED ON PROJECT

| PLAN SHEET NUMBER | PLAN STATION NUMBER | (CL) LOCATION / LATERAL POSITION | SIGN DESIGNATION | SIGN SIZE | SIGN LAYOUT SHEET NUMBER | TYPE OF SIGN | | | 4" X 6" POSTS | | | 312.25 ALUMINUM BEAM | U-POSTS | | GALVANIZED STEEL BEAM POSTS | | | | | | PERFORATED SQUARE STEEL TUBE (PSST) POSTS | | | | | | | | CONCRETE FOOTINGS | | | | | TYPE OF SIGN STRUCTURE OR SUPPORT MOUNT | | | | | | MOUNT ABOVE SIGN DESIGNATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | WOOD | | STEEL | | | | W6x9 | | W10x12 | | W10x22 | | 1 3/4" | | 2" | | 2 1/4" | | | | 2 1/2" | | WOOD POST | STEEL BEAM POST | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | A36 | | A572 (ALT) | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | FLAT SHEET | REINFORCED PANEL | OVERLAY | FLAT SHEET SIGN | REINFORCED PANEL SIGN | STRUCTURAL TUBING | | 2 LB PER FT | 3 LB PER FT | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | POST | FOOTING | POST | FOOTING | POST | FOOTING | COUPLER | COUPLER & FOOTING | POST | FOOTING | 18" DIA. | 24" DIA. | 30" DIA. | 24" DIA. | 30" DIA. | OVERHEAD | CANTILEVER | BUTTERFLY | BRIDGE MOUNT | MAST ARM | VERT. SUPPORT | |
| 207 | 152+38 | LT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| 207 | 152+55 | LT | R3-2 | 24" x 24" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| 207 | 152+64 | RT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| 207 | 152+66 | RT | R3-2 | 24" x 24" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| 207 | 152+97 | RT | R6-1 | 36" x 12" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| 208 | 157+04 | LT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| 208 | 158+50 | RT | OM1-3 | 18" x 18" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | |
| 209 | 162+67 | RT | R2-1 | 24" x 30" | | X | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | |

CENTERLINE LOCATION
L - LEFT OF CENTERLINE
R - RIGHT OF CENTERLINE
C - ON THE CENTERLINE

LATERAL POSITION
S - SHOULDER MOUNT
O - OFFSET MOUNT
G - GORE MOUNT
M - MEDIAN MOUNT

NOTE: SEE STANDARD PLAN SHEET TE590 FOR DETAILED SPECIFICATIONS.

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 1 | 7/23/10 | Added Coupler and Coupler/Footing Quantity | D.D.G. | D.B. |

| | | | | | |
|---|---|---|---|---|---|
| FHWA APPROVAL | | 7/23/2010 | APP'D | Steven A. Buckley | |
| DESIGNED | D.D.G. | DETAILED | K.S. | QUANTITIES | TRACED B.B. |
| DESIGN CK. | S.A.B. | DETAIL CK. | D.D.G. | QUAN. CK. | TRACE CK. |

TE430

7/1/03

KDOT Graphics Certified 04-23-2019

Sh. No. 216

KDOT Graphics Certified

Plotted : 25-APR-2019 14:22

Drawn By : lrosenbaum
File : te430c.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 217 | 393 |

# SUMMARY OF QUANTITIES

## SIGNS

| TYPE | NUMBER | SQUARE FEET |
|---|---|---|
| FLAT SHEET | 56 | 230.5 |
| REINFORCED PANEL | | |
| OVERLAY | | |

## OBJECT MARKERS

| TYPE | NUMBER |
|---|---|
| TYPE 2 ("U" POST) | |
| TYPE 3 ("U" POST) | |

## SIGN STRUCTURES

| TYPE | NEW | MODIFIED |
|---|---|---|
| OVERHEAD STRUCTURE | | |
| CANTILEVER STRUCTURE | | |
| BUTTERFLY STRUCTURE | | |
| BRIDGE MOUNT ATTACHMENT | | |
| MAST ARM SIGN SUPPORT | | |
| | | |

## DELINEATORS

| TYPE | FLEXIBLE DELINEATOR | | RIGID DELINEATOR | |
|---|---|---|---|---|
| | TYPE I ANCHOR | TYPE III ANCHOR | "U" POST | BRACKET MOUNT |
| TYPE 'A' WHITE | | | | |
| TYPE 'A' YELLOW | | | | |
| TYPE 'B' WHITE | | | | |
| TYPE 'B' YELLOW | | | | |
| TYPE 'A' WHITE (BACK TO BACK) | | | | |
| TYPE 'A' YELLOW (BACK TO BACK) | | | | |

## REMOVALS

| TYPE | NUMBER |
|---|---|
| SIGNS | 32 |
| POSTS | 23 |
| FOOTINGS | 23 |
| SIGN STRUCTURES | |
| | |
| | |

## POSTS AND ALUMINUM BEAMS

| | 4" x 6" POST | | | | "U" POST | | GALVANIZED STEEL BEAM POST | | | | | | PERFORATED SQUARE STEEL TUBE (PSST) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WOOD | | STEEL | | | | W6x9 | | W10x12 | | W10x22 | | | | | |
| | FLAT SHEET SIGN | REINFORCED PANEL SIGN | STRUCTURAL TUBING | 3I2.25 ALUMINUM BEAM | 2 LBS/FT | 3 LBS/FT | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | 1-3/4" | 2" | 2-1/4" | 2-1/2" |
| NUMBER | | | | | | | | | | | | | | 45 | | |
| FEET | | | | | | | | | | | | | | 505.0 | | |

## POST FOOTINGS AND PSST COUPLERS

| | CONCRETE FOOTING (DIA.) | | | | | PERFORATED SQUARE STEEL TUBE (PSST) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WOOD | A36 STEEL | | A572 STEEL (ALT) | | PERFORATED SQUARE STEEL TUBE FOOTING | | | | COUPLER | COUPLER WITH FOOTING |
| | 18" | 24" | 30" | 24" | 30" | 1-3/4" | 2" | 2-1/4" | 2-1/2" | | |
| NUMBER | | | | | | | 45 | | | | |
| FEET | | | | | | | | | | | |

## BASE PLATES AND STUB POSTS

| | W6x9 | | W10x12 | | W10x22 | |
|---|---|---|---|---|---|---|
| | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) |
| BREAKAWAY BASES | | | | | | |
| BASE PLATE (TOP) | | | | | | |
| STUB POST WITH BASE PLATE | | | | | | |
| | | | | | | |
| NON-BREAKAWAY BASES | | | | | | |
| BASE PLATE | | | | | | |

## NUMBER & LENGTHS OF POSTS & ALUMINUM BEAMS (INFORMATION ONLY)

| LENGTH OF POST OR BEAM | 4" x 6" POST | | | 3I2.25 ALUMINUM BEAM | "U" POST | | GALVANIZED STEEL BEAM POST | | | | | | PERFORATED SQUARE STEEL TUBE (PSST) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WOOD | | STEEL | | | | W6x9 | | W10x12 | | W10x22 | | | | | |
| | FLAT SHEET SIGN | REINFORCED PANEL SIGN | STRUCTURAL TUBING | | 2 LBS/FT | 3 LBS/FT | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | A36 STEEL | A572 STEEL (ALT) | 1-3/4" | 2" | 2-1/4" | 2-1/2" |
| 2.1' - 4' | | | | | | | | | | | | | | | | |
| 4.1' - 6' | | | | | | | | | | | | | | | | |
| 6.1' - 8' | | | | | | | | | | | | | | | | |
| 8.1' - 10' | | | | | | | | | | | | | | 5 | | |
| 10.1' - 12' | | | | | | | | | | | | | | 28 | | |
| 12.1' - 14' | | | | | | | | | | | | | | 10 | | |
| 14.1' - 16' | | | | | | | | | | | | | | | | |
| 16.1' - 18' | | | | | | | | | | | | | | 2 | | |
| 18.1' - 20' | | | | | | | | | | | | | | | | |
| 20.1' - 22' | | | | | | | | | | | | | | | | |
| 22.1' - 24' | | | | | | | | | | | | | | | | |
| 24.1' - 26' | | | | | | | | | | | | | | | | |
| 26.1' - 28' | | | | | | | | | | | | | | | | |
| 28.1' - 30' | | | | | | | | | | | | | | | | |
| 30.1' - 32' | | | | | | | | | | | | | | | | |

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 1 | 7/23/10 | Revised Tables | D.D.G. | D.B. |

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES FOR INSTALLATIONS AND REMOVALS

TE439 7/1/03

| | | | |
|---|---|---|---|
| FHWA APPROVAL | 7/23/2010 | APP'D. | Steven A. Buckley |
| DESIGNED D.D.G. | DETAILED K.D.S. | QUANTITIES | TRACED |
| DESIGN CK. S.A.B. | DETAIL CK. D.D.G. | QUAN.CK. | TRACE CK. |

KDOT Graphics Certified 10-17-2018

Sh. No. 217

KDOT Graphics Certified

Plotted 25-APR-2019 14:22

Drawn By : lrosenbaum
File : te439.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 218 | 393 |

# RECAPITULATION OF SIGNING & DELINEATION BID ITEMS

| BID ITEMS | SQUARE FOOT | APPROXIMATE QUANTITIES | | UNITS |
|---|---|---|---|---|
| SIGN (FLAT SHEET) (HIGH PERFORMANCE) | | 231 | | SQUARE FOOT |
| SIGN (REINFORCED PANEL) (HIGH PERFORMANCE) | | | | SQUARE FOOT |
| SIGN (OVERLAY) (HIGH PERFORMANCE) | | | | SQUARE FOOT |
| SIGN POST (4" x 6" WOOD) (FLAT SHEET SIGN) | | | | LINEAR FOOT |
| SIGN POST (4" x 6" WOOD) (REINFORCED PANEL SIGN) | | | | LINEAR FOOT |
| SIGN POST (2 LB/FT "U" STEEL) | | | | LINEAR FOOT |
| SIGN POST (3 LB/FT "U" STEEL) | | | | LINEAR FOOT |
| SIGN POST (1-3/4" PERFORATED SQUARE STEEL TUBE) | | | | LINEAR FOOT |
| SIGN POST (2" PERFORATED SQUARE STEEL TUBE) | | 505 | | LINEAR FOOT |
| SIGN POST (2-1/4" PERFORATED SQUARE STEEL TUBE) | | | | LINEAR FOOT |
| SIGN POST (2-1/2" PERFORATED SQUARE STEEL TUBE) | | | | LINEAR FOOT |
| SIGN POST (4" X 6" STRUCTURAL STEEL) | | | | LINEAR FOOT |
| SIGN POST (3 I 2.25 ALUMINUM) | | | | LINEAR FOOT |
| | | A36 | A572(ALT) | |
| SIGN POST (W6X9 STEEL BEAM) | | | | LINEAR FOOT |
| SIGN POST (W10X12 STEEL BEAM) | | | | LINEAR FOOT |
| SIGN POST (W10X22 STEEL BEAM ) | | | | LINEAR FOOT |
| SIGN POST STUB WITH BREAKAWAY BASE PLATE (W6X9) | | | | EACH |
| SIGN POST STUB WITH BREAKAWAY BASE PLATE (W10X12) | | | | EACH |
| SIGN POST STUB WITH BREAKAWAY BASE PLATE (W10X22) | | | | EACH |
| SIGN POST BREAKAWAY BASE PLATE (W6X9) | | | | EACH |
| SIGN POST BREAKAWAY BASE PLATE (W10X12) | | | | EACH |
| SIGN POST BREAKAWAY BASE PLATE (W10X22) | | | | EACH |
| SIGN POST FOOTING (24" Dia. CONCRETE)(STEEL BEAM POST) | | | | LINEAR FOOT |
| SIGN POST FOOTING (30" Dia. CONCRETE)(STEEL BEAM POST) | | | | LINEAR FOOT |
| SIGN POST FOOTING (18" Dia. CONCRETE)(WOOD POST) | | | | LINEAR FOOT |
| SIGN POST FOOTING (1-3/4" PERFORATED SQUARE STEEL TUBE) | | | | EACH |
| SIGN POST FOOTING (2" PERFORATED SQUARE STEEL TUBE) | | 45 | | EACH |
| SIGN POST FOOTING (2-1/4" PERFORATED SQUARE STEEL TUBE) | | | | EACH |
| SIGN POST FOOTING (2-1/2" PERFORATED SQUARE STEEL TUBE) | | | | EACH |
| SIGN POST FOOTING (SIGN POST SQUARE COUPLER) (2-1/4") | | | | EACH |
| SIGN POST SQUARE COUPLER (2-1/4") | | | | EACH |
| SIGNING OBJECT MARKER (TYPE 2) | | | | EACH |
| SIGNING OBJECT MARKER (TYPE 3) | | | | EACH |
| SIGNING DELINEATOR (TYPE A)(WHITE RIGID, "U" POST) | | | | EACH |
| SIGNING DELINEATOR (TYPE A)(YELLOW RIGID, "U" POST) | | | | EACH |
| SIGNING DELINEATOR (TYPE B)(WHITE RIGID, "U" POST) | | | | EACH |
| SIGNING DELINEATOR (TYPE B)(YELLOW RIGID, "U" POST) | | | | EACH |
| SIGNING DELINEATOR (TYPE A)(WHITE FLEXIBLE)(TYPE I ANCHOR) | | | | EACH |
| SIGNING DELINEATOR (TYPE A)(YELLOW FLEXIBLE)(TYPE I ANCHOR) | | | | EACH |
| SIGNING DELINEATOR (TYPE B)(WHITE FLEXIBLE)(TYPE I ANCHOR) | | | | EACH |
| SIGNING DELINEATOR (TYPE B)(YELLOW FLEXIBLE)(TYPE I ANCHOR) | | | | EACH |
| SIGNING DELINEATOR (TYPE A)(WHITE FLEXIBLE)(TYPE 3 ANCHOR) | | | | EACH |
| SIGNING DELINEATOR (TYPE A)(YELLOW FLEXIBLE)(TYPE 3 ANCHOR) | | | | EACH |
| SIGNING DELINEATOR (TYPE B)(WHITE FLEXIBLE)(TYPE 3 ANCHOR) | | | | EACH |
| SIGNING DELINEATOR (TYPE B)(YELLOW FLEXIBLE)(TYPE 3 ANCHOR) | | | | EACH |

| BID ITEMS | APPROXIMATE QUANTITIES | UNITS |
|---|---|---|
| SIGN (REMOVE & RESET) | 1 | LS |

NOTE:
THE QUANTITIES FOR STEEL BEAM POSTS, STUB POSTS, BASE PLATES, AND FOOTINGS IN THE CONTRACT ARE FOR A36 STEEL. WHEN FURNISHING A572 ALTERNATE STEEL BEAM POSTS, STUB POSTS, BASE PLATES, AND FOOTINGS, PAYMENT FOR THESE ITEMS WILL BE BASED ON THE A36 STEEL UNIT PRICES INCLUDED IN THE CONTRACT.

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|
| 1 | 7/23/10 | Changed Bid Items as per Spec Book (2007) | D.D.G. | D.B. |

**KANSAS DEPARTMENT OF TRANSPORTATION**
RECAPITULATION OF
SIGNING & DELINEATION
BID ITEMS

TE450 7/1/03

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FHWA APPROVAL | | | 7/23/2010 | APP'D | Steven A. Buckley | | |
| DESIGNED | D.D.G. | DETAILED | K.D.S. | QUANTITIES | | TRACED | |
| DESIGN CK. | S.A.B. | DETAIL CK. | D.D.G. | QUAN. CK. | | TRACE CK. | |

KDOT Graphics Certified 10-17-2018

Sh. No. 218

KDOT Graphics Certified

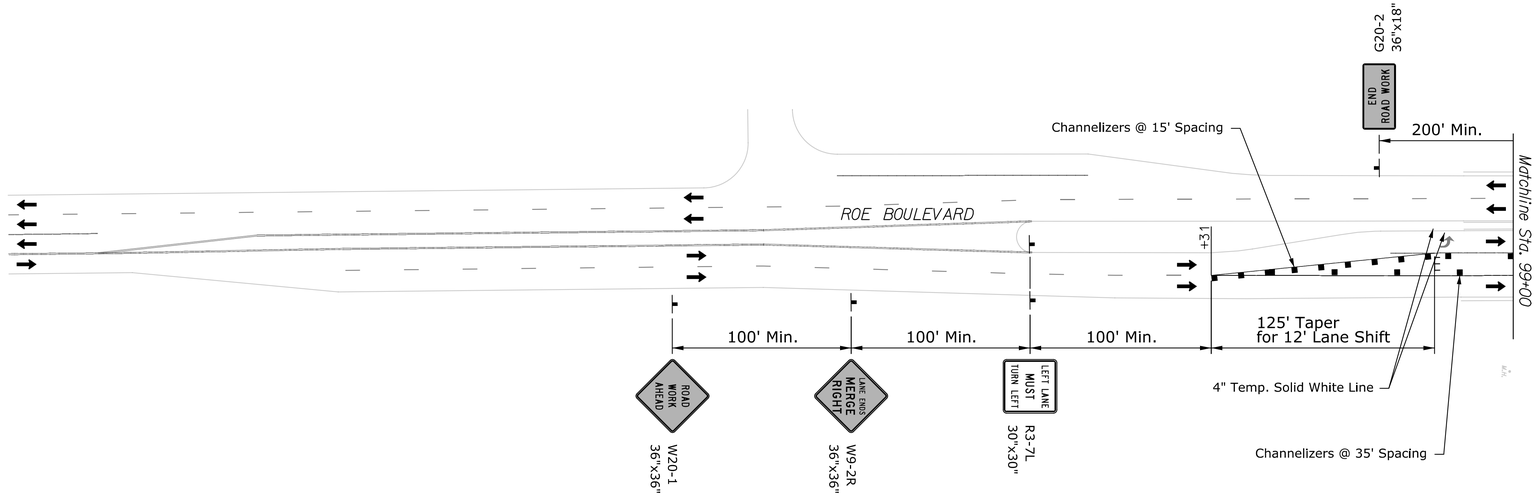
Plotted : 25-APR-2019 14:22
Drawn By : lrosenbaum
File : te450.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 219 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IA
STA. 90+00 TO STA. 99+00

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

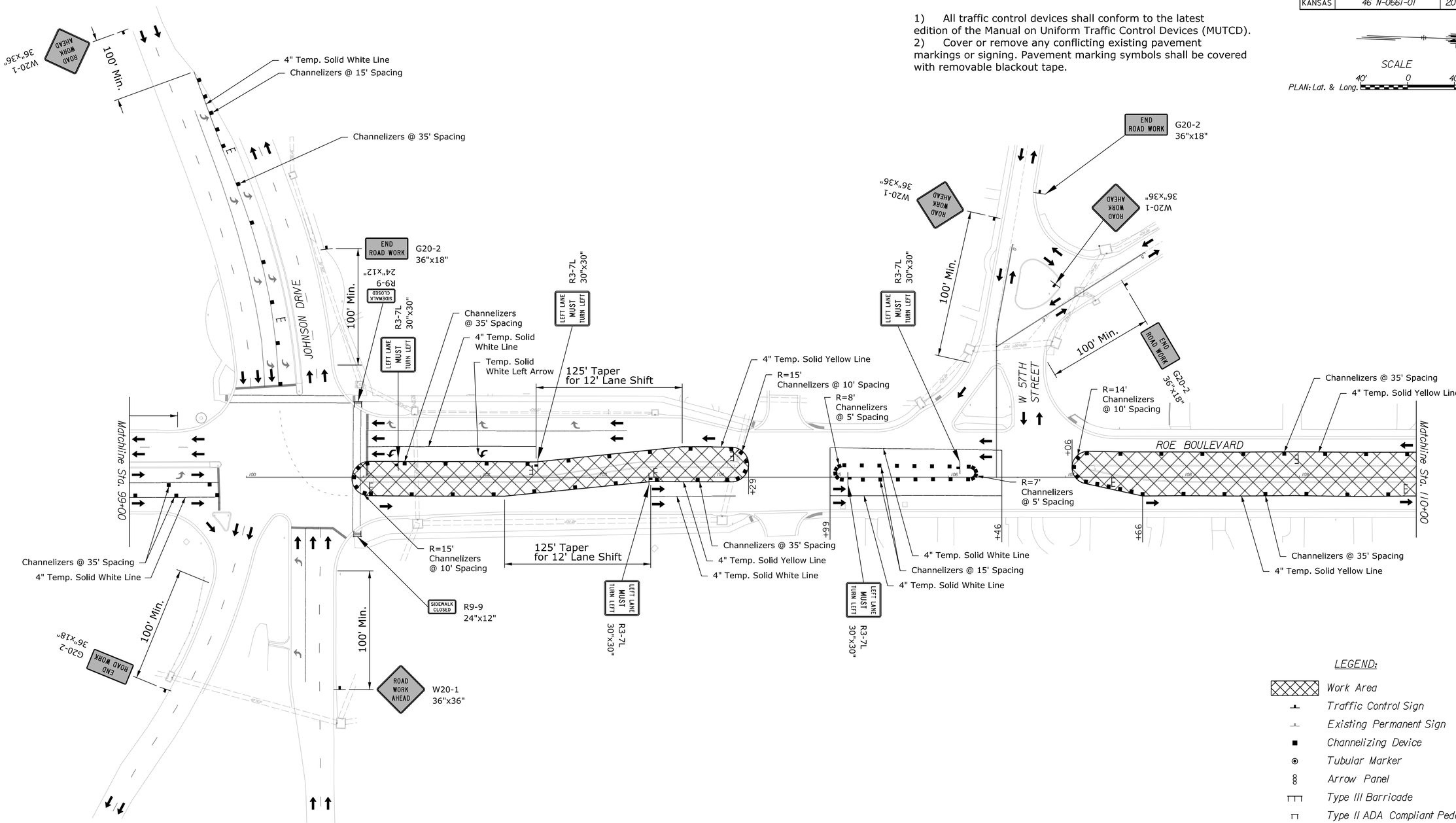
Plotted :25-APR-2019 13:04
Drawn By : lrosenbaum
File : 136681S401.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 220 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IA
STA. 99+00 TO STA. 110+00

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:04
Drawn By : lrosenbaum
File : 13668T5402.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 221 | 393 |

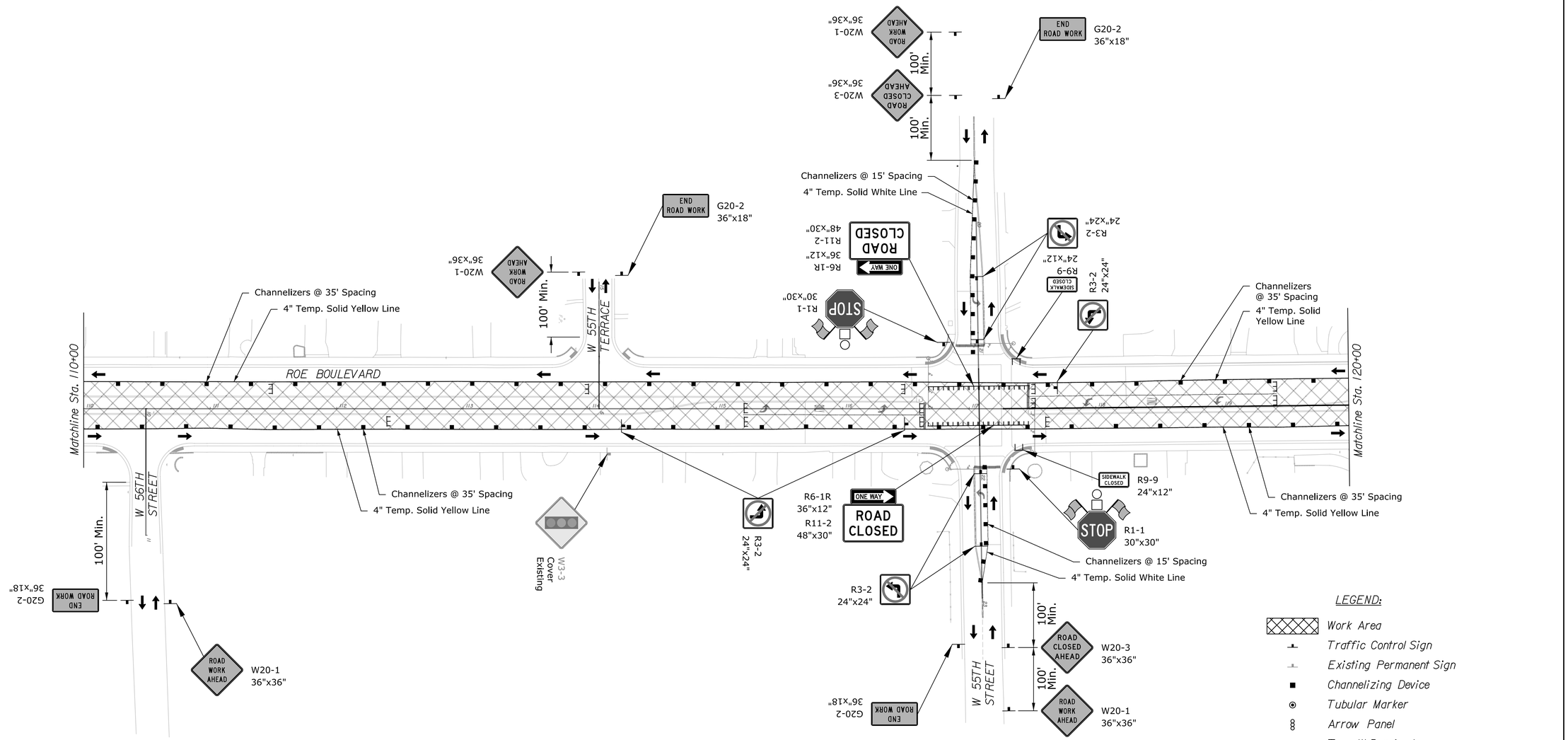
55th Street Traffic Signal Notes:

1) All existing signal heads, including pedestrian signal heads, shall be covered.
2) Signal shall be placed into north-south through flashing yellow, north-south left red, and east-west flashing red.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IA
STA. 110+00 TO STA. 120+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

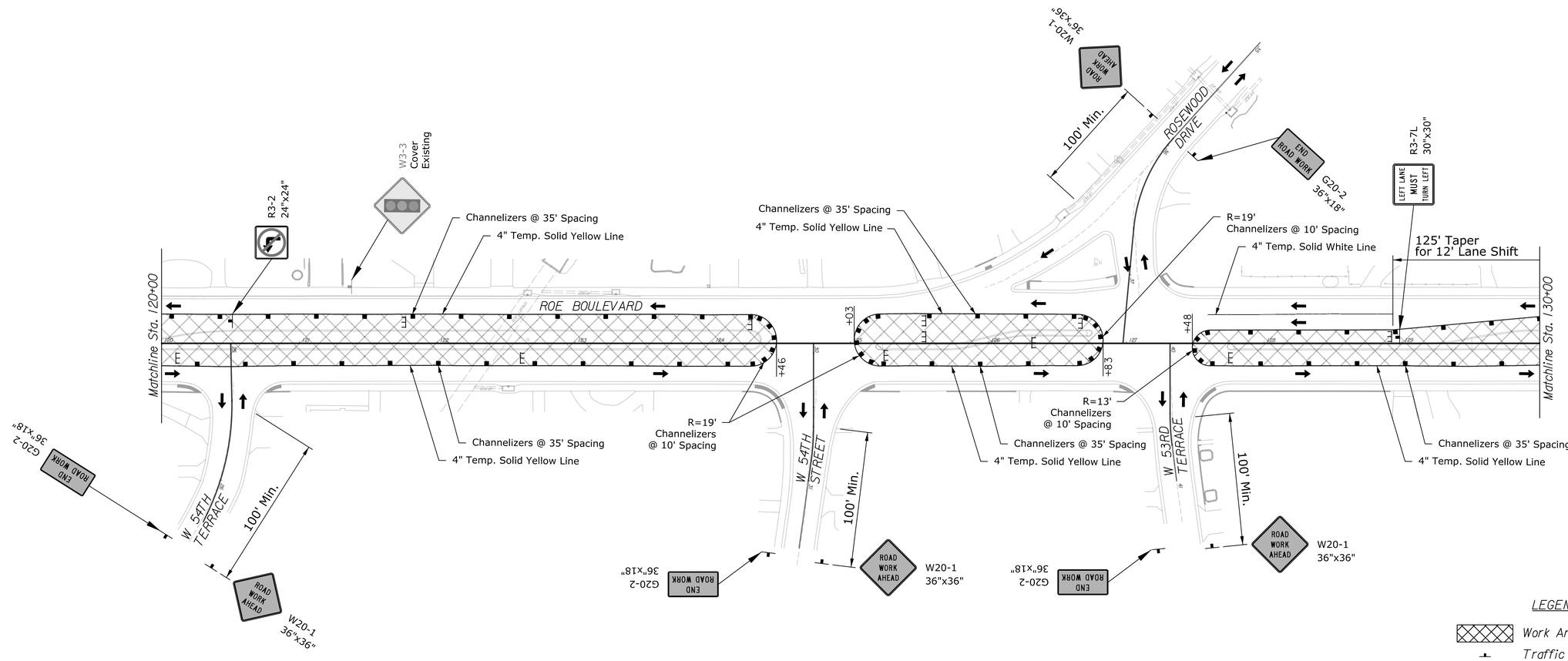
Plotted :25-APR-2019 13:04
Drawn By : lrosenbaum
File : 136681T5403.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 222 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




*LEGEND:*

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

*KANSAS DEPARTMENT OF TRANSPORTATION*
TRAFFIC CONTROL
PHASE IA
STA. 120+00 TO STA. 130+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:04
Drawn By : lrosenbaum
File : 136681t5404.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 223 | 393 |

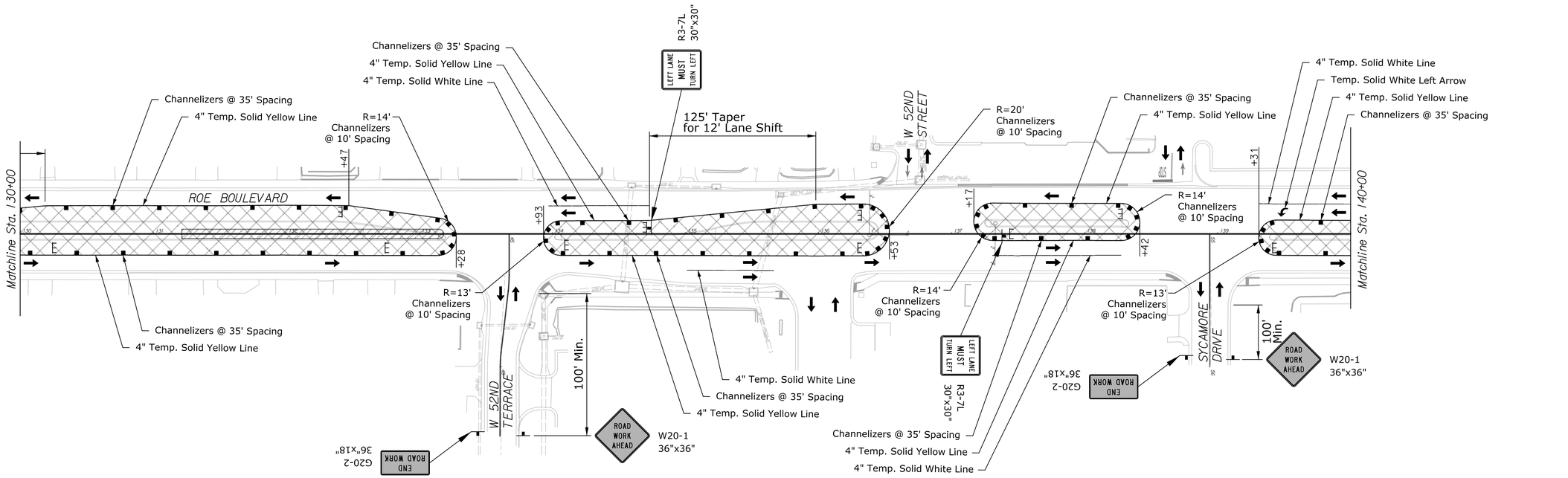
52nd Street Traffic Signal Notes:

1) All existing signal heads, including pedestrian signal heads, shall be covered.
2) Signal and all existing signal equipment shall be removed.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IA
STA. 130+00 TO STA. 140+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:04
Drawn By: Irosenbaum
File: 13668T5405.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 224 | 393 |

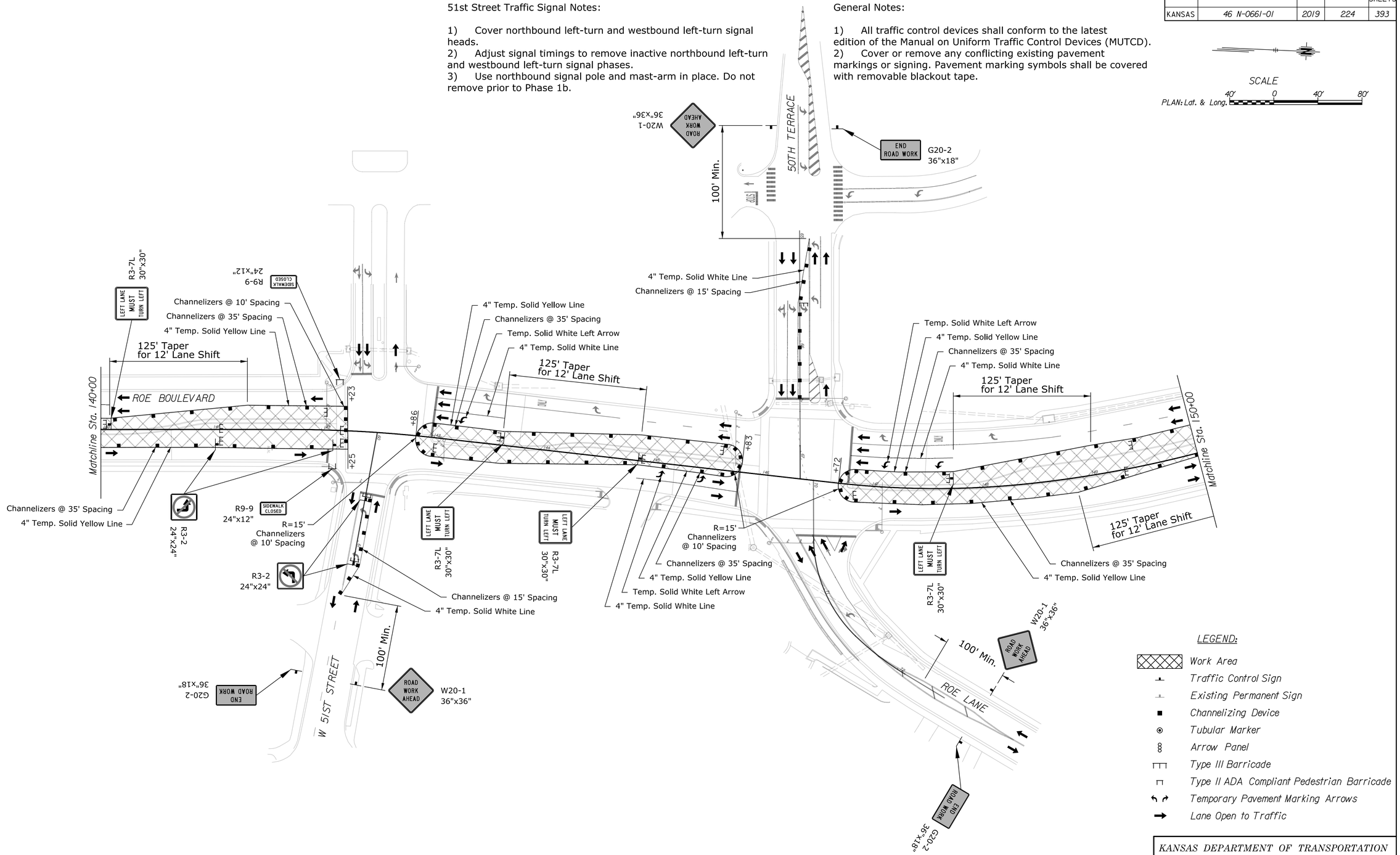
SCALE
40' 0 40' 80'
PLAN: Lat. & Long.

51st Street Traffic Signal Notes:

1) Cover northbound left-turn and westbound left-turn signal heads.
2) Adjust signal timings to remove inactive northbound left-turn and westbound left-turn signal phases.
3) Use northbound signal pole and mast-arm in place. Do not remove prior to Phase 1b.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IA
STA. 140+00 TO STA. 150+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:04
Drawn By : lrosenbaum
File : 13668T5406.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 225 | 393 |

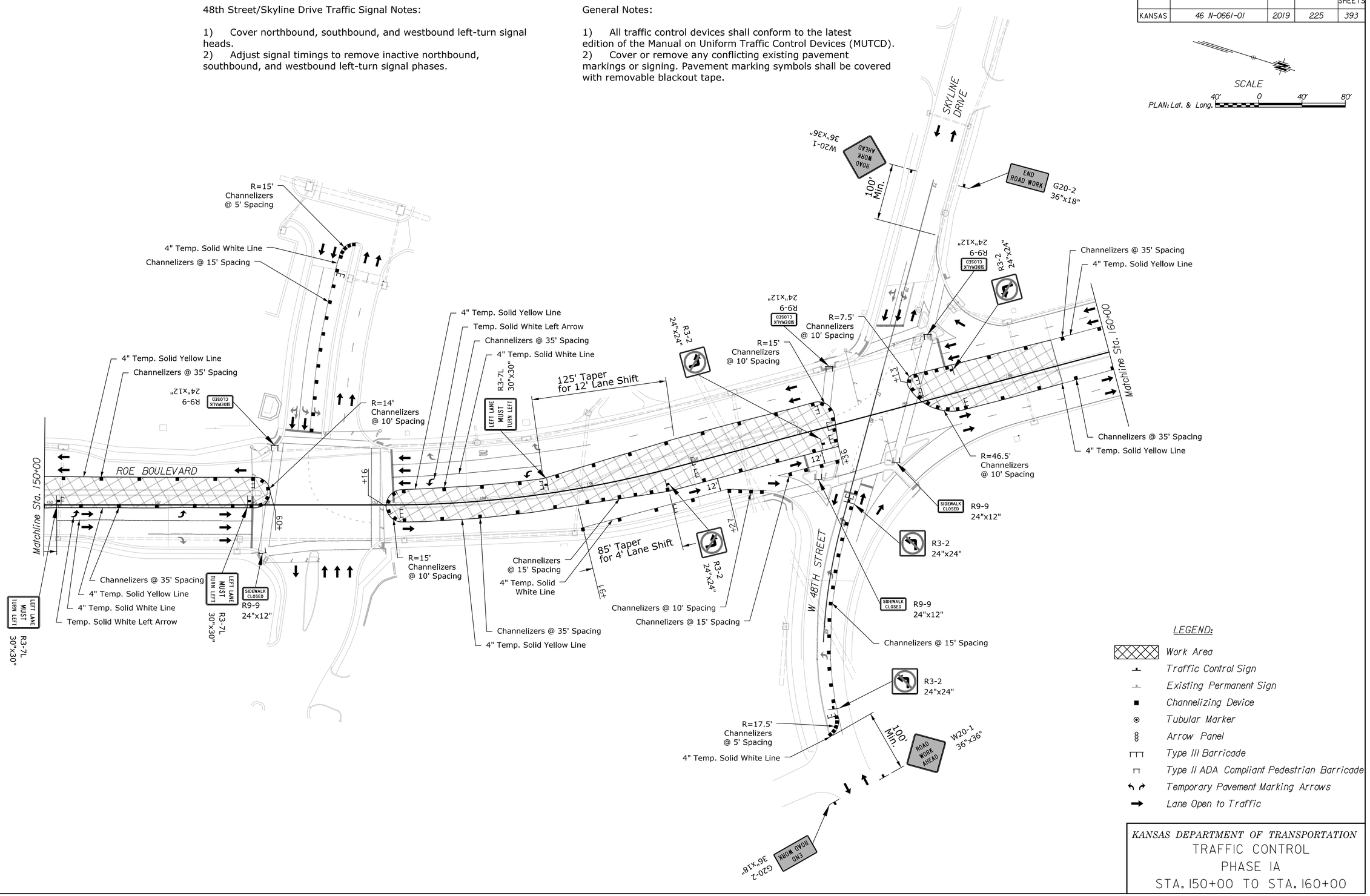
48th Street/Skyline Drive Traffic Signal Notes:

1) Cover northbound, southbound, and westbound left-turn signal heads.
2) Adjust signal timings to remove inactive northbound, southbound, and westbound left-turn signal phases.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IA
STA. 150+00 TO STA. 160+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

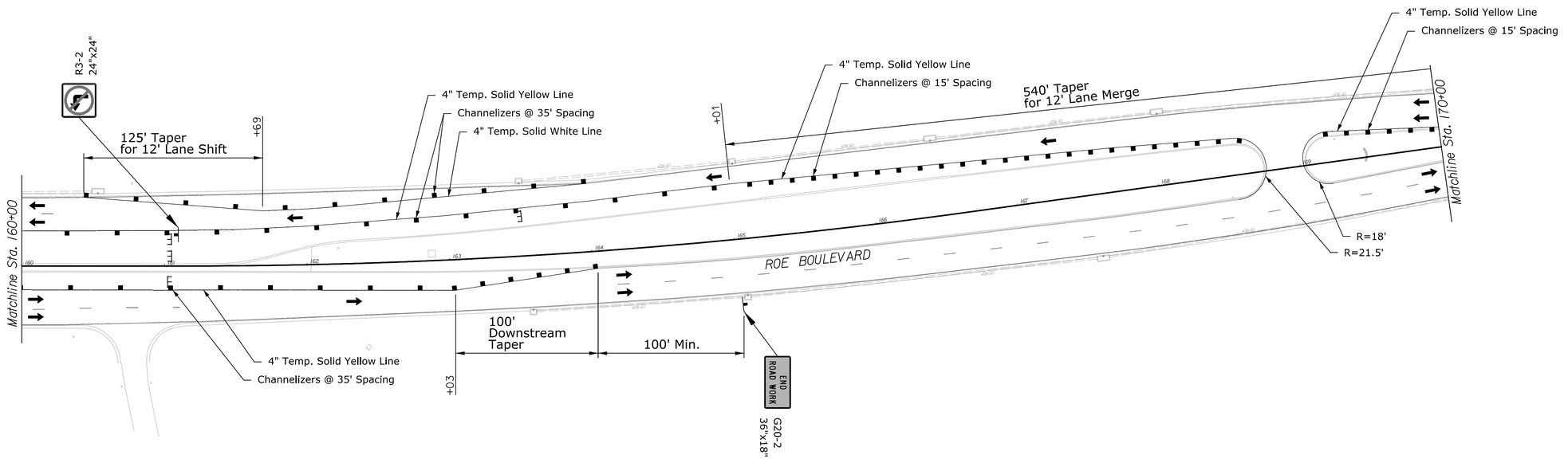
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File : 13668TS407.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 226 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IA
STA. 160+00 TO STA. 170+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

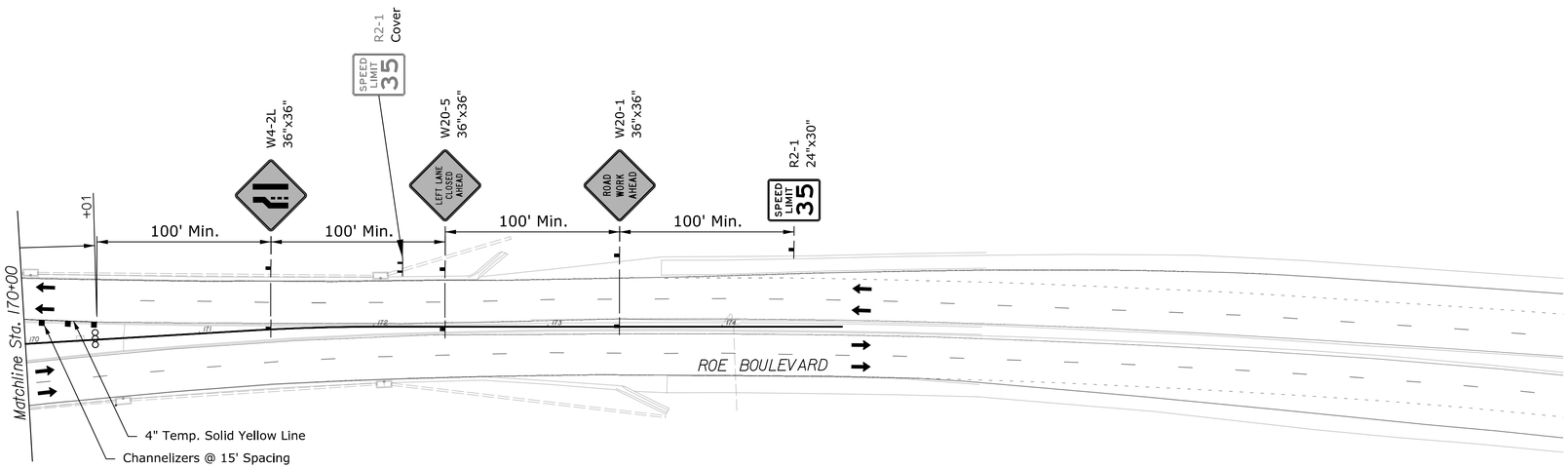
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Drawn By : lrosenbaum
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 227 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IA
STA. 170+00 TO STA. 179+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

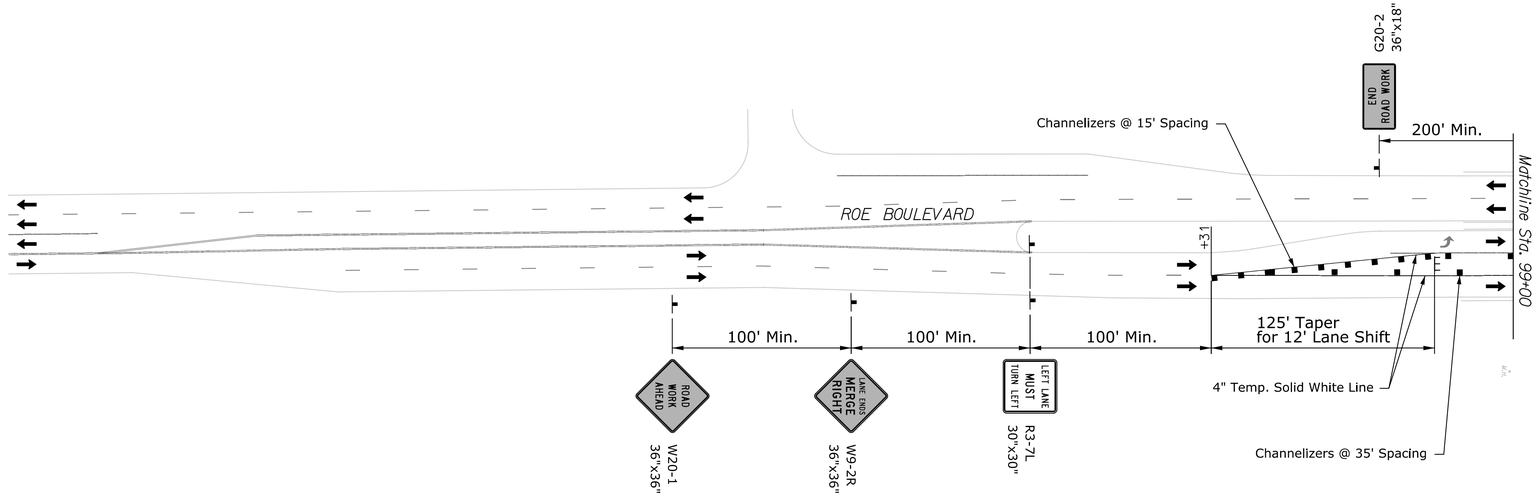
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Drawn By: : lrosenbaum
File : 136681T5409.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 228 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IB
STA. 90+00 TO STA. 99+00

| BY | DATE |
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REFERENCES CHECKED

Plotted :25-APR-2019 13:04
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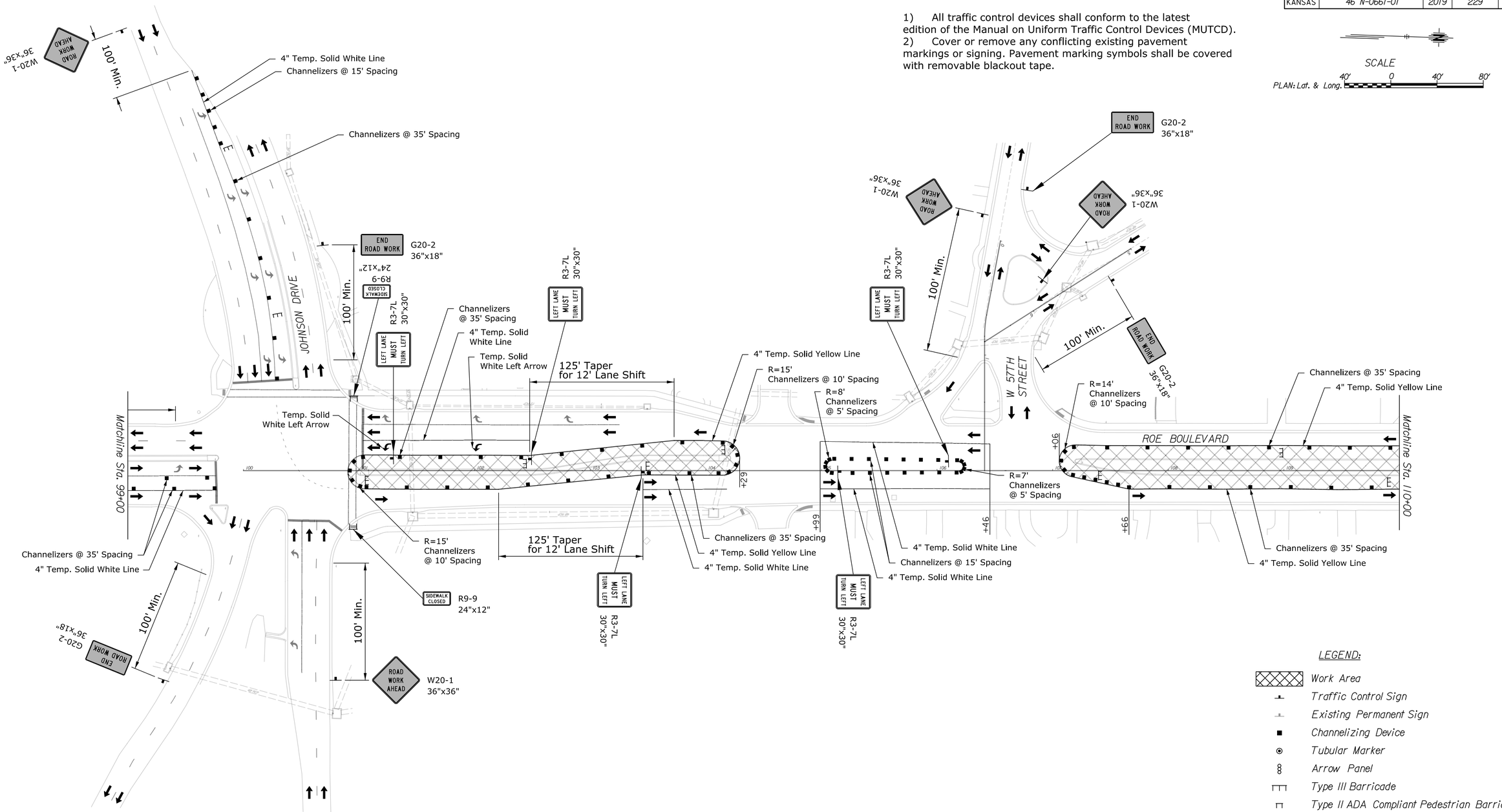
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 229 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IB
STA. 99+00 TO STA. 110+00

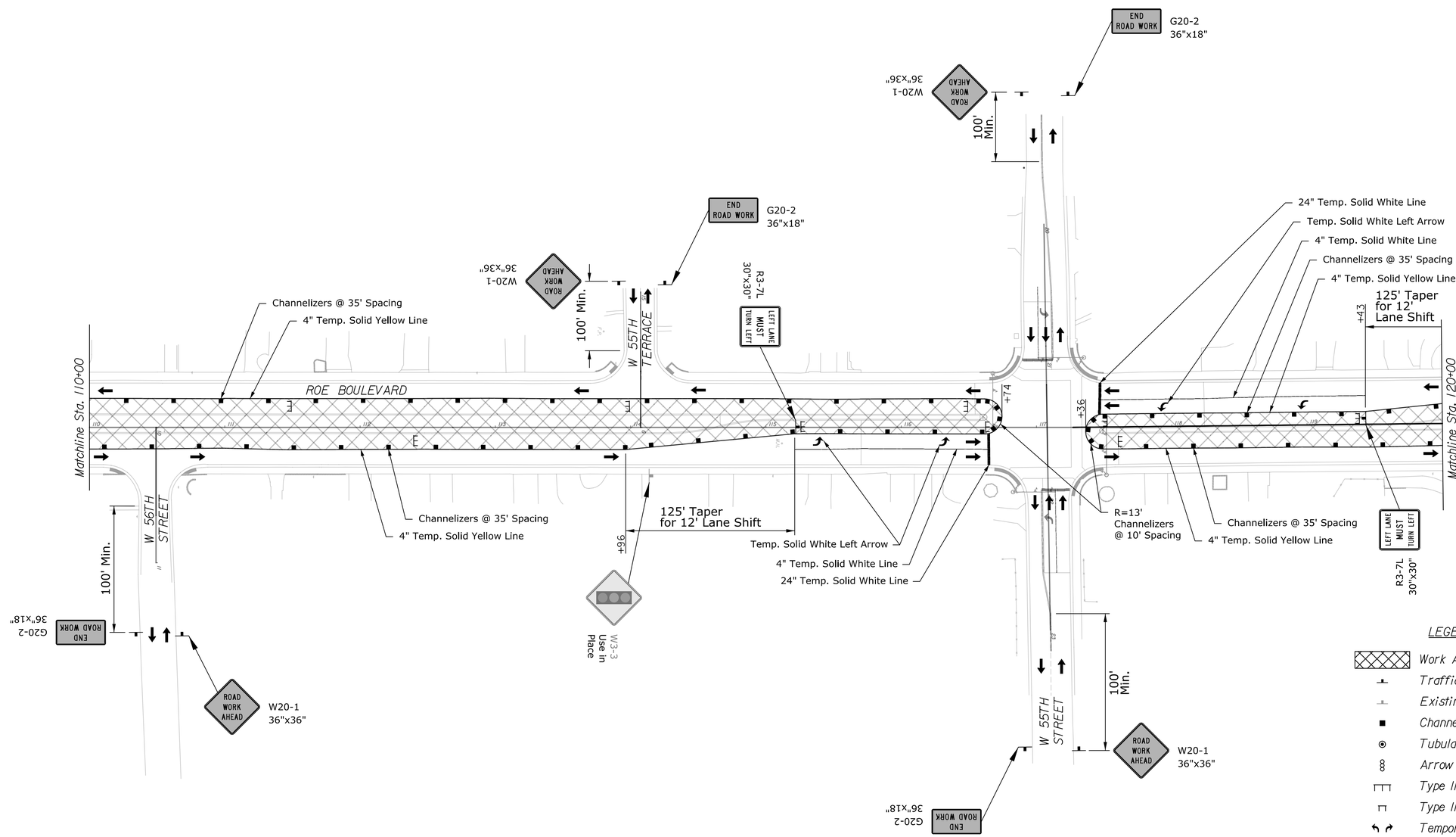
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 230 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long.
40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IB
STA. 110+00 TO STA. 120+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

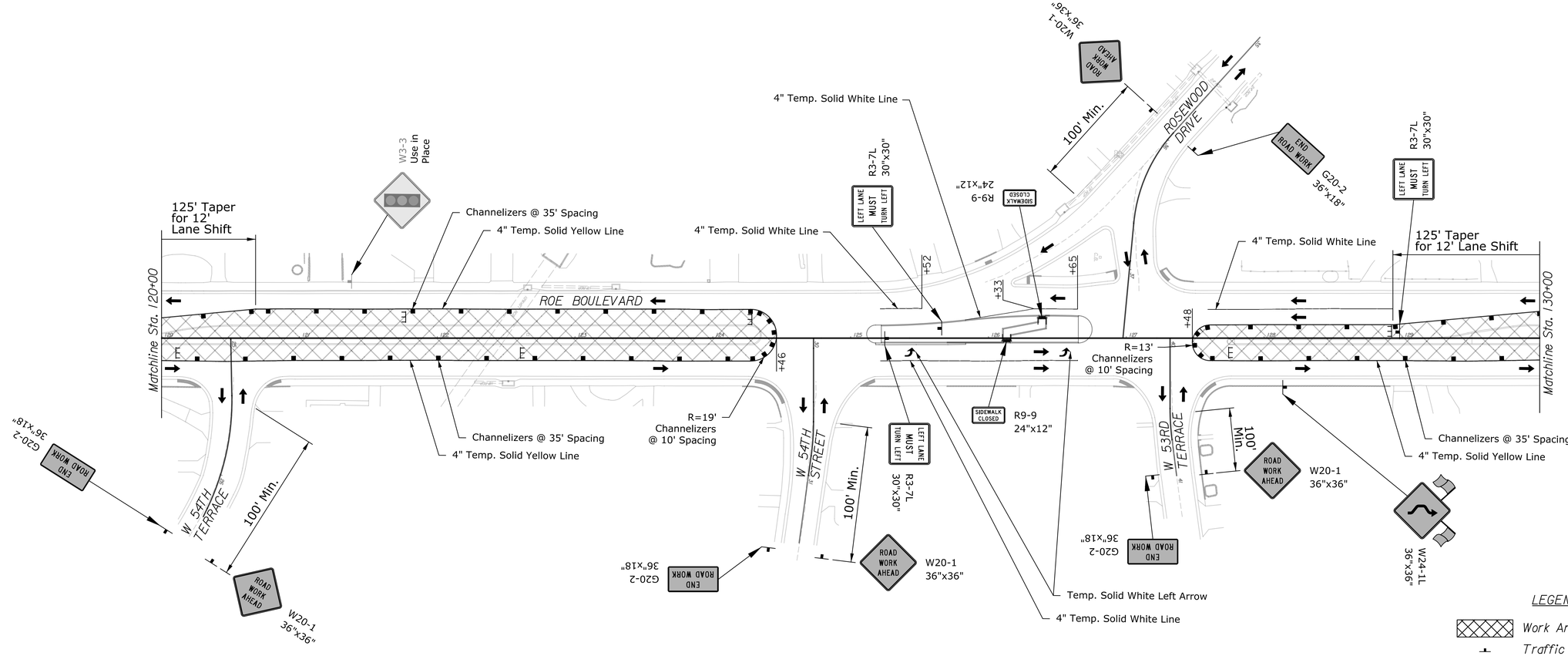
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 231 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IB
STA. 120+00 TO STA. 130+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

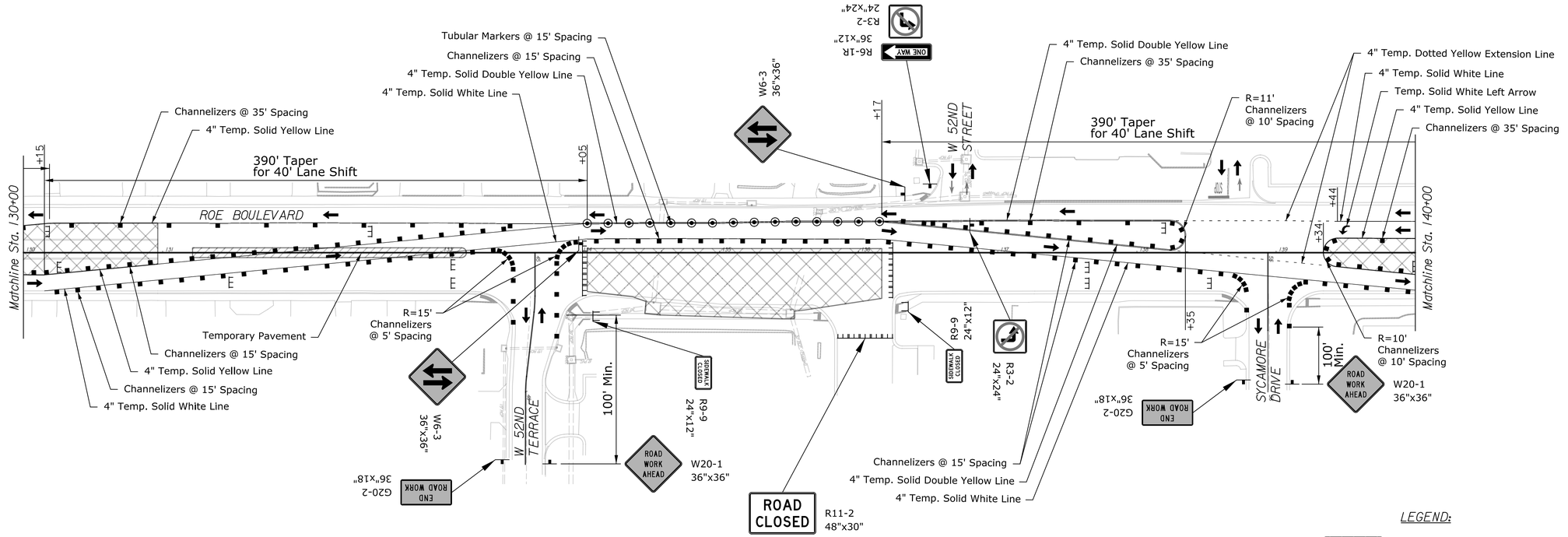
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 232 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IB
STA. 130+00 TO STA. 140+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:05
Drawn By: Irosenbaum
File : 136681T5415.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 233 | 393 |

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.

51st Street Traffic Signal Notes:

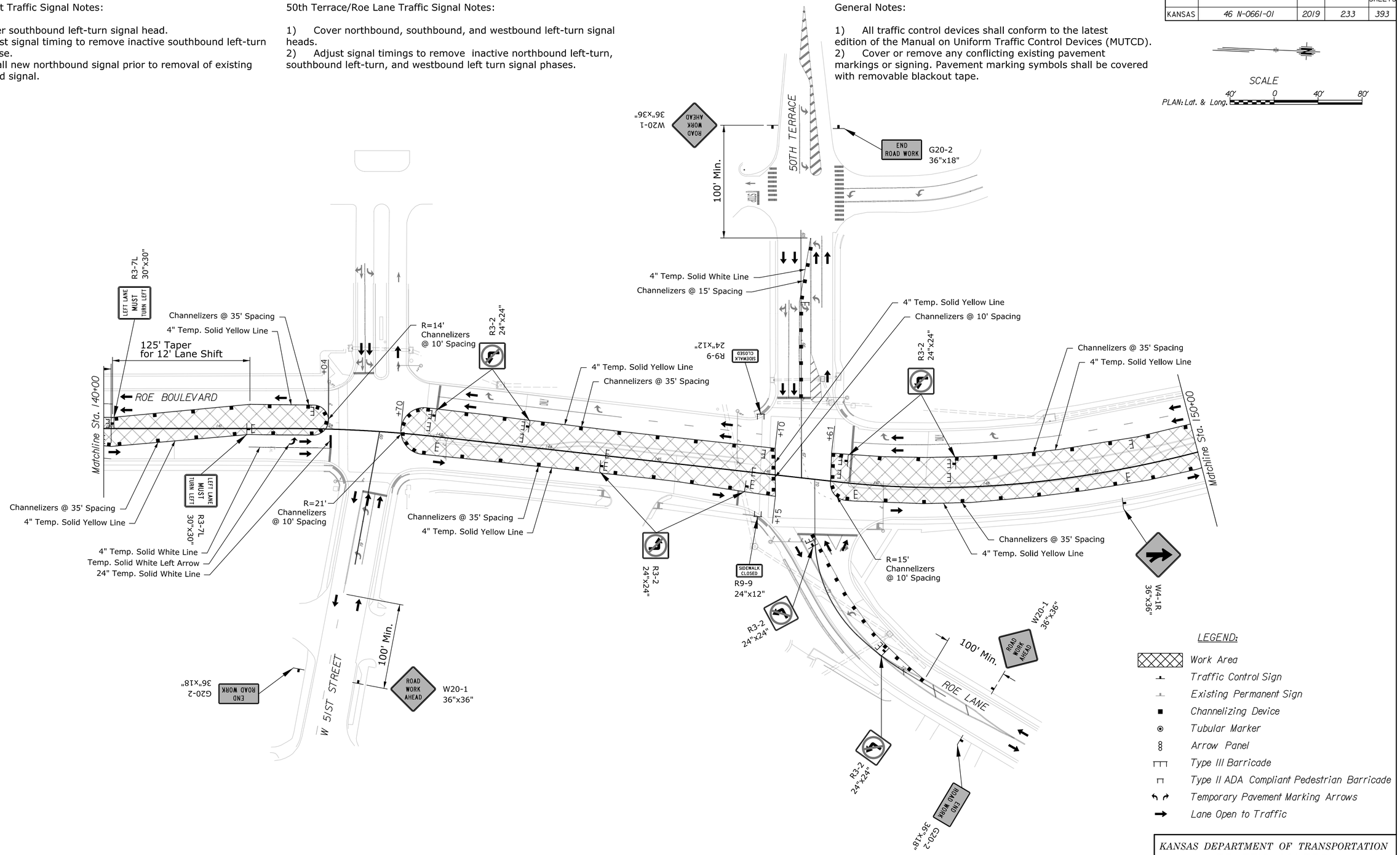
1) Cover southbound left-turn signal head.
2) Adjust signal timing to remove inactive southbound left-turn signal phase.
3) Install new northbound signal prior to removal of existing northbound signal.

50th Terrace/Roe Lane Traffic Signal Notes:

1) Cover northbound, southbound, and westbound left-turn signal heads.
2) Adjust signal timings to remove inactive northbound left-turn, southbound left-turn, and westbound left turn signal phases.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IB
STA. 140+00 TO STA. 150+00

| DATE | BY | REFERENCES NOTED |
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| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:05
Drawn By : lrosenbaum
File : 1366815416.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 234 | 393 |

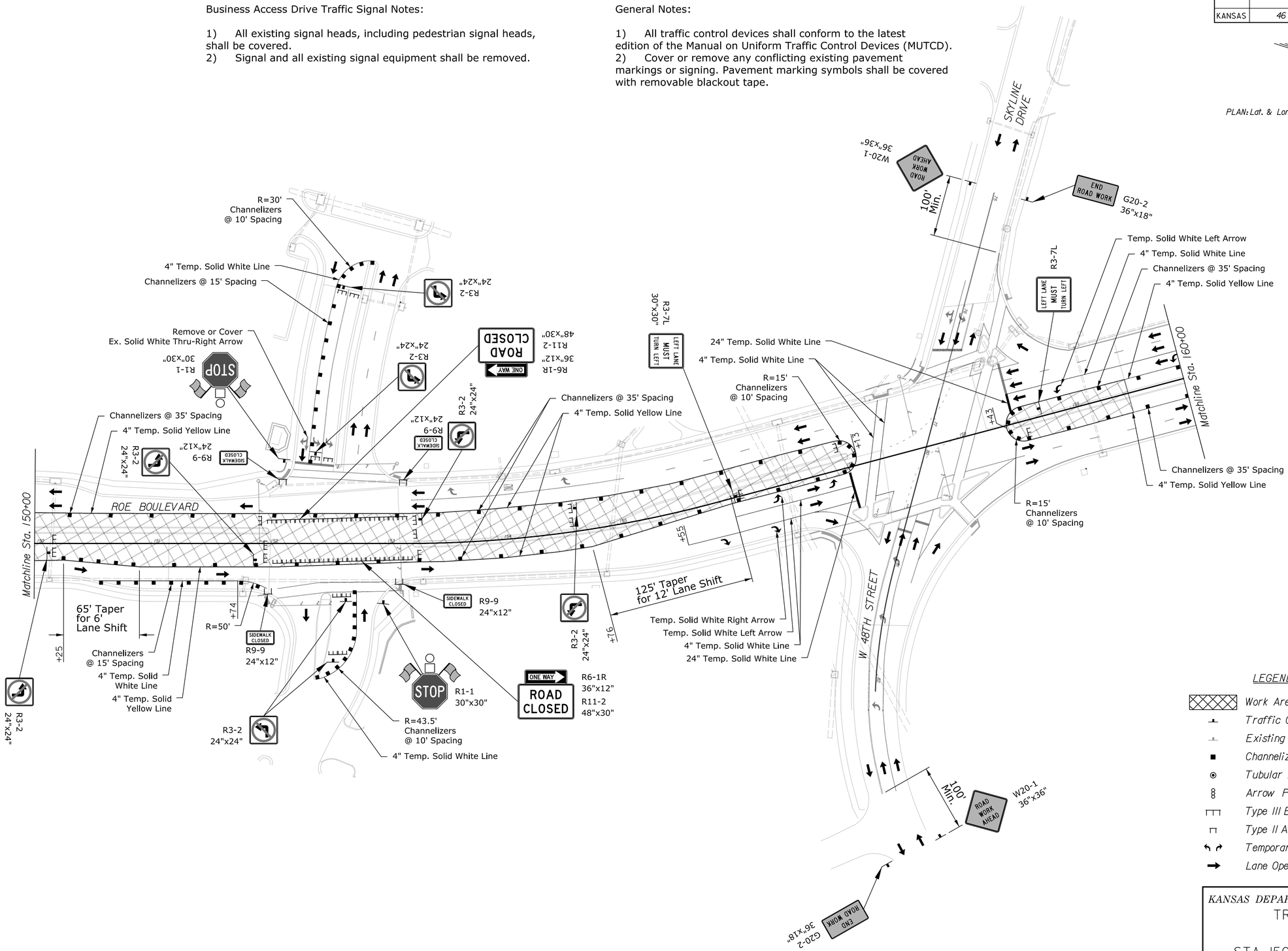
Business Access Drive Traffic Signal Notes:

1) All existing signal heads, including pedestrian signal heads, shall be covered.
2) Signal and all existing signal equipment shall be removed.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IB
STA. 150+00 TO STA. 160+00

| DATE | BY | REFERENCES NOTED |
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| | | REFERENCES CHECKED |

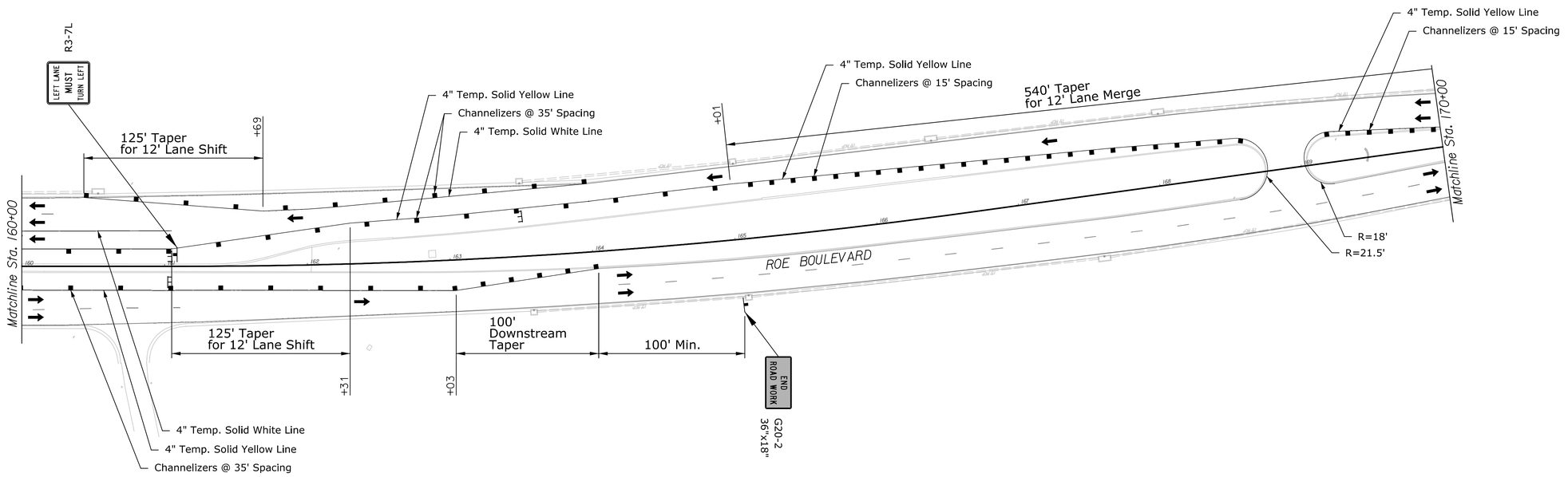
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Drawn By : lrosenbaum
File : 13668T5417.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 235 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IB
STA. 160+00 TO STA. 170+00

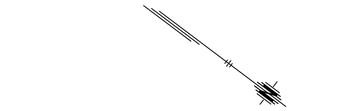
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| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

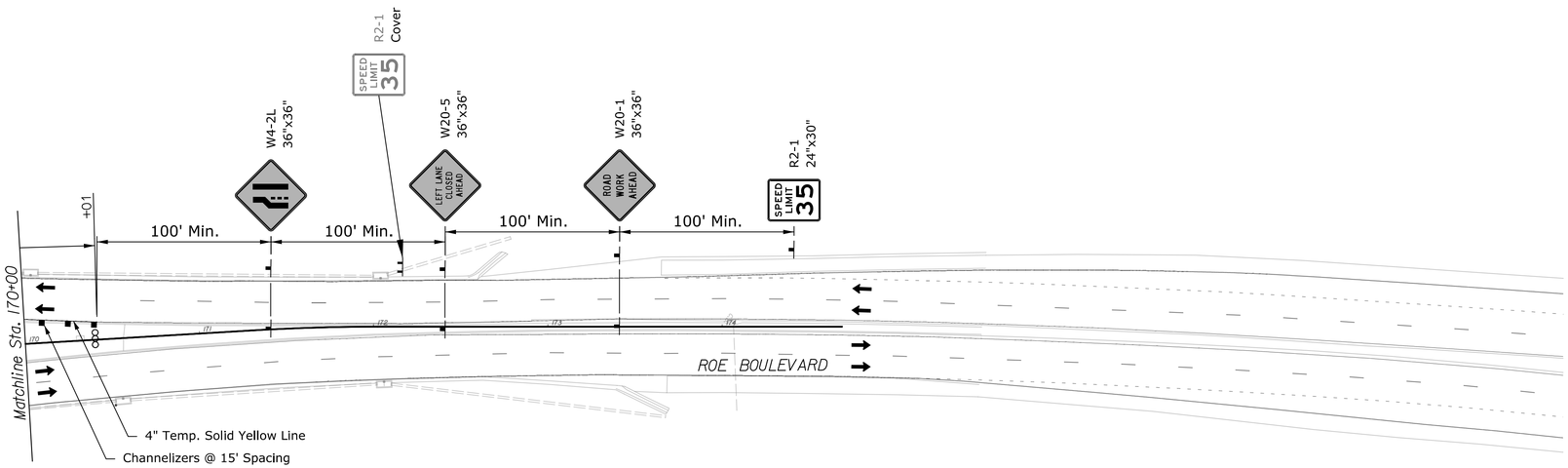
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Drawn By : lrosenbaum
File : 13668T5418.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 236 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.




*LEGEND:*

- *Work Area*
- *Traffic Control Sign*
- *Existing Permanent Sign*
- *Channelizing Device*
- *Tubular Marker*
- *Arrow Panel*
- *Type III Barricade*
- *Type II ADA Compliant Pedestrian Barricade*
- *Temporary Pavement Marking Arrows*
- *Lane Open to Traffic*

*KANSAS DEPARTMENT OF TRANSPORTATION*

TRAFFIC CONTROL
PHASE IB
STA. 170+00 TO STA. 179+00

| DATE | BY | |
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| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

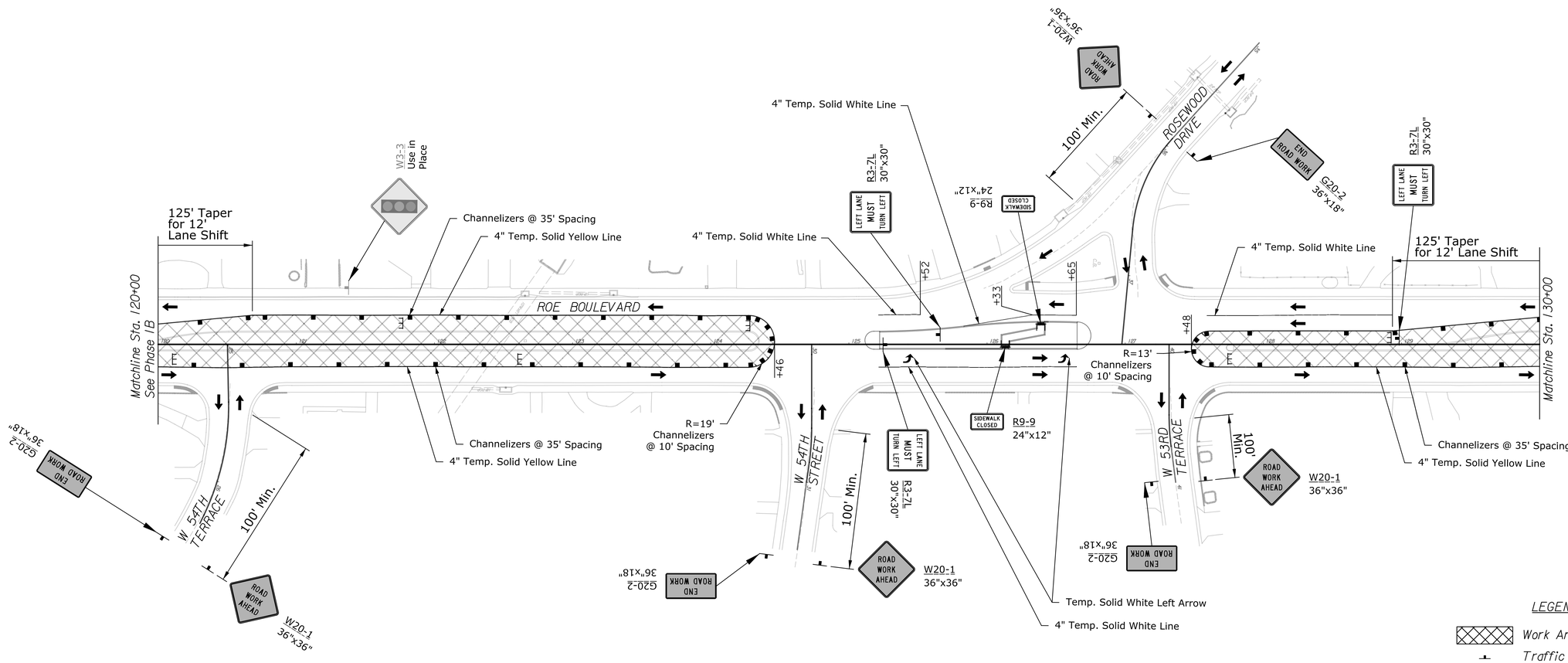
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File: 136681T5419.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 237 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IC
STA. 120+00 TO STA. 130+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

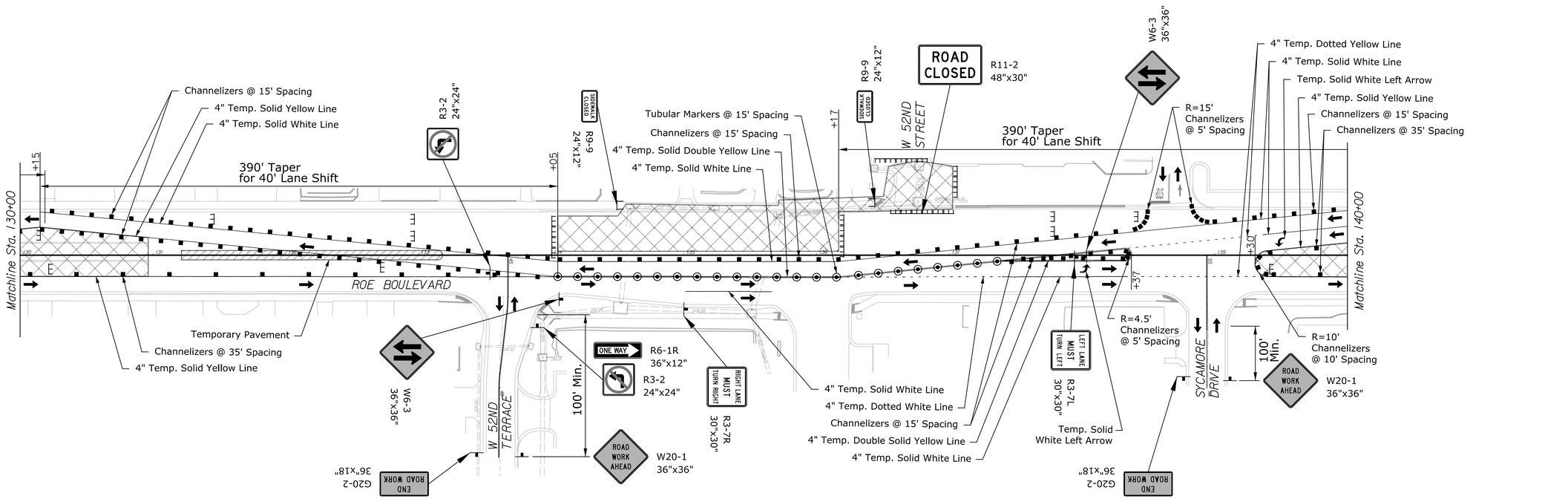
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 238 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IC
STA. 130+00 TO STA. 140+00

| DATE | BY | |
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| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:05
Drawn By: : lrosenbaum
File : 136681 5425.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 239 | 393 |

51st Street Traffic Signal Notes:

1) Cover southbound left-turn signal head.
2) Adjust signal timing to remove inactive southbound left-turn signal phase.
3) Install new northbound signal prior to removal of existing northbound signal.

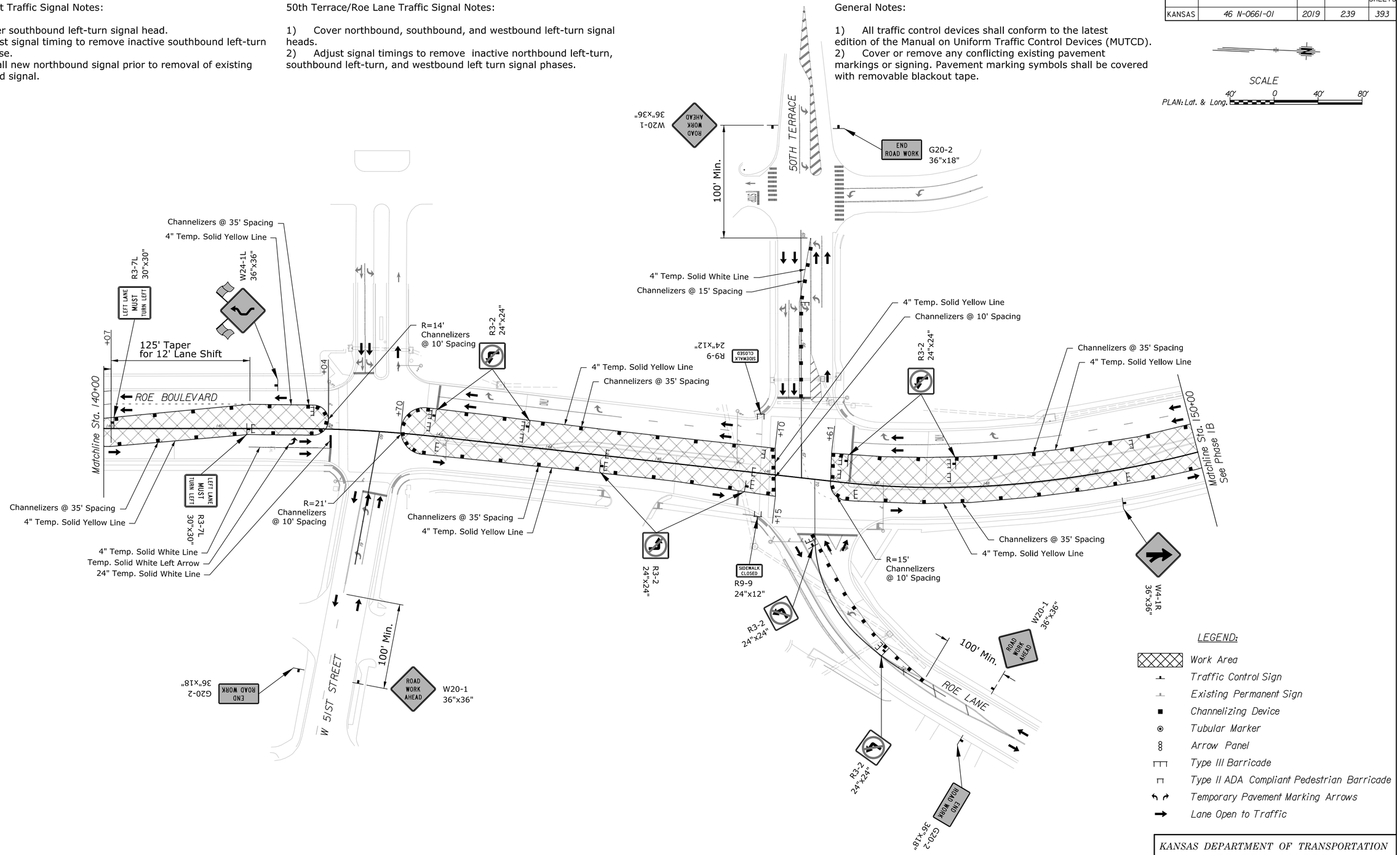
50th Terrace/Roe Lane Traffic Signal Notes:

1) Cover northbound, southbound, and westbound left-turn signal heads.
2) Adjust signal timings to remove inactive northbound left-turn, southbound left-turn, and westbound left turn signal phases.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE IC
STA. 140+00 TO STA. 150+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

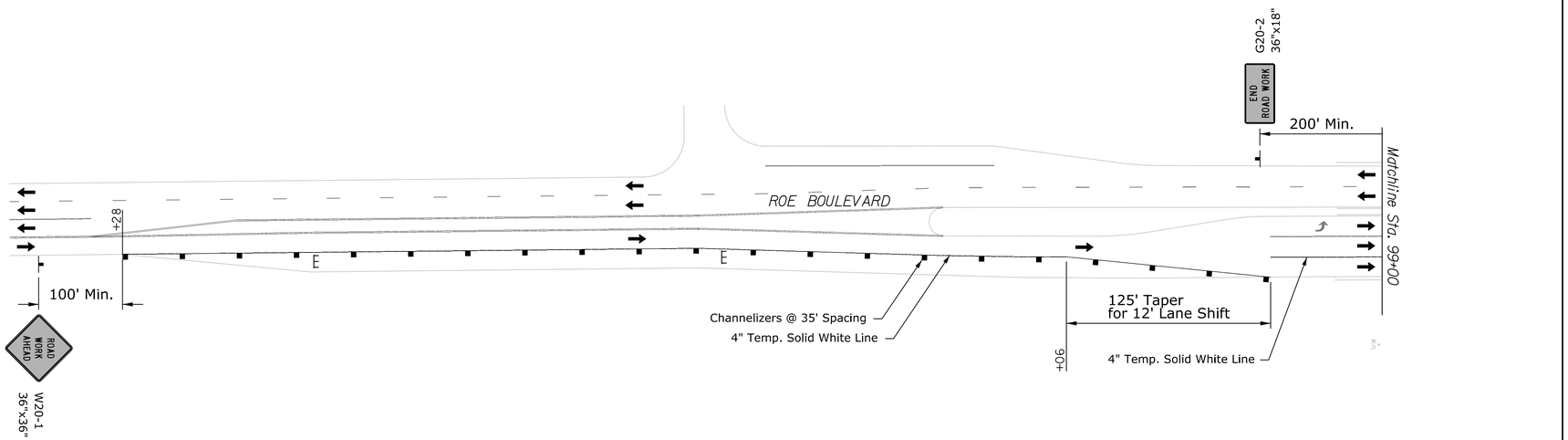
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File : 1366815426.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 240 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2A
STA. 90+00 TO STA. 99+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:05
Drawn By : lrosenbaum
File : 136815431.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 241 | 393 |

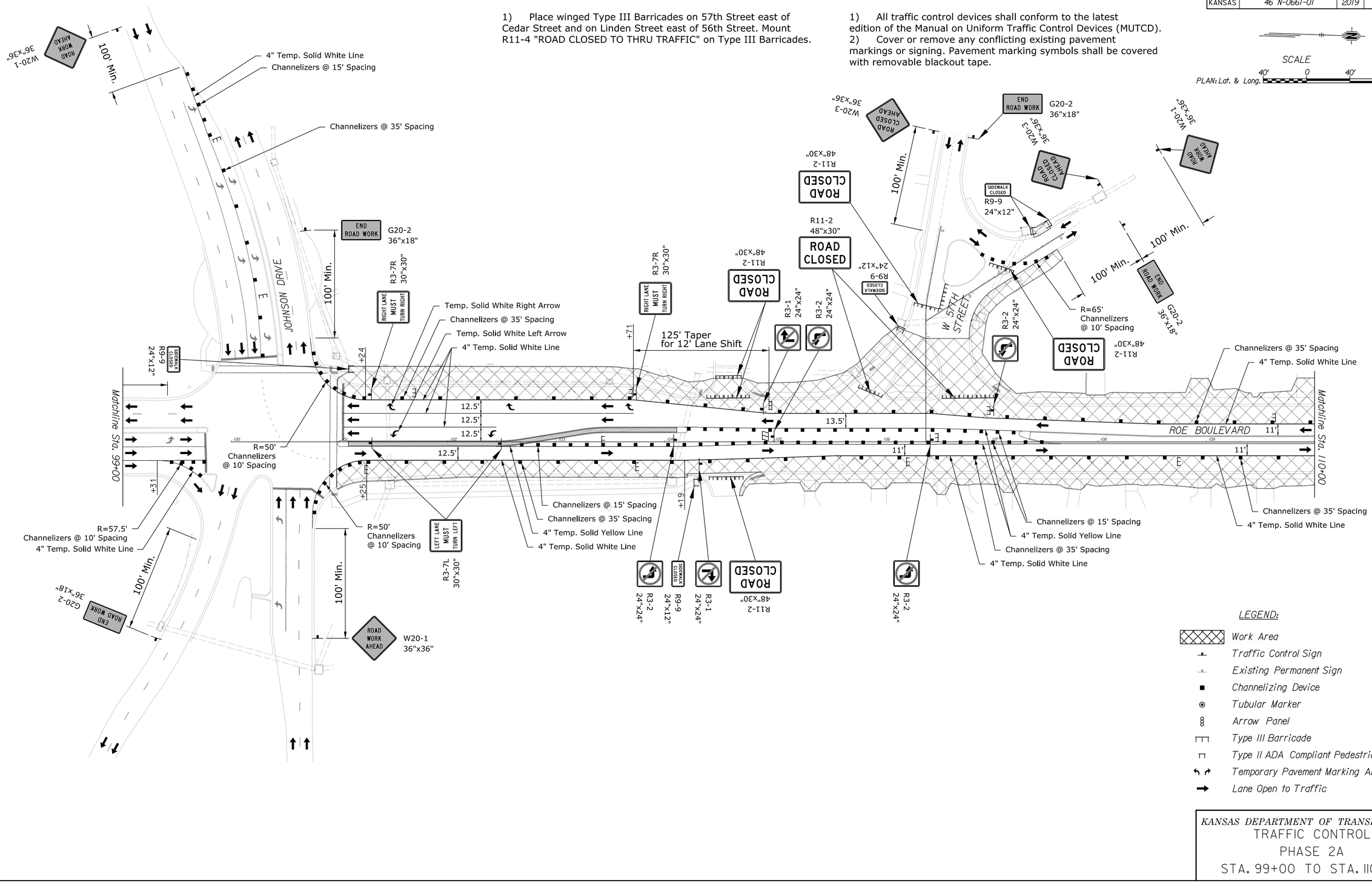
Traffic Control Notes:

1) Place winged Type III Barricades on 57th Street east of Cedar Street and on Linden Street east of 56th Street. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




*LEGEND:*

- *Work Area*
- *Traffic Control Sign*
- *Existing Permanent Sign*
- *Channelizing Device*
- *Tubular Marker*
- *Arrow Panel*
- *Type III Barricade*
- *Type II ADA Compliant Pedestrian Barricade*
- *Temporary Pavement Marking Arrows*
- *Lane Open to Traffic*

*KANSAS DEPARTMENT OF TRANSPORTATION*
TRAFFIC CONTROL
PHASE 2A
STA. 99+00 TO STA. 110+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:05
Drawn By : lrosenbaum
File : 136681T5432.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 242 | 393 |

Traffic Control Notes:

1) Place winged Type III Barricades on 55th Street east of Linden Street and on 56th Street west of Granada Lane. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

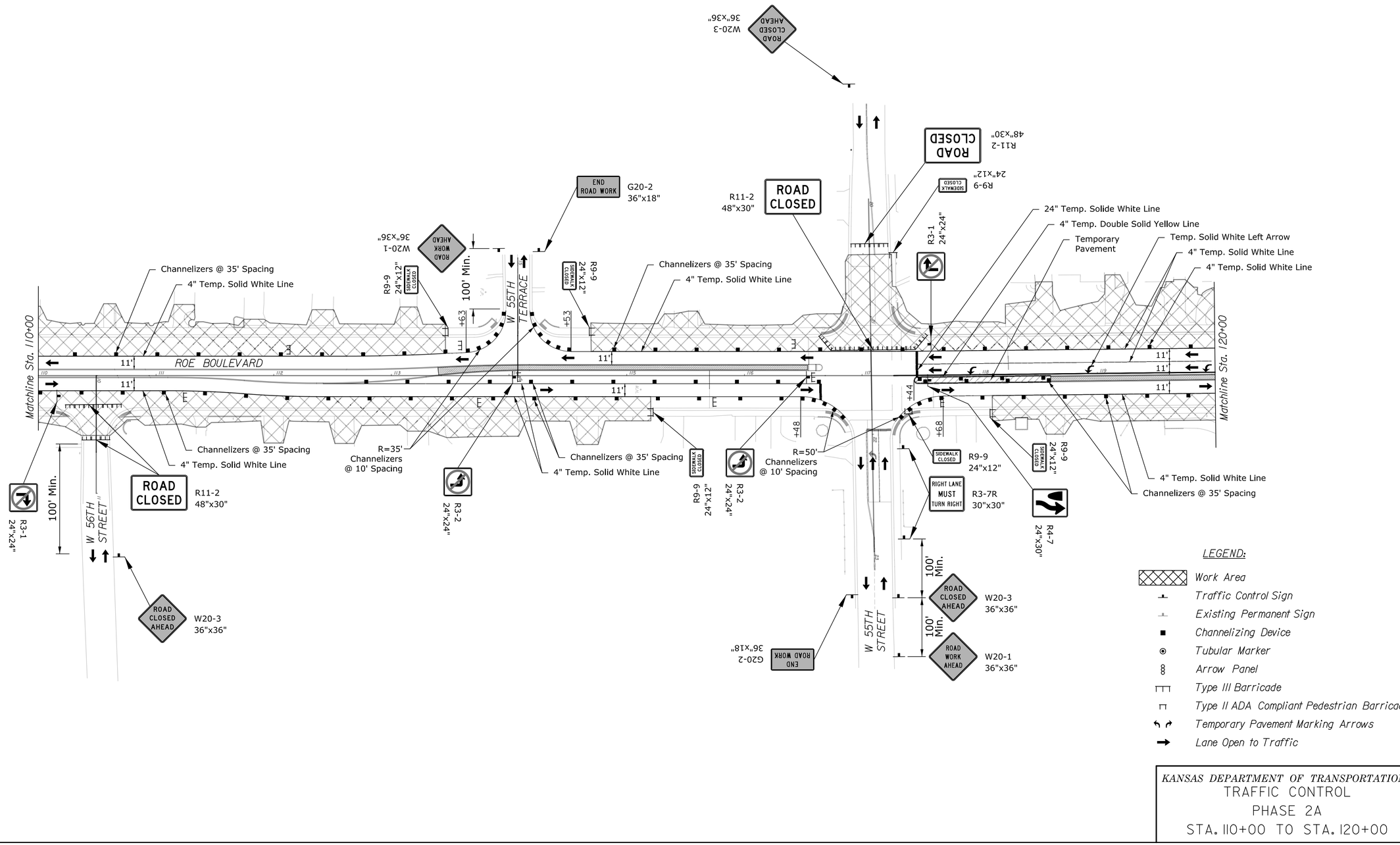
55th Street Traffic Signal Notes:

1) Cover all existing eastbound signal heads and existing northbound left-turn signal head.
2) Cover east-west pedestrian crossing signal heads.
3) Adjust signal timings to remove inactive eastbound phase, northbound left-turn phase, and east-west pedestrian crossing phase.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2A
STA. 110+00 TO STA. 120+00

| BY | DATE |
|---|---|
| REFERENCES NOTED | |
| REFERENCES CHECKED | |

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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 243 | 393 |

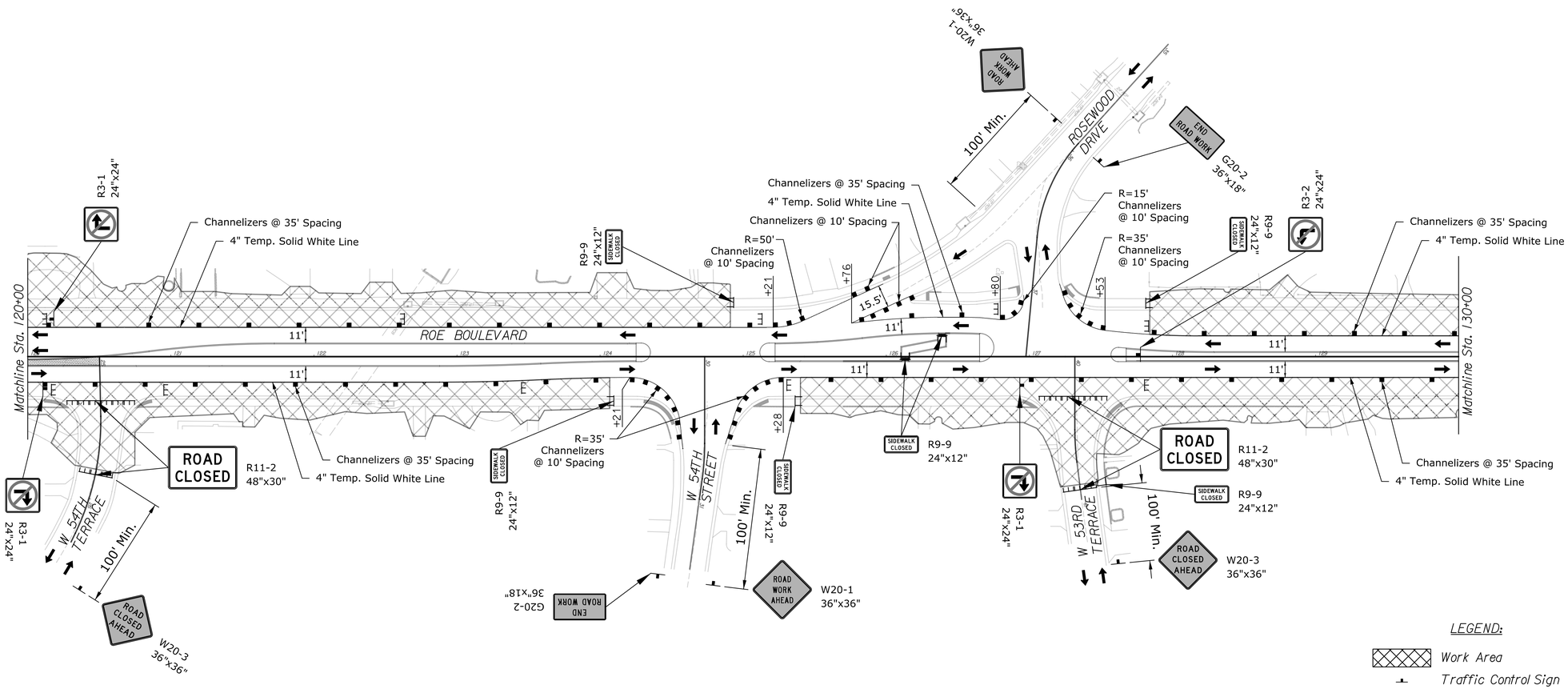
Traffic Control Notes:

1) Place winged Type III Barricades on 54th Terrace west of Granada Lane and on 53rd Terrace west of Buena Vista Street. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2A
STA. 120+00 TO STA. 130+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

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Drawn By : lrosenbaum
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 244 | 393 |

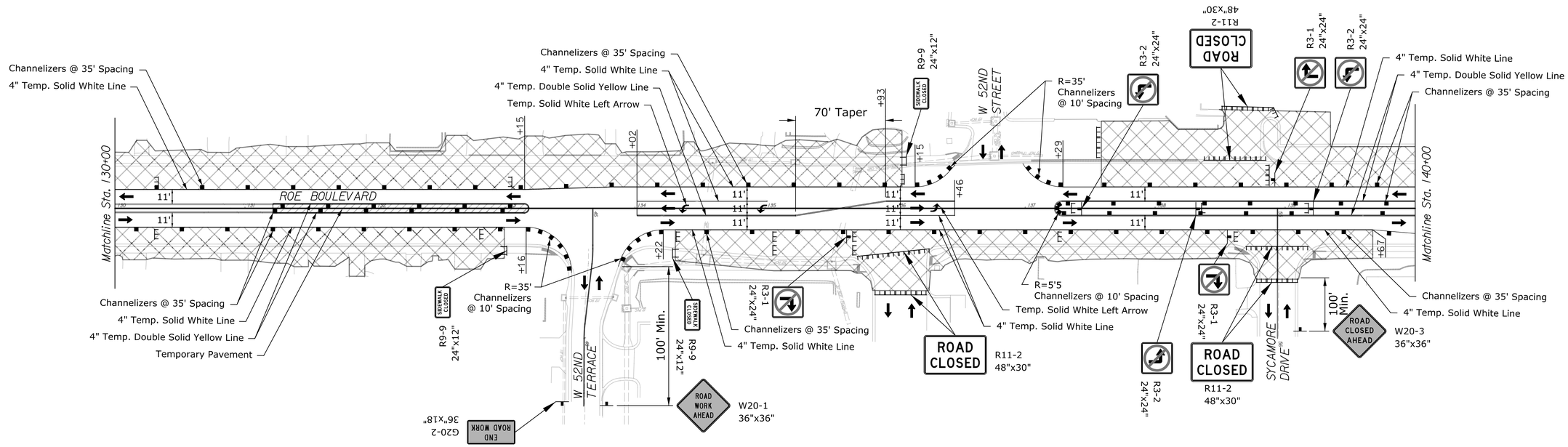
Traffic Control Notes:

1) Place winged Type III Barricades on Sycamore Drive west of Granada Lane. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2A
STA. 130+00 TO STA. 140+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:05
Drawn By : Irosenbaum
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 245 | 393 |

50th Terrace/Roe Lane Traffic Signal Notes:

1) All existing signal heads, including pedestrian signal heads, shall be covered.
2) Signal shall be turned off.

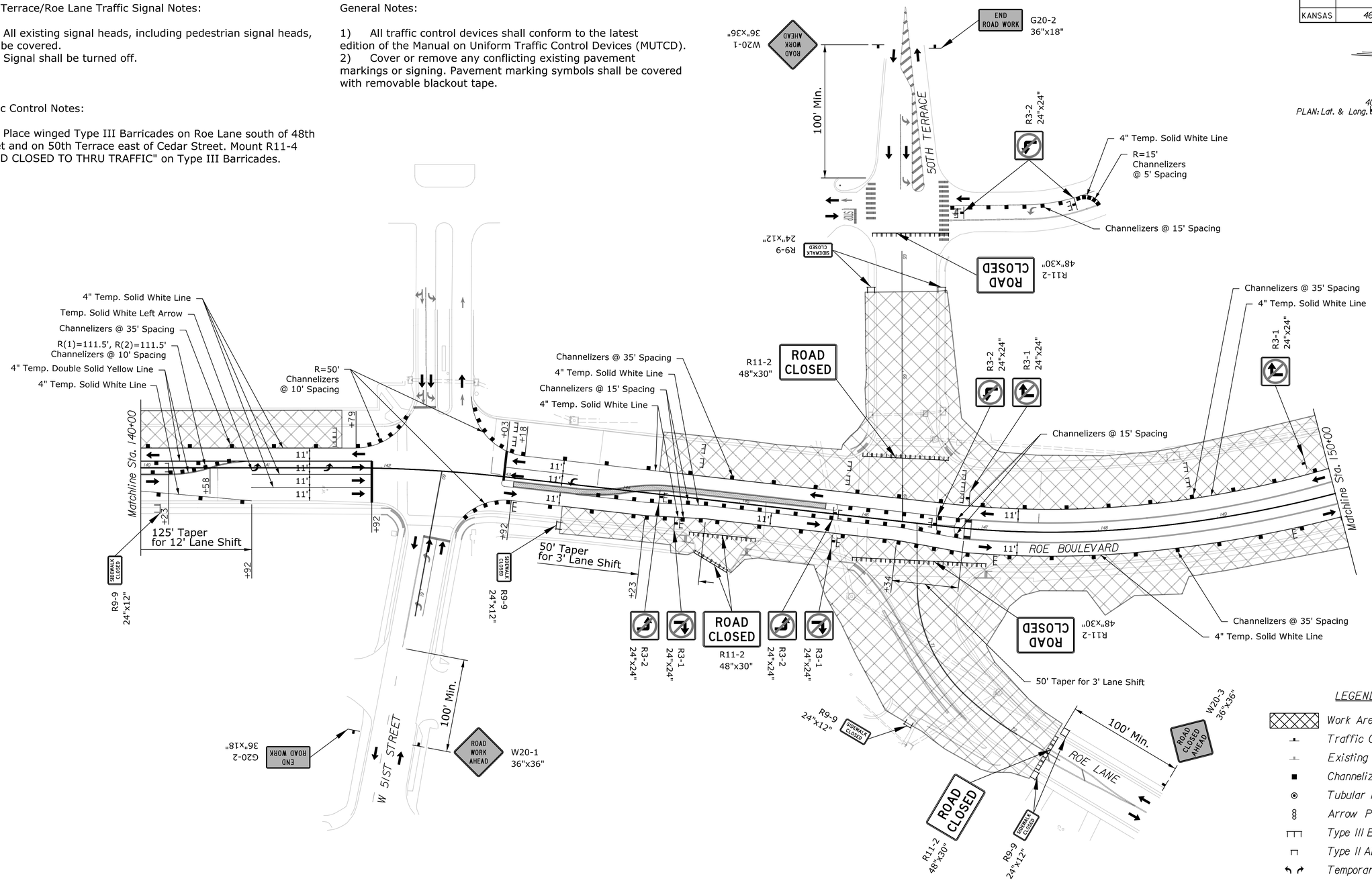
Traffic Control Notes:

1) Place winged Type III Barricades on Roe Lane south of 48th Street and on 50th Terrace east of Cedar Street. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:
- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2A
STA. 140+00 TO STA. 150+00

DATE | BY
REFERENCES NOTED
REFERENCES CHECKED

Plotted : 25-APR-2019 13:05
Drawn By : Irosenbaum
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 246 | 393 |

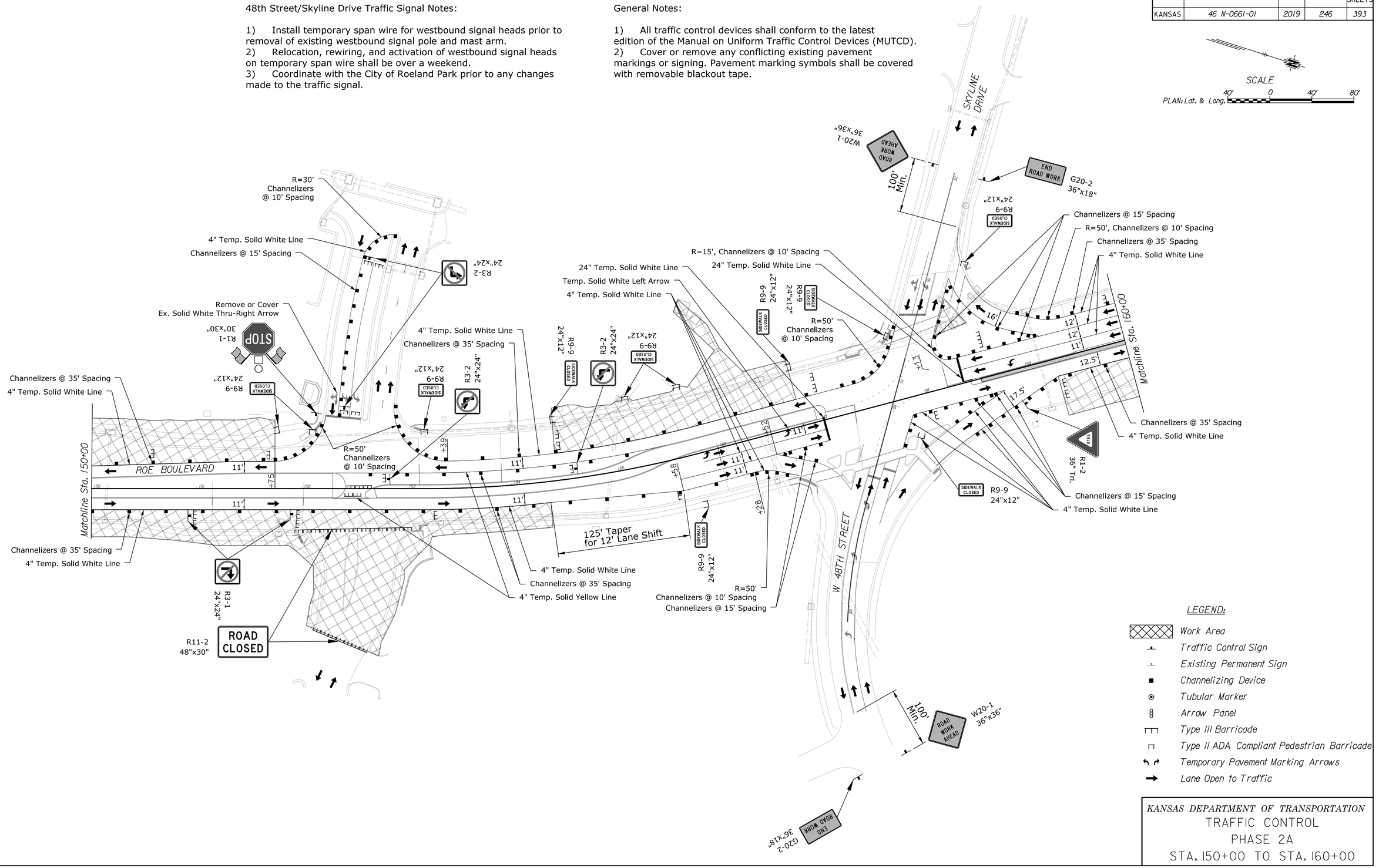
48th Street/Skyline Drive Traffic Signal Notes:

1) Install temporary span wire for westbound signal heads prior to removal of existing westbound signal pole and mast arm.
2) Relocation, rewiring, and activation of westbound signal heads on temporary span wire shall be over a weekend.
3) Coordinate with the City of Roeland Park prior to any changes made to the traffic signal.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2A
STA. 150+00 TO STA. 160+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

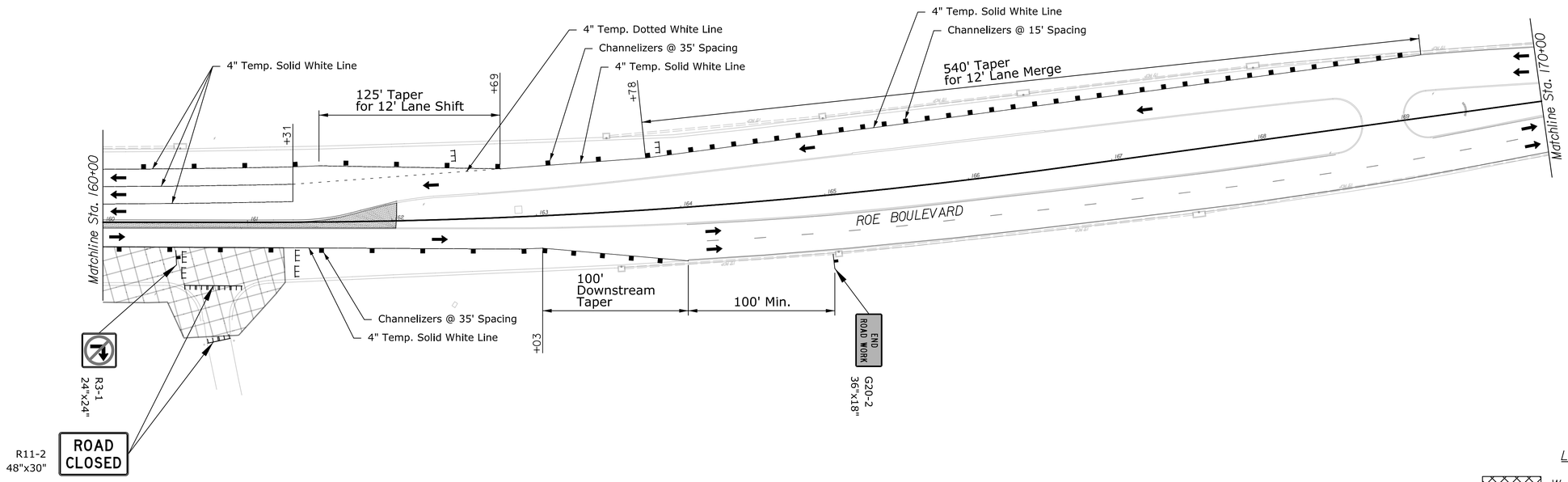
Plotted : 25-APR-2019 13:05
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File : 136815437.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 247 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2A
STA. 160+00 TO STA. 170+00

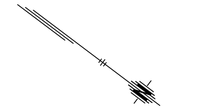
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| | | REFERENCES NOTED |
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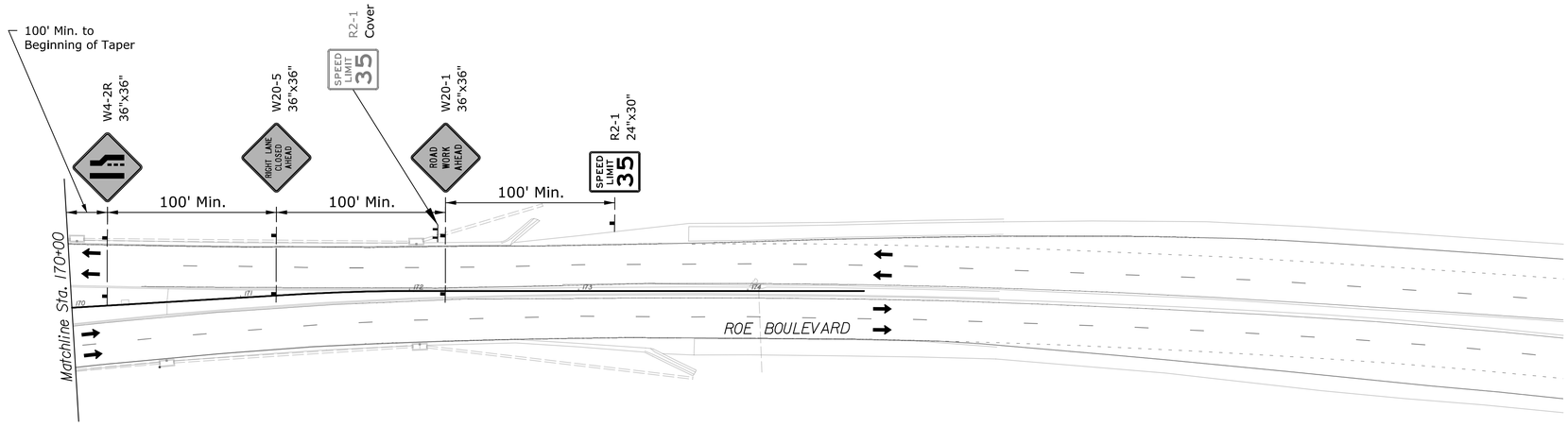
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 248 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.



SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2A
STA. 170+00 TO STA. 179+00

| DATE | BY | |
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| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

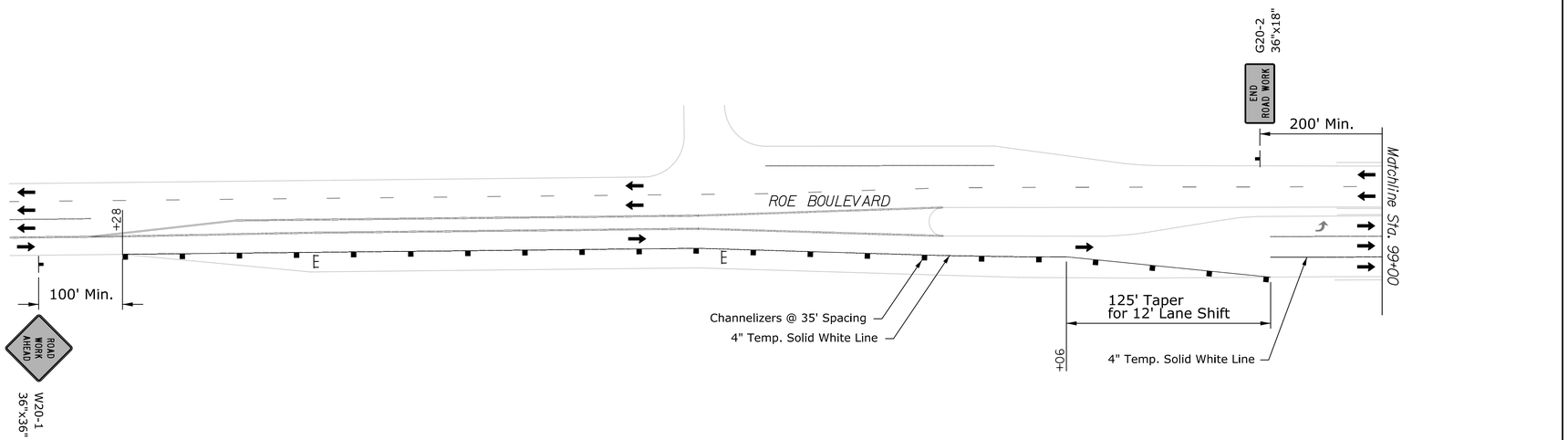
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Drawn By : lrosenbaum
File : 13668T5439.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 249 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2B
STA. 90+00 TO STA. 99+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

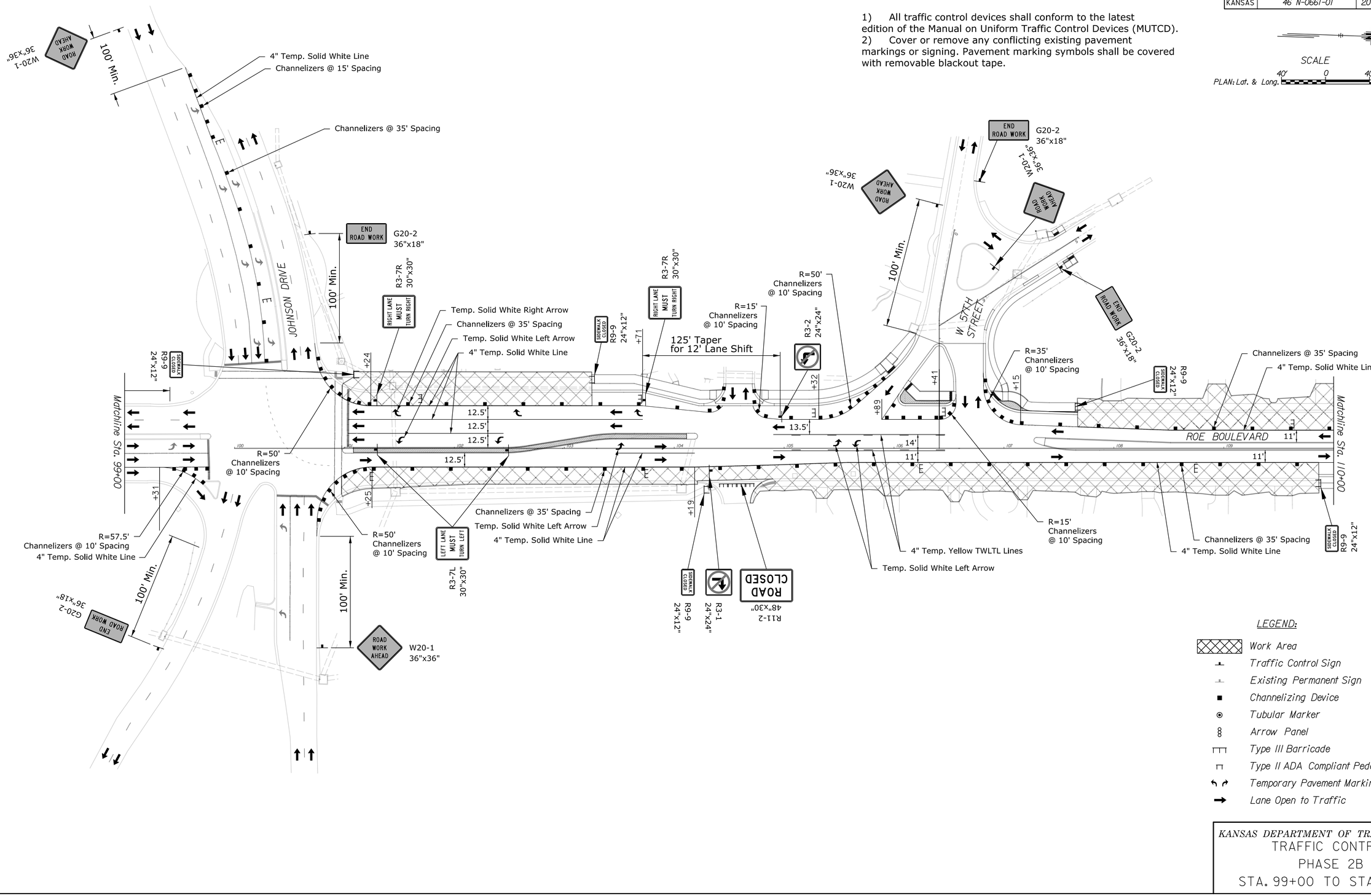
Plotted : 25-APR-2019 13:05
Drawn By : lrosenbaum
File : 1366T5441.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 250 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




*LEGEND:*

- *Work Area*
- *Traffic Control Sign*
- *Existing Permanent Sign*
- *Channelizing Device*
- *Tubular Marker*
- *Arrow Panel*
- *Type III Barricade*
- *Type II ADA Compliant Pedestrian Barricade*
- *Temporary Pavement Marking Arrows*
- *Lane Open to Traffic*

*KANSAS DEPARTMENT OF TRANSPORTATION*
TRAFFIC CONTROL
PHASE 2B
STA. 99+00 TO STA. 110+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:05
Drawn By : lrosenbaum
File : 136681T5442.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 251 | 393 |

Traffic Control Notes:

1) Place winged Type III Barricades on 55th Terrace east of Linden Street and on 55th Street west of Granada Lane. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

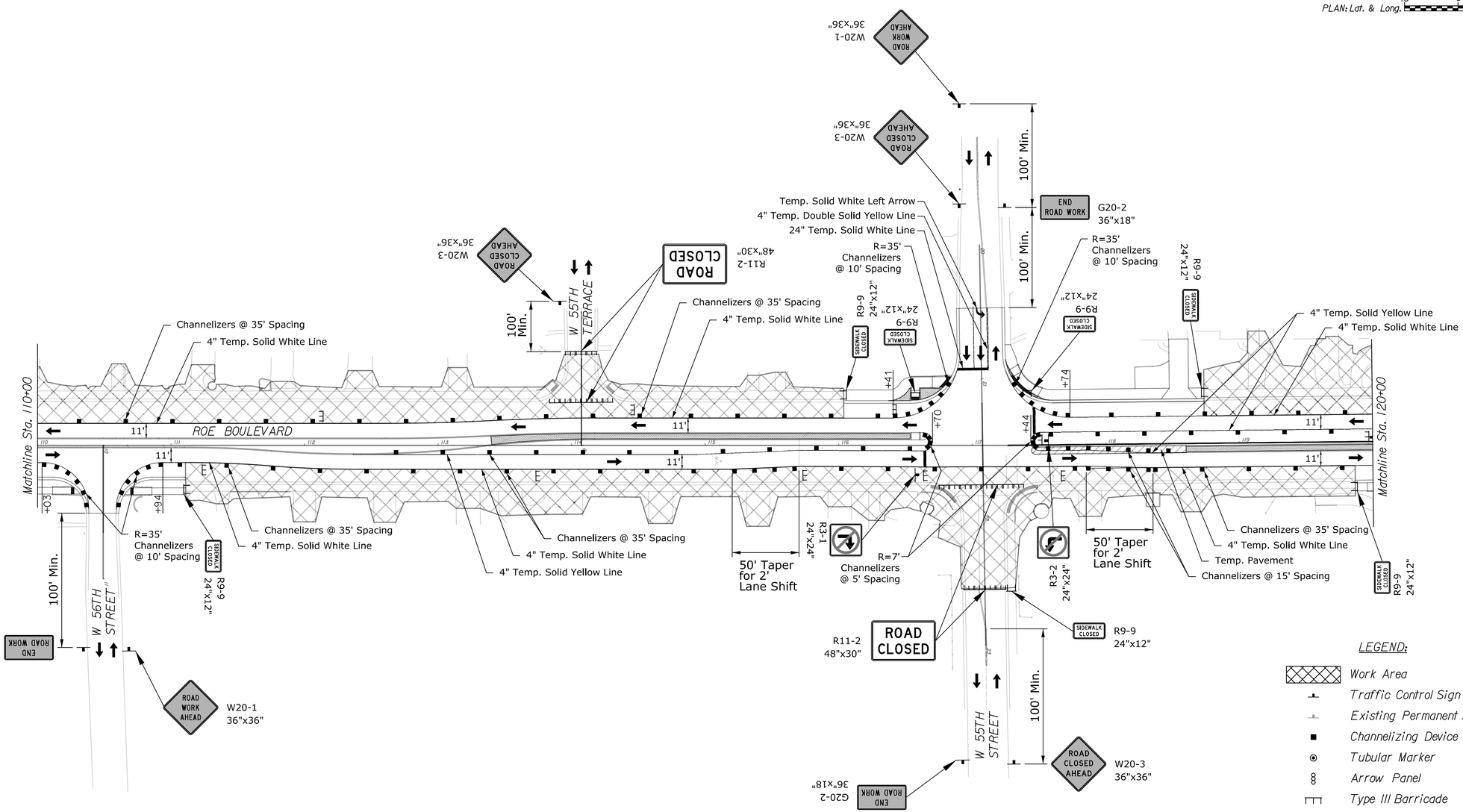
55th Street Traffic Signal Notes:

1) Cover all existing westbound signal heads and existing southbound left-turn signal head.
2) Cover east-west pedestrian crossing signal heads.
3) Adjust signal timings to remove inactive westbound phase, southbound left-turn phase, and east-west pedestrian crossing phase.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2B
STA. 110+00 TO STA. 120+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:05
Drawn By : lrosenbaum
File : 136681T5443.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 252 | 393 |

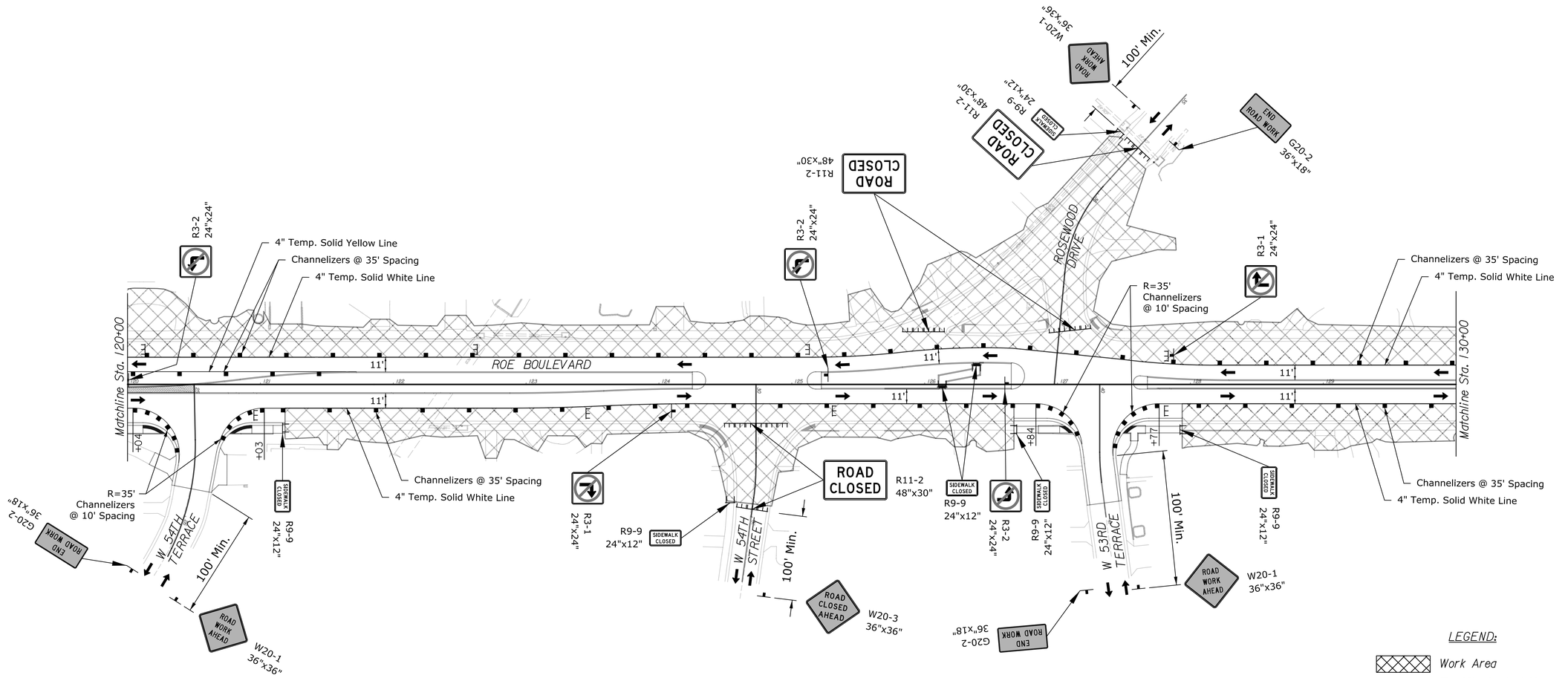
Traffic Control Notes:

1) Place winged Type III Barricades on 54th Street west of Buena Vista Street and on Rosewood Drive east of Linden Street. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2B
STA. 120+00 TO STA. 130+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:05
Drawn By : lrosenbaum
File : 136815444.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 253 | 393 |

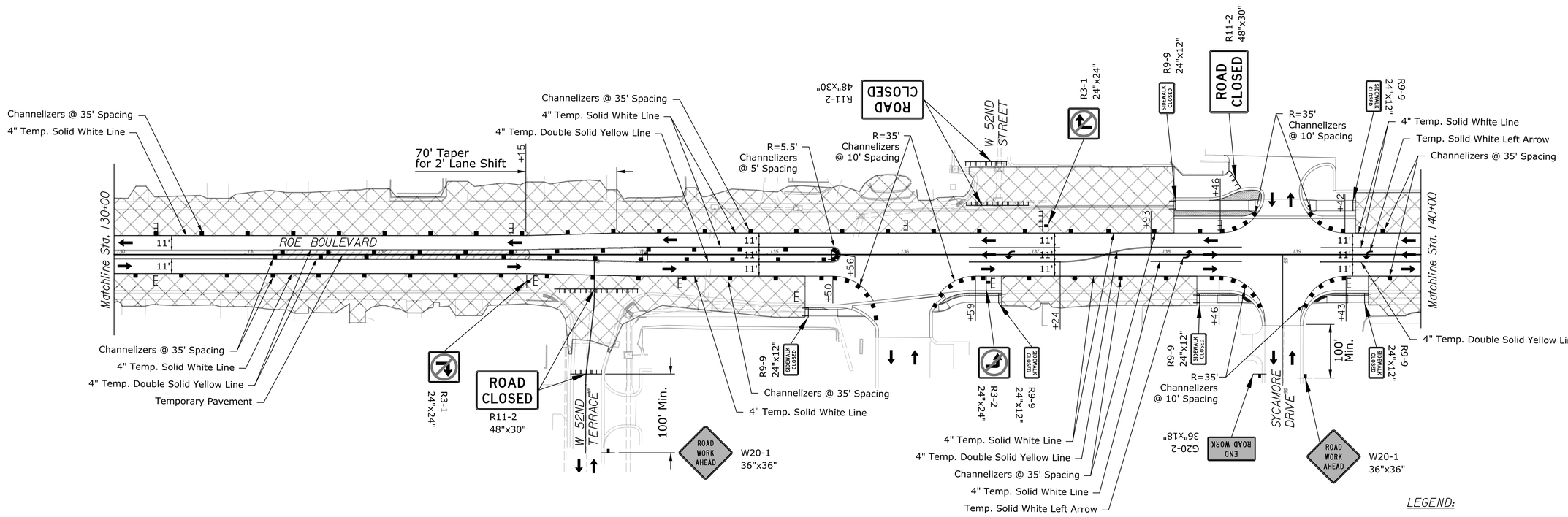
Traffic Control Notes:

1) Place winged Type III Barricades on 52nd Terrace west of Granada Lane. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2B
STA. 130+00 TO STA. 140+00

| BY | DATE |
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REFERENCES NOTED
REFERENCES CHECKED

Plotted :25-APR-2019 13:05
Drawn By: Irosenbaum
File: 136681T5445.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 254 | 393 |

51st Street Traffic Signal Notes:

1) All existing signal heads, including pedestrian signal heads, shall be covered.
2) Signal shall be placed into north-south through flashing yellow, north-south left red, and east-west flashing red.

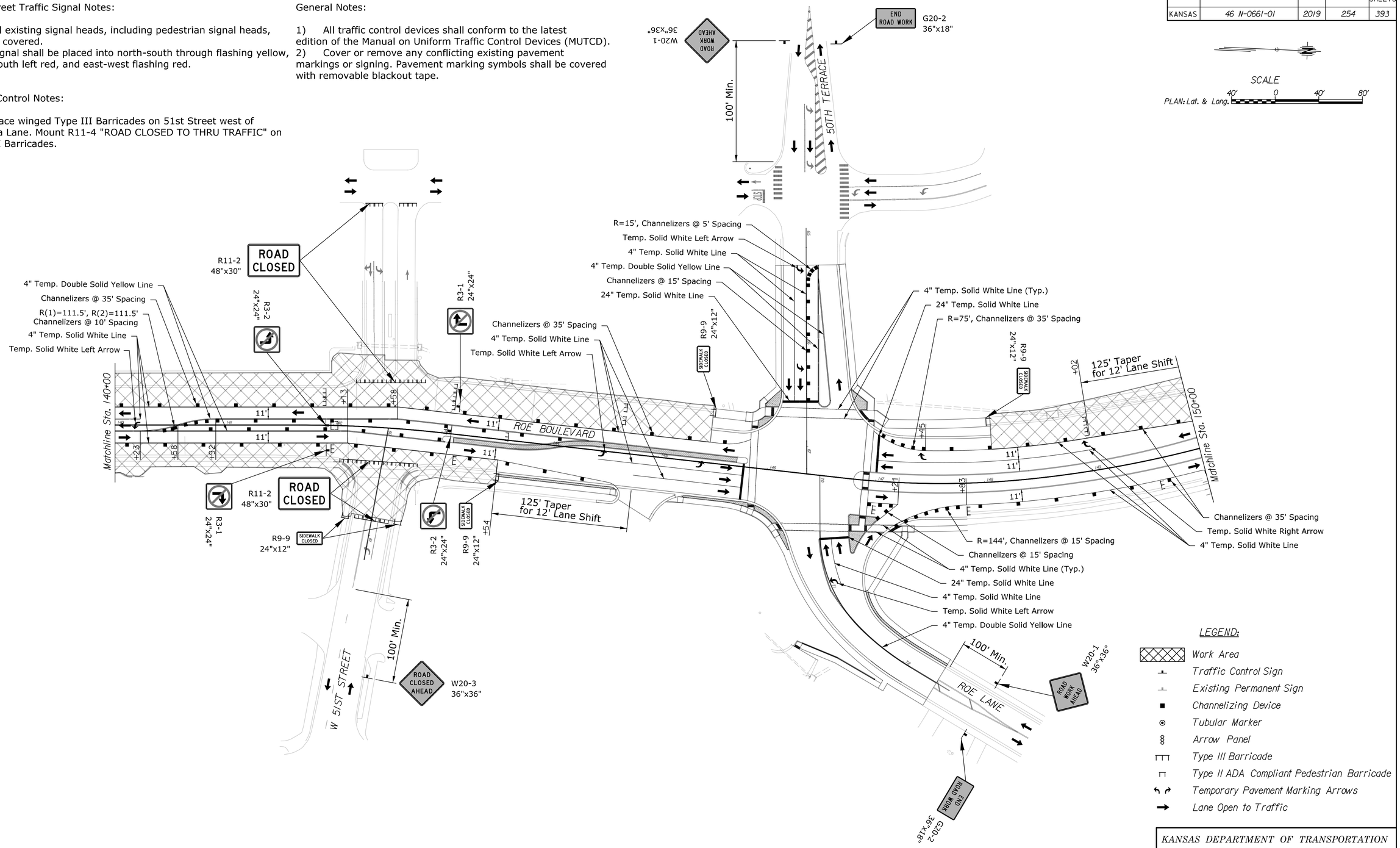
Traffic Control Notes:

1) Place winged Type III Barricades on 51st Street west of Granada Lane. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2B
STA. 140+00 TO STA. 150+00

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:05
Drawn By : lrosenbaum
File : 1366815446.dgn

48th Street/Skyline Drive Traffic Signal Notes:

1) Cover southbound left-turn, eastbound through, and all westbound signal heads.
2) Adjust signal timings to remove inactive northbound left-turn, eastbound through, and westbound signal phases.
3) Adjust signal timings for eastbound split phase.

Traffic Control Notes:

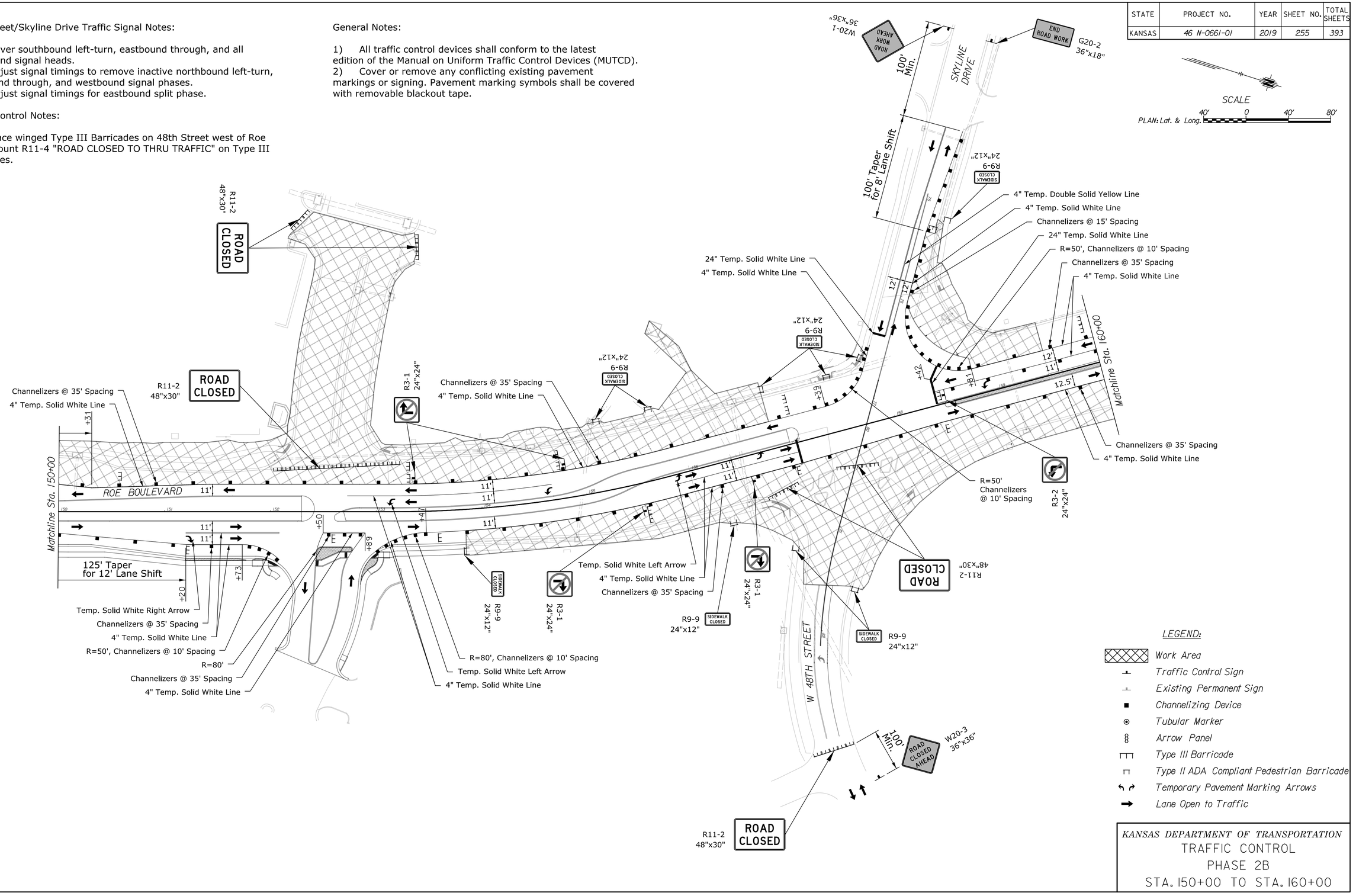
1) Place winged Type III Barricades on 48th Street west of Roe Lane. Mount R11-4 "ROAD CLOSED TO THRU TRAFFIC" on Type III Barricades.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 255 | 393 |

SCALE
PLAN: Lat. & Long.
40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2B
STA. 150+00 TO STA. 160+00

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

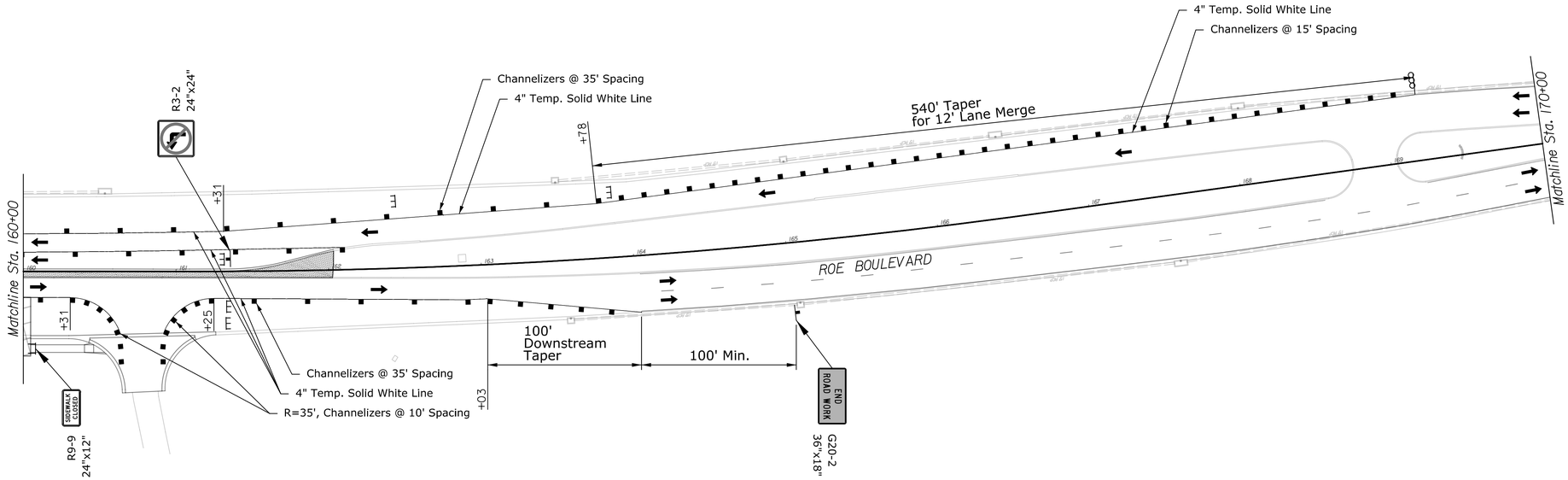
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Drawn By : lrosenbaum
File : 136681S447.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 256 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2B
STA. 160+00 TO STA. 170+00

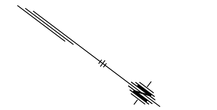
| DATE | BY | |
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| | | REFERENCES NOTED |
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Drawn By : Irosenbaum
File : 136681S448.dgn

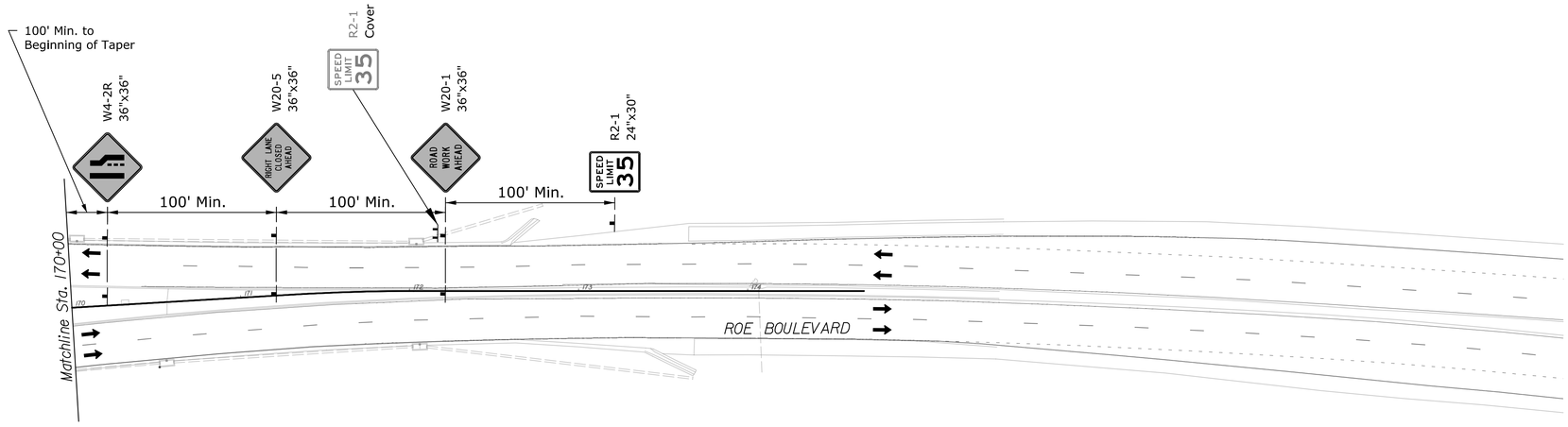
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 257 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.



SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2B
STA. 170+00 TO STA. 179+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:05
Drawn By : lrosenbaum
File : 13668T5449.dgn

48th Street/Skyline Drive Traffic Signal Notes:

1) Cover northbound left-turn and westbound through signal heads.
2) Adjust signal timings to remove inactive northbound left-turn and westbound through signal phases.
3) Adjust signal timings for eastbound split phase.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

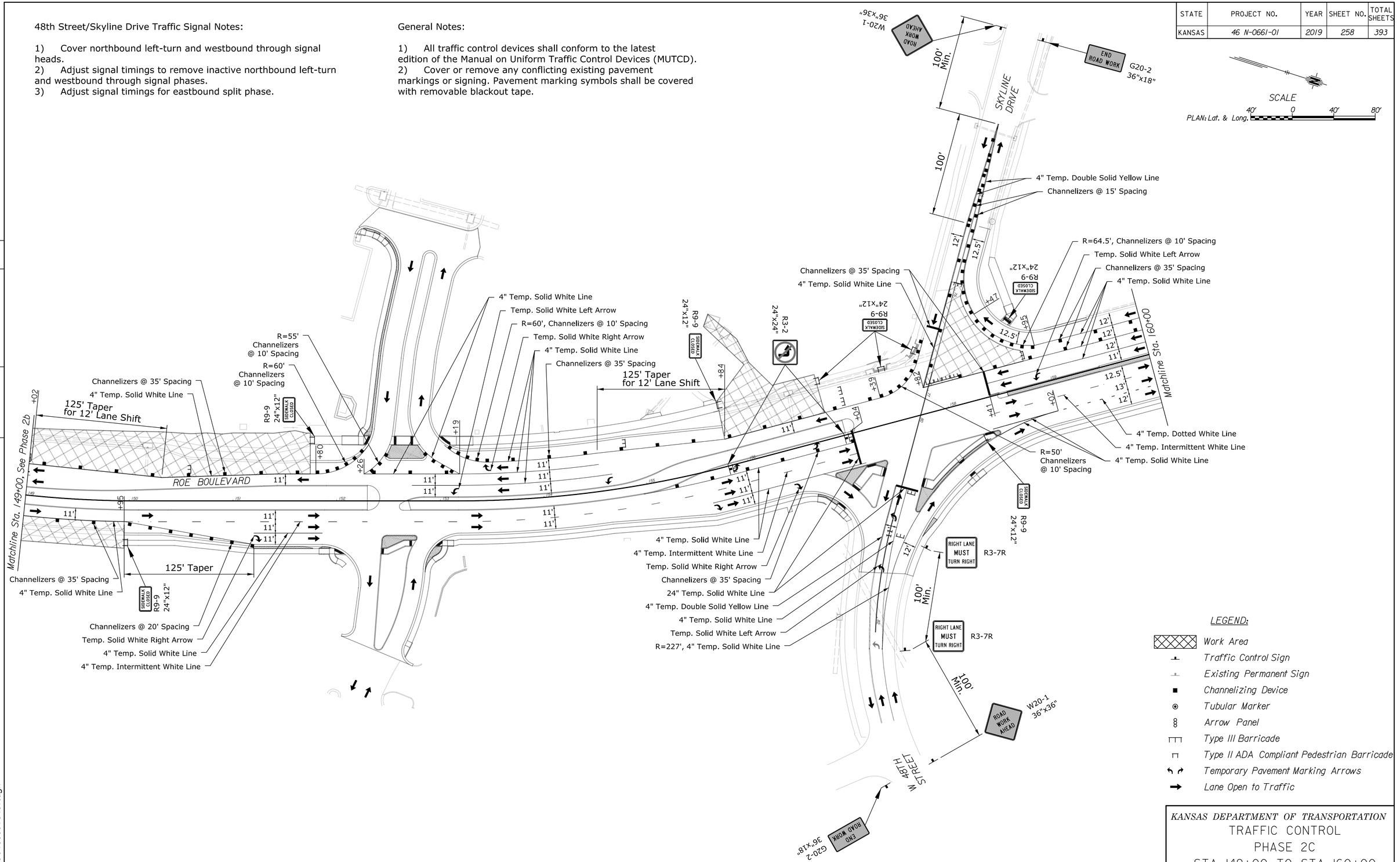
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 258 | 393 |

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:06

Drawn By : Irosenbaum
File : 13668T5457.dgn




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

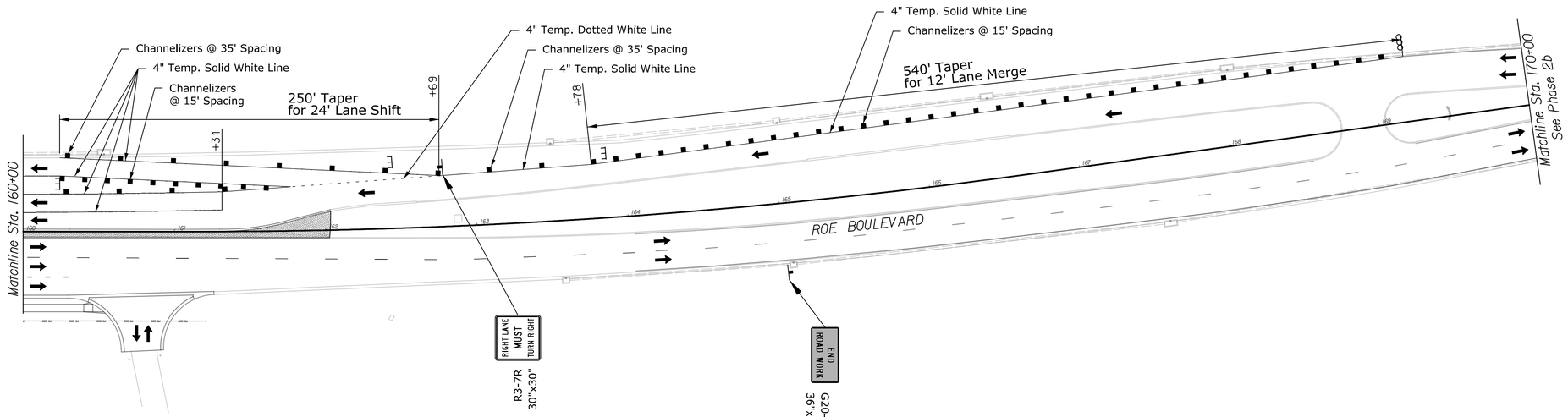
KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2C
STA. 149+00 TO STA. 160+00

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 259 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




*LEGEND:*

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

*KANSAS DEPARTMENT OF TRANSPORTATION*
TRAFFIC CONTROL
PHASE 2C
STA. 160+00 TO STA. 170+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:06
Drawn By: lrosenbaum
File : 136681 5458.dgn

48th Street/Skyline Drive Traffic Signal Notes:

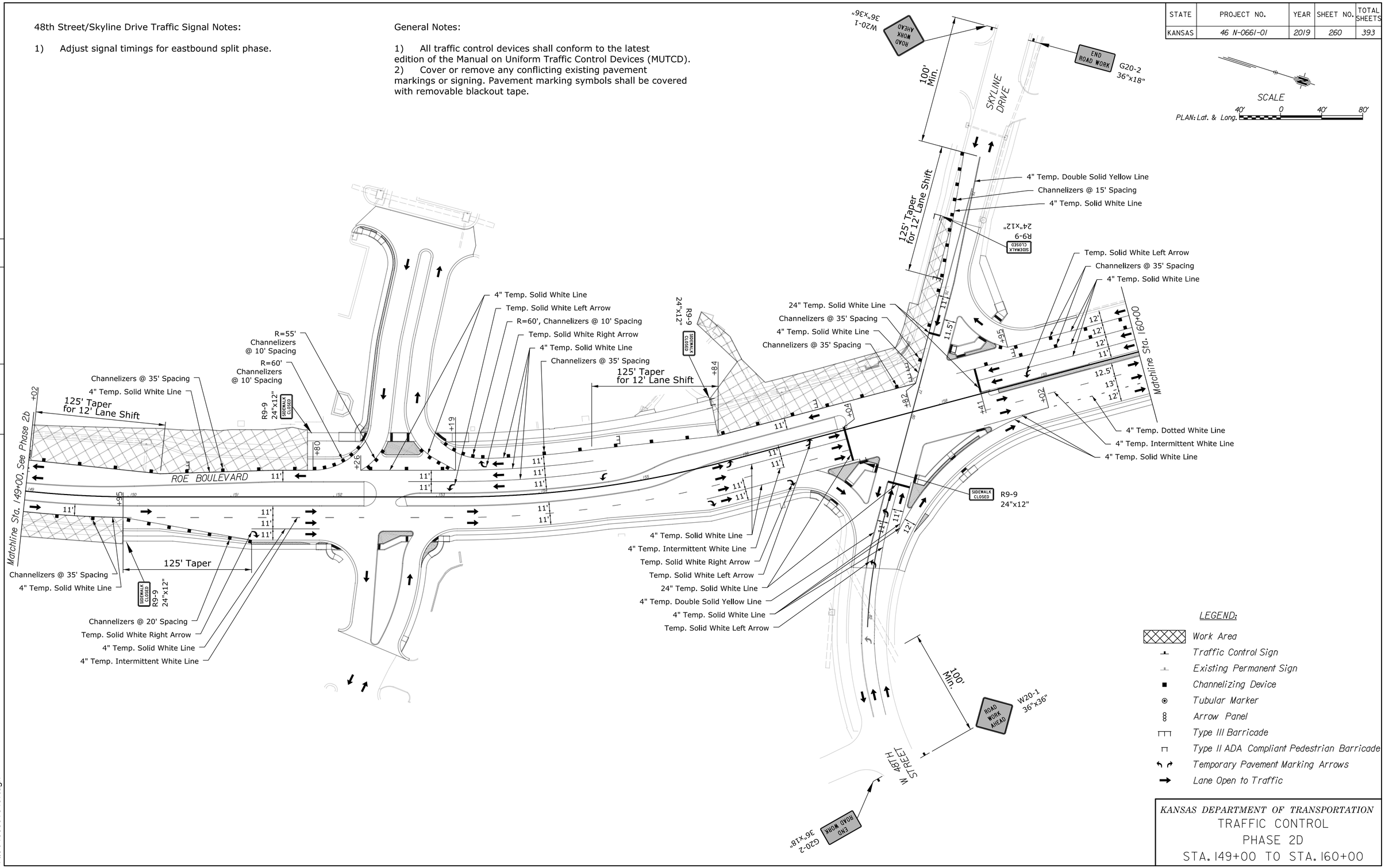
1) Adjust signal timings for eastbound split phase.

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 260 | 393 |

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 2D
STA. 149+00 TO STA. 160+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

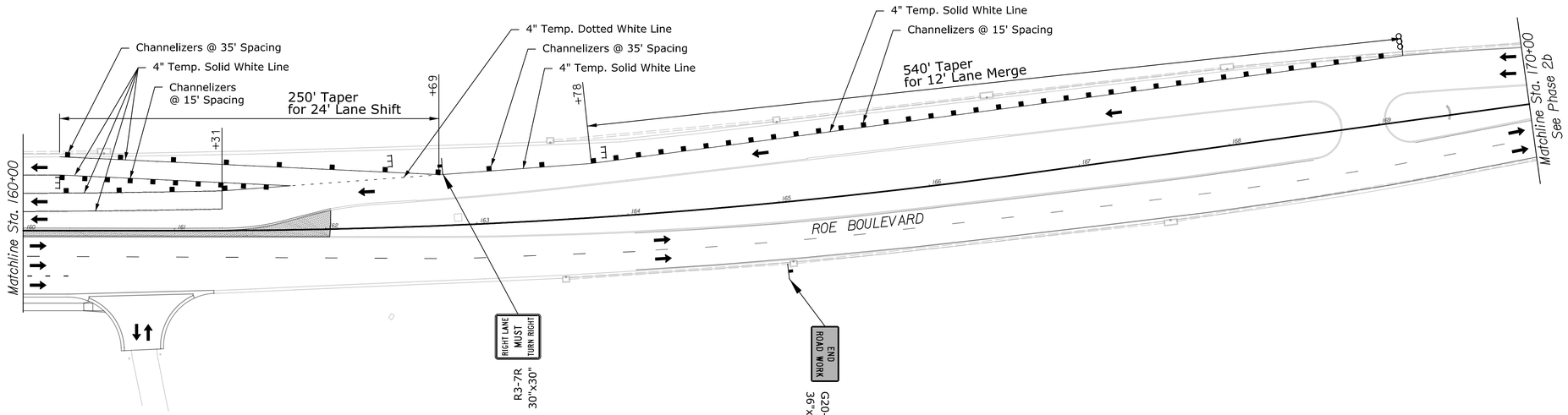
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File : 13668T5467.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 261 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




*LEGEND:*

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

*KANSAS DEPARTMENT OF TRANSPORTATION*
TRAFFIC CONTROL
PHASE 2D
STA. 160+00 TO STA. 170+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
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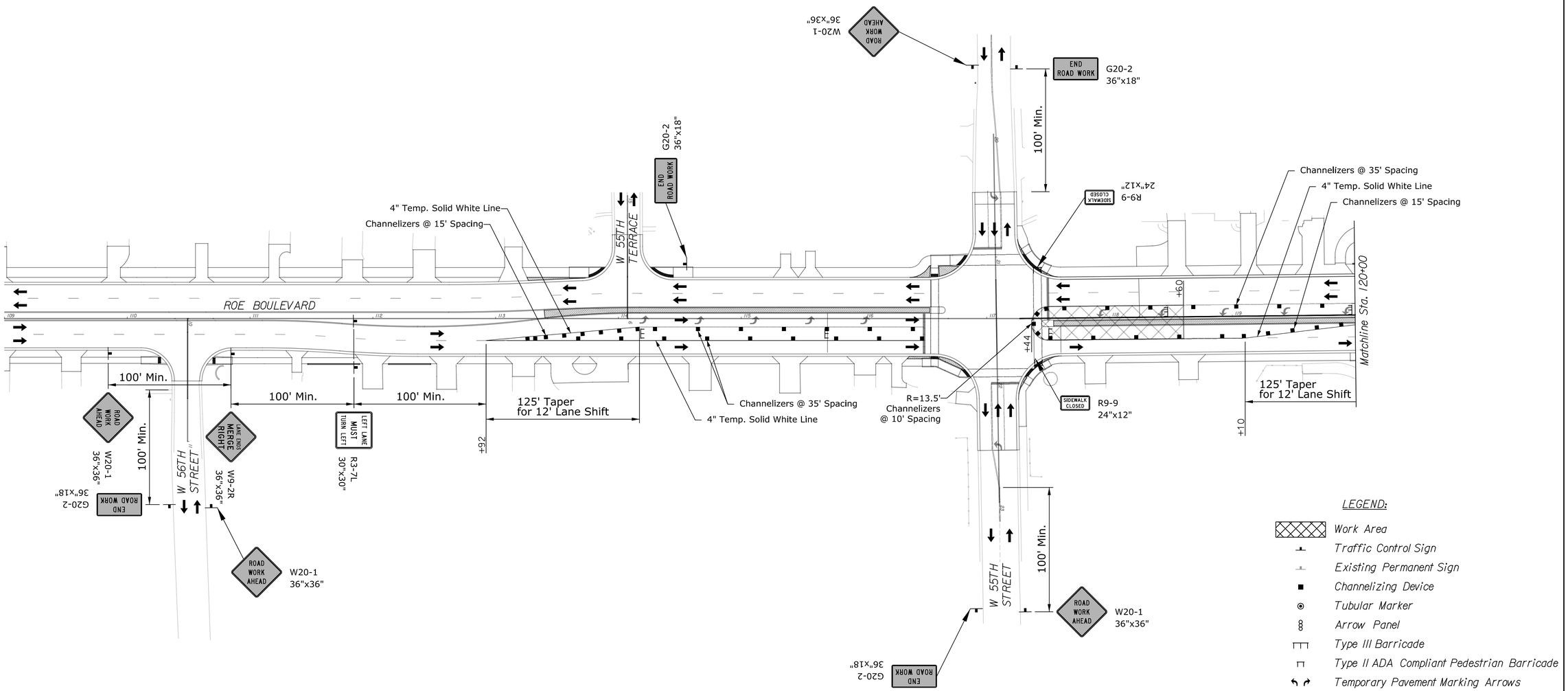
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 262 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
PLAN: Lat. & Long. 40' 0 40' 80'




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 3
STA. 109+00 TO STA. 120+00

| DATE | BY | REFERENCES NOTED |
|---|---|---|
| | | REFERENCES CHECKED |

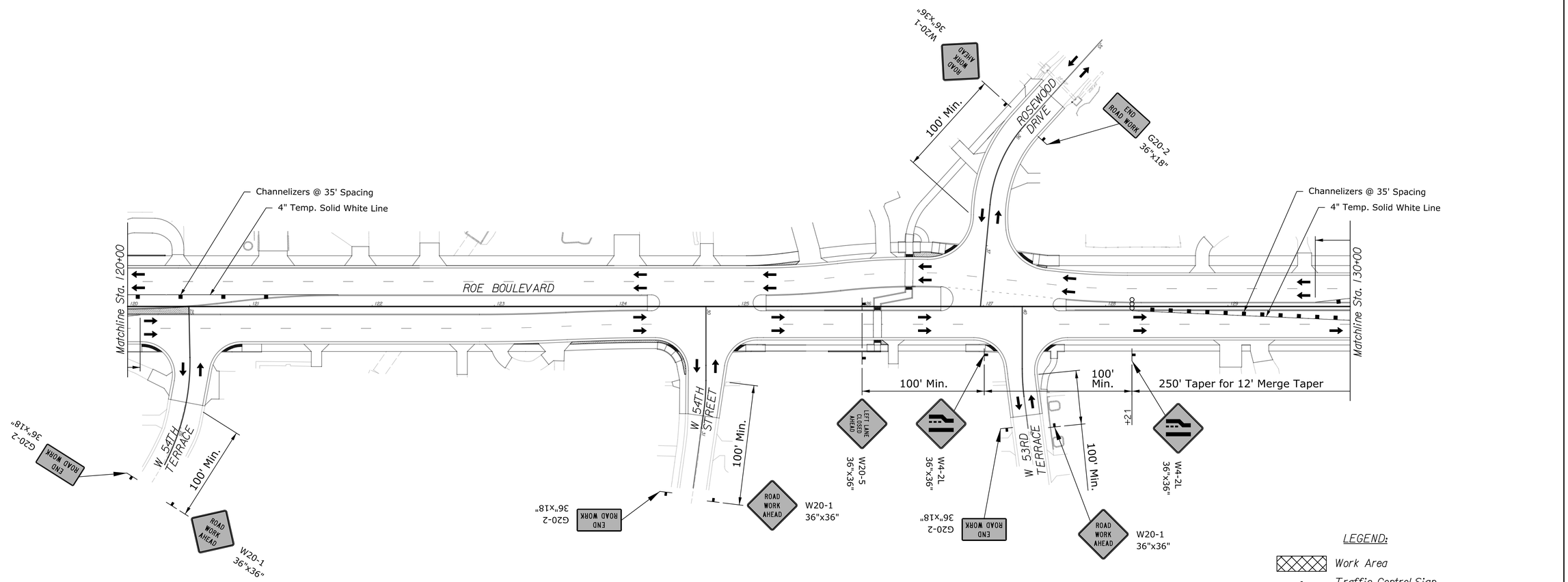
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File : 13668T5473.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 263 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 3
STA. 120+00 TO STA. 130+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

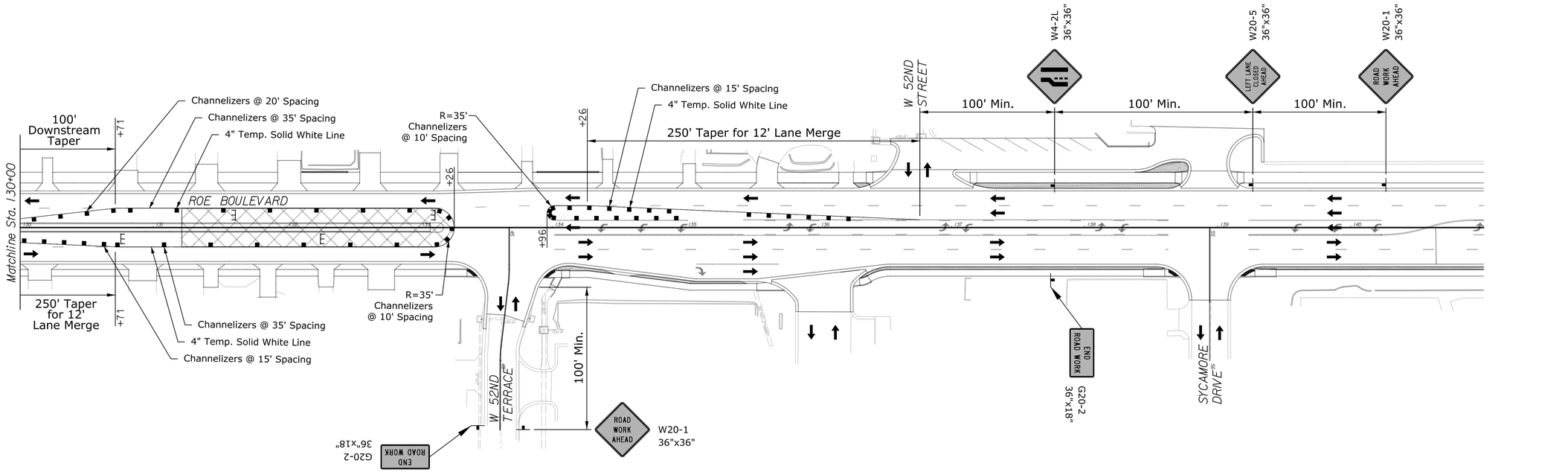
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 264 | 393 |

General Notes:

1) All traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2) Cover or remove any conflicting existing pavement markings or signing. Pavement marking symbols shall be covered with removable blackout tape.

SCALE
40' 0 40' 80'
PLAN: Lat. & Long.




LEGEND:

- Work Area
- Traffic Control Sign
- Existing Permanent Sign
- Channelizing Device
- Tubular Marker
- Arrow Panel
- Type III Barricade
- Type II ADA Compliant Pedestrian Barricade
- Temporary Pavement Marking Arrows
- Lane Open to Traffic

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL
PHASE 3
STA. 130+00 TO STA. 141+00

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:06
Drawn By : lrosenbaum
File : 13668TS475.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 265 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

Plotted : 25-APR-2019 13:06

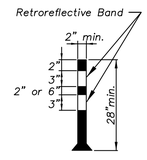
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*General Notes:*

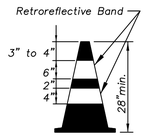
1. *All traffic control devices and application thereof, shall comply with the latest edition of the Manual of Uniform Traffic Control Devices (M.U.T.C.D.), and the City of Overland Park "Traffic Control Handbook." All roadside hardware shall have been tested and approved per National Cooperative Highway Research Program (N.C.H.R.P.) Report 350 or the American Association of State Highway and Transportation Officials (A.A.S.H.T.O.) Manual for Assessing Safety Hardware (M.A.S.H.), as applicable.*
2. *The traffic control requirements shown on these plans are minimum requirements only and do not attempt to address in depth the variety of situations that may occur once construction has started. In no way do the requirements shown on these plans relieve the Contractor of his responsibility for selecting the proper traffic control devices and implementation procedures that will assure the safety of motorist, pedestrians, and workers at all times. Any additional quantities of traffic control devices necessary to complete the contract or as ordered to be installed by the Engineer shall be considered subsidiary to the contract lump sum bid price.*
3. *The Contractor may develop his or her own Temporary Traffic Control (T.T.C.) plan and submit to the Engineer for approval to use on this project.*
4. *The Contractor shall be responsible for maintaining all traffic control devices on an around the clock basis, whether or not work is actively being pursued. Any deficiencies noted shall be corrected immediately.*
5. *Should the Contractor fail to enforce the traffic control plan or fail to clean, repair, replace or otherwise maintain the traffic control devices when directed to do so by the Engineer or his representative, the City may take one or more of the following actions:*
   a) *Employ another contractor to correct deficiencies and deduct the cost from the project pay estimate.*
   b) *Suspend all pay estimates until deficiencies are corrected.*
   c) *Stop the work until deficiencies are corrected.*
   d) *Place the contractor in default.*
6. *During all construction periods, the Contractor shall have at the jobsite all necessary traffic control devices (appropriate signs, arrow displays, channelizing devices, direction indicator barricades, etc.) to properly close at least one lane of traffic.*
7. *Properly equipped flaggers shall be used to direct traffic as shown on the plans or as directed by the Engineer. Flaggers' clothing and equipment shall conform to the latest edition of the M.U.T.C.D.*
8. *Existing stop, yield, and street name signs shall be maintained during construction. Stop, yield, and street name signs may be temporarily erected (no less than 7 feet vertical from grade) until they can be permanently installed. Any temporary stop or yield sign installation to be left in place overnight shall require prior approval from the Engineer.*
9. *Existing signs that conflict with the temporary traffic control shall be covered or removed by the Contractor. The Contractor is responsible for removal, storage, and reinstallation of the signs and posts. Any damaged signs or posts shall be replaced at the Contractor's expense.*
10. *Existing pavement markings that conflict with the temporary traffic control shall be covered temporarily, removed, or obliterated, as shown in the plans or as directed by the Engineer. If covered temporarily, removable, non-reflective, preformed tape that is approximately the same color as the pavement surface shall be used.*
11. *All orange construction signs shall be fluorescent orange micro-encapsulated prismatic retroreflective grade sheeting. All regulatory signs shall be prismatic retroreflective grade sheeting.*
12. *All retroreflective sheeting on barricades, vertical panels, conical delineators, drums, tubular markers, cones, and directional indicator barricades shall use Kansas Department of Transportation approved high intensity retroreflective grade sheeting.*
13. *All pavement markings shall be retroreflective with the use of glass beads.*
14. *The Contractor shall provide as many barricades with appropriate warning lights as needed to effectively close or restrict all or a portion of the right-of-way as shown in the plans or as directed by the Engineer. Detectable Pedestrian Barricades and/or Channelizers shall be used for all sidewalk closures or temporary sidewalk facilities. Type III barricades shall be used at street closings at the point of closure, and where new streets, under construction, connect to an existing street. A sidewalk detour shall be provided when necessary or directed by the Engineer. When existing pedestrian facilities are disrupted, closed, or relocated, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing facility. Where pedestrians with the visual disabilities normally use the closed sidewalk, a barrier that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.*
15. *Appropriate warning lights shall be used at night on all barricades, unless otherwise specified.*
16. *For merge taper channelization, direction indicator barricades shall be used for all long-term stationary traffic control installations. They may be used for intermediate-term, stationary, short-term stationary, and short duration installations but are not required. Standard conical delineators may be used in place of direction indicator barricades as long as the traffic control setup is three days or less.*
17. *For longitudinal channelization, drums, conical delineators, or vertical panels are acceptable devices. For work that occupies a location less than 8 hours, retroreflective cones (28 inches min. height) may be used. Where space restrictions do not allow for the use of other more visible devices, retroreflective tubular markers (28 inches min. height) may be used.*
18. *The maximum spacing between channelizing devices should approximately equal in feet to the posted speed limit in miles per hour.*
19. *Sign mounting height, measured vertically from the bottom of the sign to the top of the curb, shall be a minimum of 7 feet. Sign lateral offset, measured from the edge of the sign to the face of the curb, shall be a minimum of 2 feet.*
20. *Construction signs that are to be in place for 3 days or less may be mounted on approved temporary supports. The mounting height for signs on temporary supports, measured vertically from the bottom of the sign to the traveled way, shall be a minimum of 1 foot above the adjacent pavement surface, with the exception of the Road Work Ahead sign (W20-1), which shall be a minimum of 7 feet above the adjacent pavement surface.*
21. *Placement of advance work zone signing shall be based on the speed of the facility and the spacing indicated in the Advance Warning Sign Spacing Table.*
22. *End Road Work signs (G20-2) should be placed at the downstream end of the termination area. If the End Road Work sign (G20-2) will be less than 1,000 feet from other construction improvements, it may be omitted.*
23. *For road closures on a thoroughfare, a Changeable Message Sign shall be used to provide advance notices for all directions impacted by the closure. The message shall be displayed for a minimum of one week in advance of the closure.*
24. *All messages to be displayed on Changeable Message Signs shall be approved by the Engineer in advance of sign deployment.*
25. *Arrow boards shall be used at all lane closures on multilane streets. Preferred placement of the arrow display is at the start of the taper area.*
26. *Traffic control devices shall be completely covered or removed when not in use.*
27. *Any vertical pavement drop-off that exceeds 3 inches in depth and is located within 4 feet of an adjacent travel lane, shall require either a Curb Drop Off Ahead sign (OP TTC1) or Shoulder Drop Off sign (W8-17), as appropriate, spaced not less than 500 feet apart. Channelizing devices shall be placed at the edge of the drop off. If the drop-off is to remain in place for more than three days, a solid edge line pavement pavement marking shall be present for the adjacent lane.*
28. *The minimum lane width for a thru lane is 10 feet. The minimum lane width for a turn lane is 10 feet. A lane shall be closed if the minimum lane width cannot be maintained.*

*Construction Requirements:*

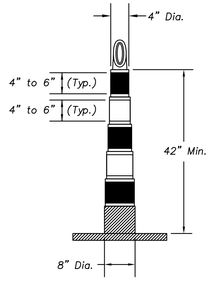
1. *Construction shall be sequenced to provide the least possible adverse effect to residents, roadway users, and pedestrians.*
2. *Construction materials shall be kept off sidewalks and consolidated in areas within the City right-of-way unless otherwise approved by the Engineer.*
3. *Mud and construction debris on streets or sidewalks shall be cleaned off immediately.*
4. *Access shall be maintained to all drives and side streets or as indicated in the Temporary Traffic Control plan.*
5. *Construction vehicles shall be parked along streets so as not to cause sight restrictions for vehicles coming from side streets or drives.*
6. *The Contractor shall be responsible for coordinating with the Engineer for street closure locations and times.*
7. *Construction shall not be performed on holidays or weekends unless prior approval is received in writing from the Engineer.*
8. *The Contractor is responsible for avoiding any and all utilities when setting sign posts and will be required to coordinate his activities with any and all utility companies whether their facility is indicated on the plans or not.*
9. *Street plates shall be A36 certified steel a minimum of 1 inch thick. The plate shall be securely anchored and all edges of the plate shall be ramped with hot mix asphalt. If hot mix asphalt is not available, cold mix may be used. A Steel Plate Ahead warning sign (W8-24) with a Type B warning light shall be installed at the location of a street plate.*
10. *Any construction activities which require the closing of a lane of traffic on thoroughfares (arterial streets) or collector streets shall not occur between the hours of 7:00 a.m. to 8:30 a.m. and 4:00 p.m. to 6:00 p.m. or on holidays or weekends, unless prior approval is received from the Engineer or there are emergency repairs necessary by a utility company or their representative.*

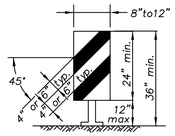



*Tubular Marker*

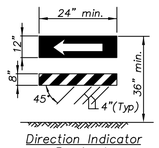



*28" Cone*

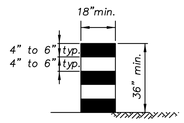


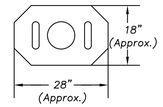

*Vertical Panel*



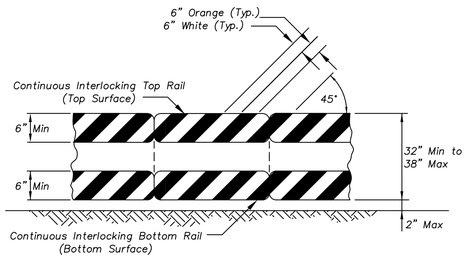

*Direction Indicator Barricade*
*(See Note 16)*




*Drum*



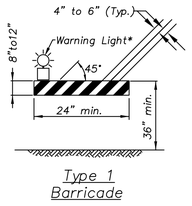

*Conical Delineator*



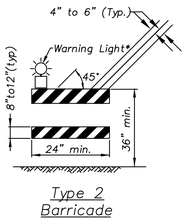

*Notes:*

1. *Adjacent sections shall have the same base color (orange, white, or yellow).*
2. *Adjacent sections shall be interlocked together.*
3. *Stripes are Optional.*

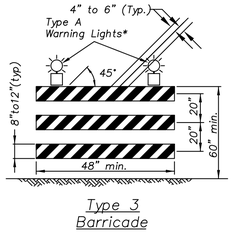
*Detectable Pedestrian Barricade/Channelizer*




*Type 1 Barricade*




*Type 2 Barricade*




*Type 3 Barricade*

**Optional during daylight hours (See general note #15)*

*Length and Device Spacing for Lane Closure*

| Speed Limit | Minimum Taper Length (L)** | | | Min. No. of Devices for Taper | Maximum Device Spacing |
|---|---|---|---|---|---|
| M.P.H. | Lane Width in Feet 10 | 11 | 12 | (12FT. Lane) | In Feet |
| 20 | 70 | 75 | 80 | 5 | 20 |
| 25 | 105 | 115 | 125 | 6 | 25 |
| 30 | 150 | 165 | 180 | 7 | 30 |
| 35 | 205 | 225 | 245 | 8 | 35 |
| 40 | 270 | 295 | 320 | 9 | 40 |
| 45 | 450 | 495 | 540 | 13 | 45 |
| 50 | 500 | 550 | 600 | 13 | 50 |
| 55 | 550 | 605 | 660 | 13 | 55 |

$L = SxW$ $\quad S \geq 45$ MPH
$L = S^2xW/60$ $\quad S \leq 40$ MPH

*L = Minimum Taper Length (Feet)*
*W = Width of Offset (Feet)*
*S = Posted Speed Limits Prior to Construction (MPH)*

*Note: Length of downstream taper to be between 50' and 100' with device spacing of 20'.*

## *LEGEND*

- CMS *Changeable Message Sign*
- *Arrow Board*
- *Type 3 Barricade*
- *Detectable Pedestrian Barricade/Channelizer*
- *Traffic or Pedestrian Signal*
- *Pavement Marking To Be Removed*
- *Work Area*
- *Sign Code*
- *Sign Symbol*
- *Channelizing Device*
- *Flagger*
- *Arrow Board Support*
- *Direction of Traffic*
- *Direction Indicator Barricade*
- *Tubular Markers*

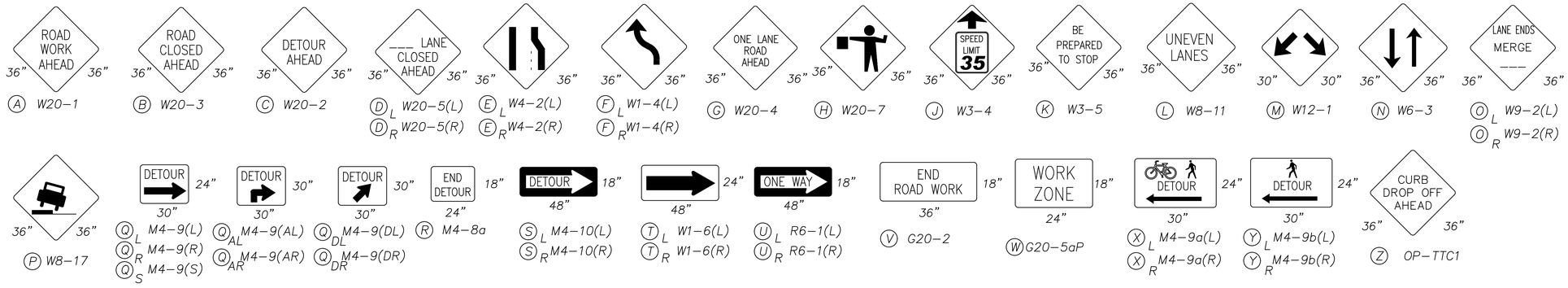
*KANSAS DEPARTMENT OF TRANSPORTATION*

TRAFFIC CONTROL DETAILS

SHEET 1 OF 4

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 266 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




Ⓐ W20-1 · Ⓑ W20-3 · Ⓒ W20-2 · Ⓓ L W20-5(L), Ⓓ R W20-5(R) · Ⓔ L W4-2(L), Ⓔ R W4-2(R) · Ⓕ L W1-4(L), Ⓕ R W1-4(R) · Ⓖ W20-4 · Ⓗ W20-7 · Ⓙ W3-4 · Ⓚ W3-5 · Ⓛ W8-11 · Ⓜ W12-1 · Ⓝ W6-3 · Ⓞ L W9-2(L), Ⓞ R W9-2(R)

Ⓟ W8-17 · Ⓠ L M4-9(L), Ⓠ R M4-9(R), Ⓠ S M4-9(S) · Ⓠ AL M4-9(AL), Ⓠ AR M4-9(AR) · Ⓠ DL M4-9(DL), Ⓠ DR M4-9(DR) · Ⓡ M4-8a · Ⓢ L M4-10(L), Ⓢ R M4-10(R) · Ⓣ L W1-6(L), Ⓣ R W1-6(R) · Ⓤ L R6-1(L), Ⓤ R R6-1(R) · Ⓥ G20-2 · Ⓦ G20-5aP · Ⓧ L M4-9a(L), Ⓧ R M4-9a(R) · Ⓨ L M4-9b(L), Ⓨ R M4-9b(R) · Ⓩ OP-TTC1

① R11-2 · ② R11-4 · ③ L R3-7(L), ③ R R3-7(R) · ④ R4-7a · ⑤ R2-1(XX) · ⑥ R5-1 · ⑦ R R3-1 · ⑦ L R3-2 · ⑧ R1-1 · ⑨ R1-2 · ⑩ L R9-11(L), ⑩ R R9-11(R) · ⑪ L R9-11a(L), ⑪ R R9-11a(R) · ⑫ R9-10 · ⑬ R9-9 · ⑭ W11-2, W16-7P

# Sign Designations

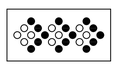
## Subscript Codes

L – Left
R – Right
S – Straight
AL – Advance Left
AR – Advance Right
DL – Diagonal Left
DR – Diagonal Right

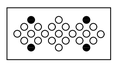
## Notes

1. Sizes shown are for conventional roadways.
2. Signs ⑪, ⑫, and ⑬, shall be mounted on Portable Barricade/Channelizer

| Type | Min. Size | Min. # of Elements | Usage |
|---|---|---|---|
| A | 48"x24" | 12 | Speed Limit ≤ 30 MPH |
| B | 60"x30" | 13 | Speed Limit = 35, 40, 45 MPH |
| C | 96"x48" | 15 | Speed Limit ≥ 50 MPH |

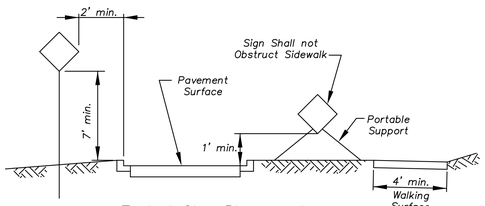


Arrow board shall be set in the sequential chevron or flashing arrow mode for lane closures.



Arrow board shall be set in the flashing caution mode for shoulder work, roadside work near the shoulder, or temporary closing of one lane on a two–lane, two–way roadway.

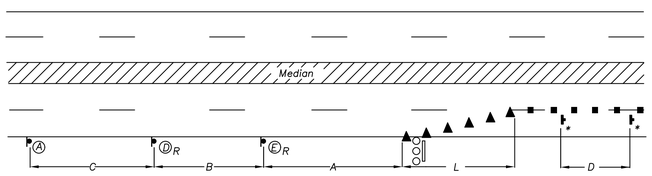
## Arrow Board




## Typical Sign Placement

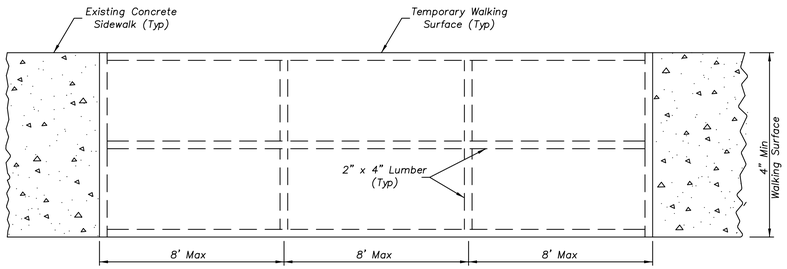
## Advance Warning Sign Spacing Table

| Road Type | Minimum Distance Between Signs | | | |
|---|---|---|---|---|
| | A | B | C | D |
| Urban (Speed Limit ≤ 30 MPH) | 100' | 100' | 100' | 100' |
| Urban (Speed Limit ≥ 35 MPH) | 350' | 350' | 350' | 150' |
| Rural (Speed Limit ≤ 40 MPH) | 350' | 350' | 350' | 200' |
| Rural (Speed Limit > 40 MPH) | 500' | 500' | 500' | 200' |

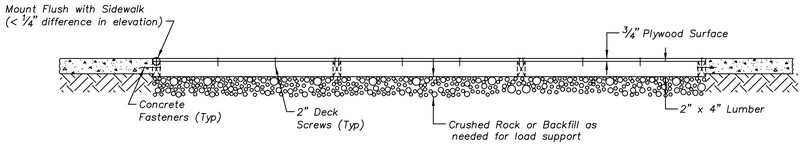



## Typical Sign Spacing

Note: * Applies to any subsequent sign in the work zone.




## Top View




## Side View

# Temporary Sidewalk Detail

## Notes

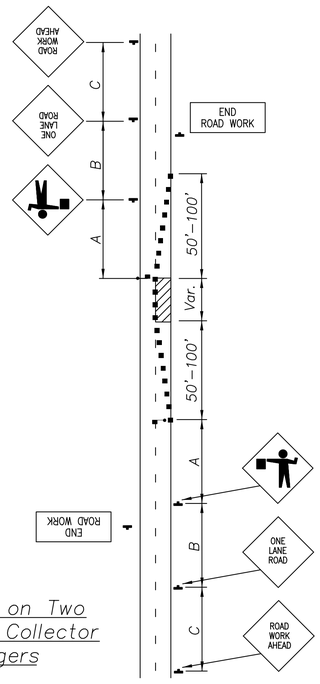
1. A temporary sidewalk may be installed, in lieu of providing a pedestrian detour, when removing sidewalk panels during construction.
2. The temporary sidewalk shall be installed immediately after the sidewalk has been removed.

KANSAS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL DETAILS
SHEET 2 OF 4

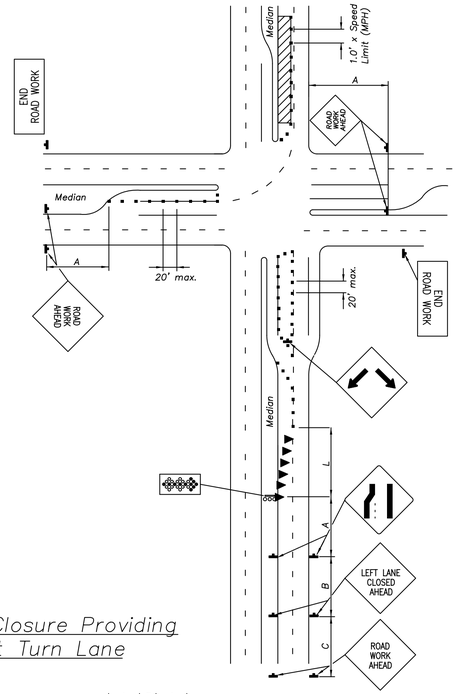
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Drawn By : lrosenbaum
File : 13668T5802.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 267 | 393 |

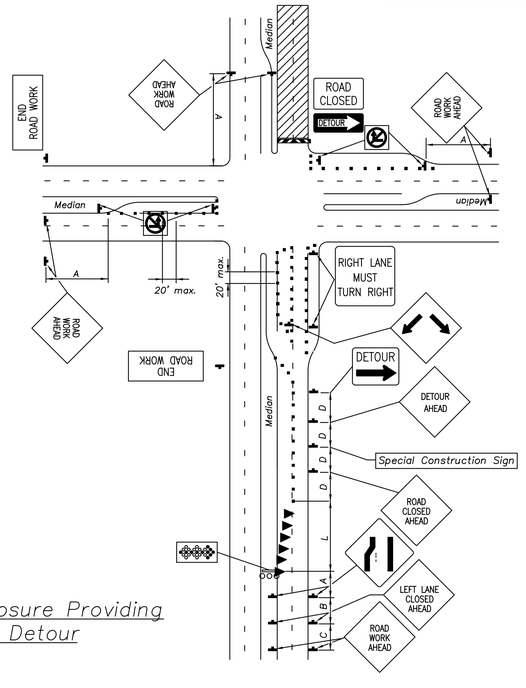
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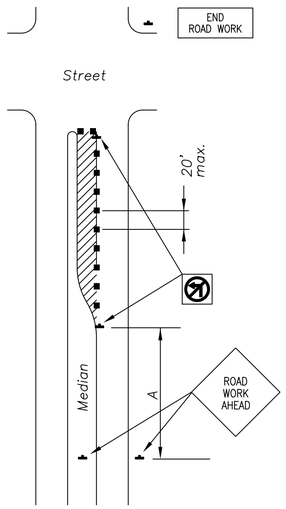

Typical Lane Closure on Two Lane Thoroughfare or Collector Road Using Flaggers



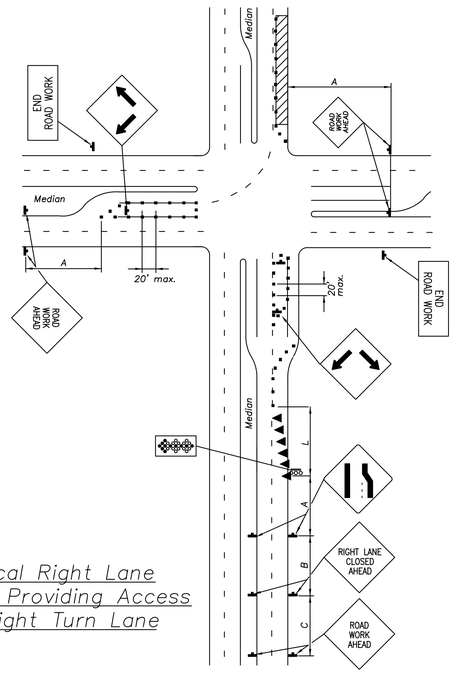

Typical Left Lane Closure Providing Access to Left Turn Lane



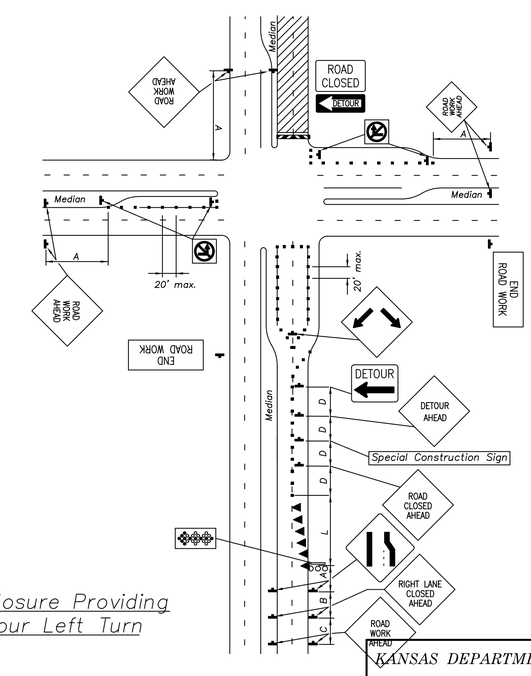

Typical Road Closure Providing Off-Site Detour




Typical Left Turn Lane Closure




Typical Right Lane Closure Providing Access to Right Turn Lane




Typical Road Closure Providing Off-Site Detour Left Turn

OVERLAND PARK STANDARDS ARE INTENDED FOR CONSTRUCTION GUIDANCE. REFERENCES MADE TO OP MAY NOT PERTAIN TO THIS PROJECT.

KANSAS DEPARTMENT OF TRANSPORTATION

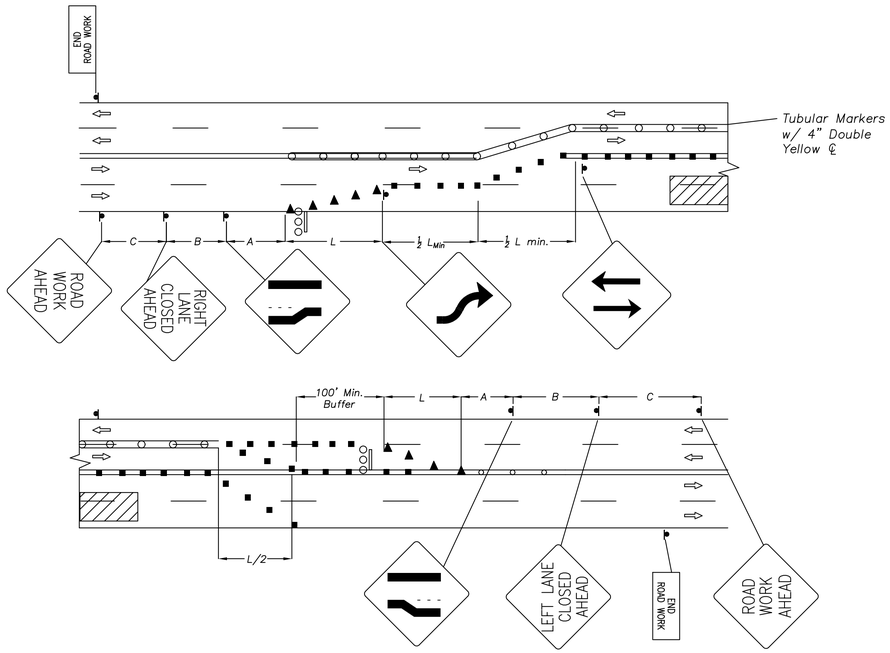
TRAFFIC CONTROL DETAILS

SHEET 3 OF 4

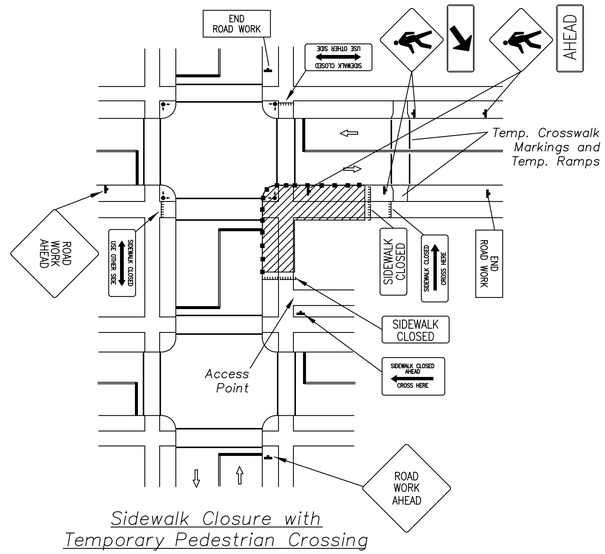
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Drawn By : lrosenbaum
File : 13668T5803.dgn

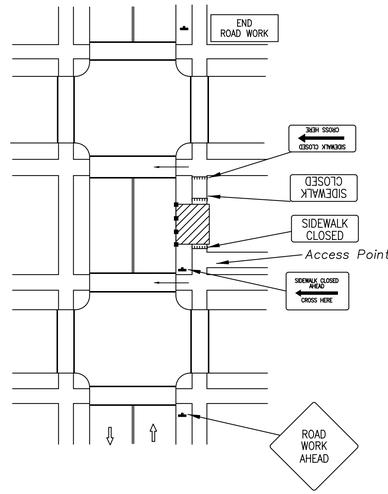
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 268 | 393 |



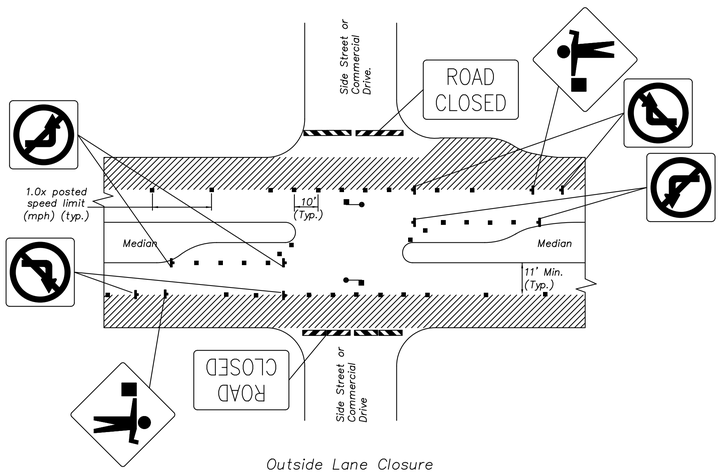

Typical Double Lane Closure on Four Lane Undivided



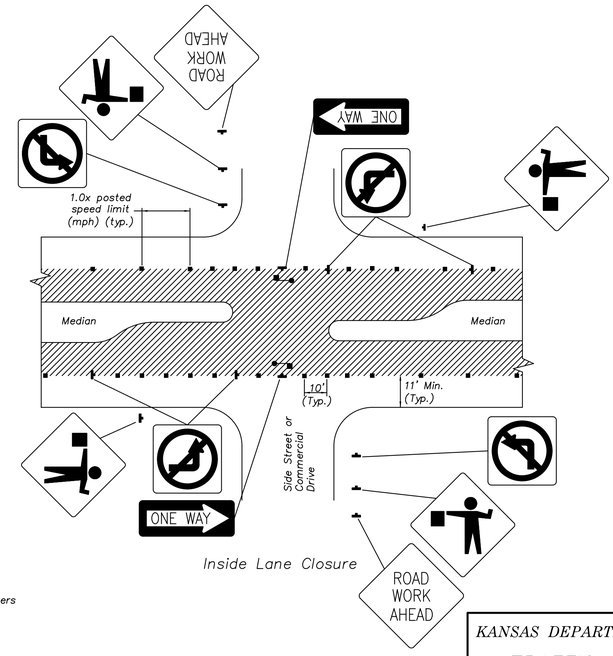

Sidewalk Closure with Temporary Pedestrian Crossing




Sidewalk Closure




Outside Lane Closure




Inside Lane Closure

Note:
A minimum of two (2) properly equipped flaggers shall be used at the intersection. Additional flaggers may be required as directed by the Engineer.

Overlay Lane Closure Details

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS

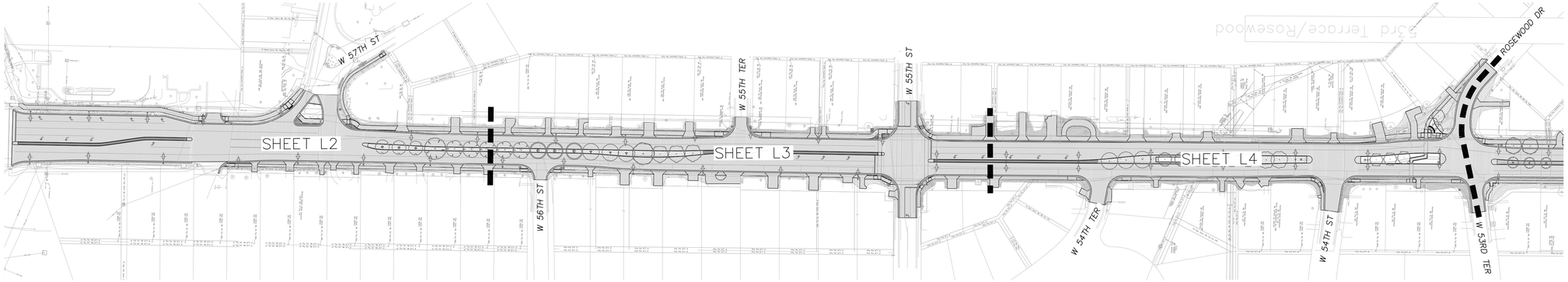
SHEET 4 OF 4

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| | | REFERENCES CHECKED |

Plotted :25-APR-2019 13:06

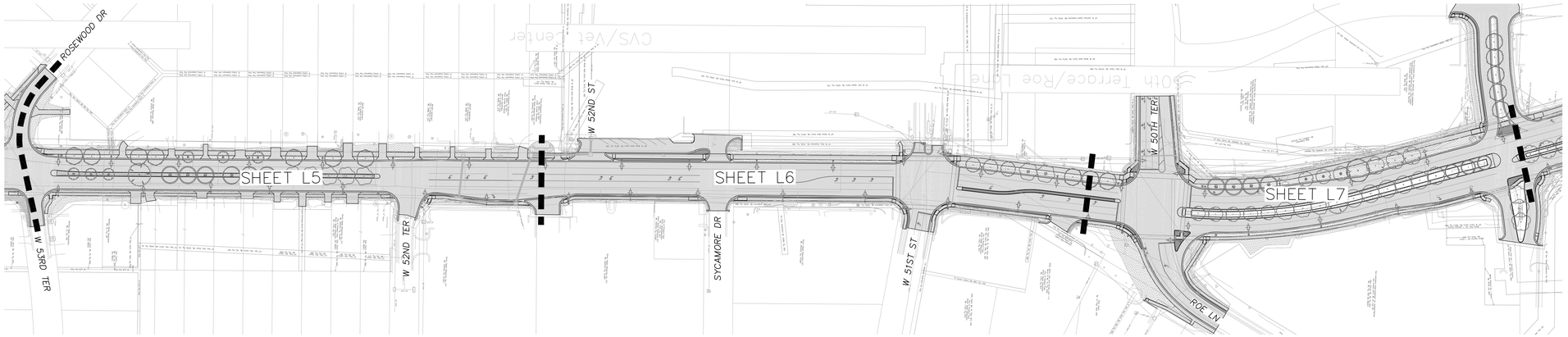
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| KANSAS | 46 N-0661-01 | 2019 | L1 | 393 |



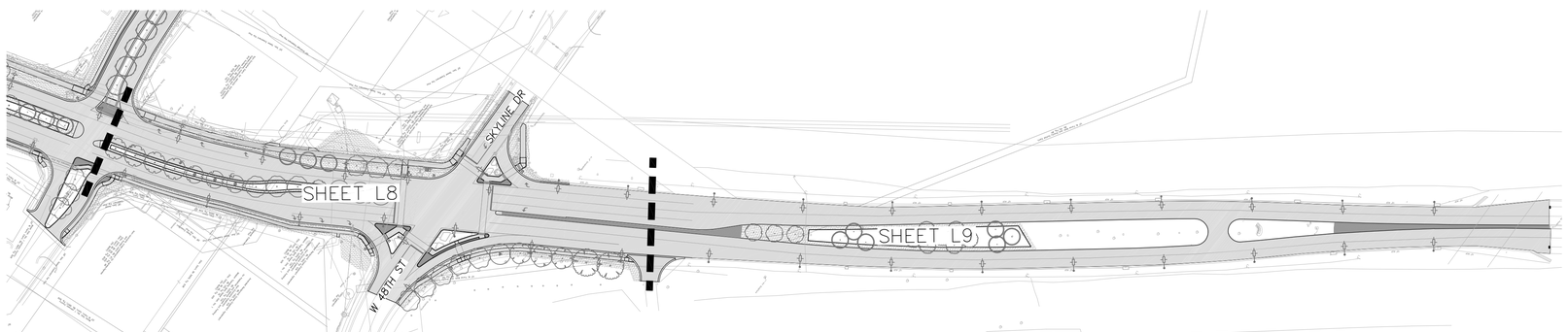

NORTH

## OVERALL PLAN




NORTH

## OVERALL PLAN (CONT.D)




NORTH

| RECAPITULATION OF ROADSIDE IMPROVEMENTS | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| *Furnishing and Planting Plant Material* | LS | 1 |
| *Waste Receptacle* | EA | 1 |
| *Bench* | EA | 3 |
| *Roadside Improvement* | LS | 1 |

## OVERALL PLAN (CONT.D)

0 50 100 200

KANSAS DEPARTMENT OF TRANSPORTATION

OVERALL LANDSCAPE PLAN

L1

DATE
BY
REFERENCES NOTED
REFERENCES CHECKED

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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L2 | 393 |

# PLANT SCHEDULE-L2

| TREES | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|---|---|---|---|---|---|
| AS | 3 | Acer miyabei `Morton` | State Street Maple | B & B | 2.5" Cal. |
| AN | 3 | Acer truncatum x. A. plat. `Keithsform` | Norwegian Sunset® Maple | B & B | 2.5" Cal. |
| QB | 1 | Quercus bicolor | Swamp White Oak | B & B | 2.5" Cal. |

| TURFGRASS | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|
| | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod |

# LEGEND

*Shovel Cut Edge, See Detail 04/L17*



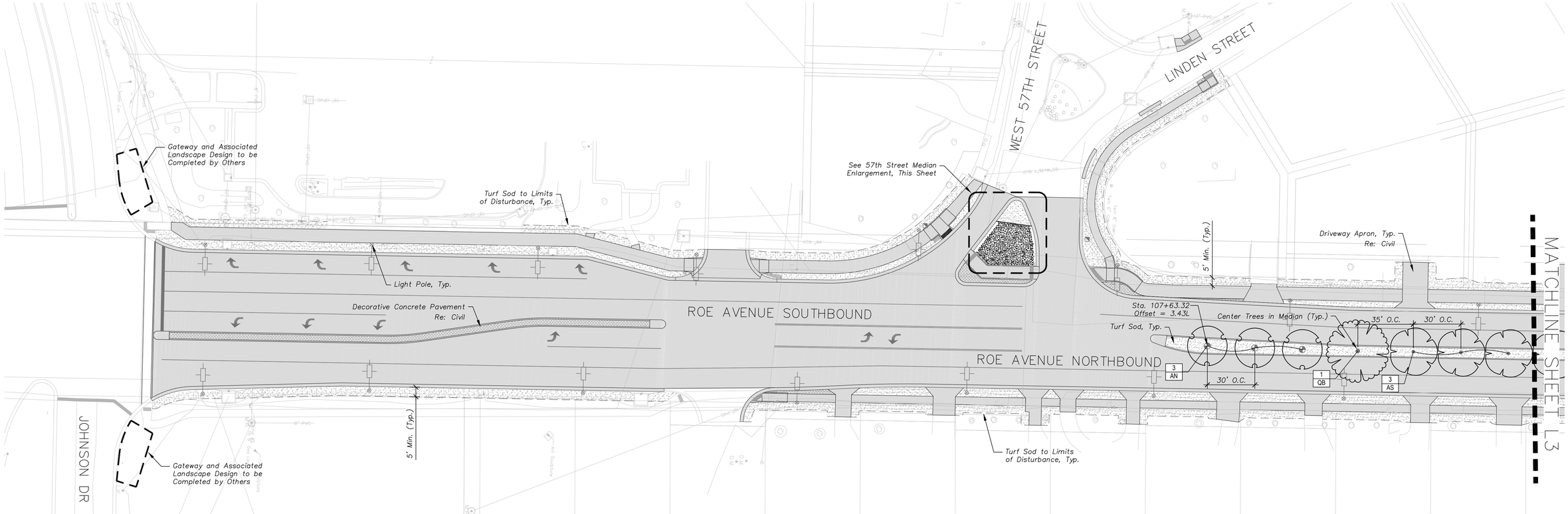

## 57TH ST MEDIAN ENLARGEMENT

0 5 10 20 NORTH

# PLANT SCHEDULE-57TH ST MEDIAN

| BULBS | CODE | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|---|
| | ND | 75 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| | TL | 24 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |

| GRASSES & PERENNIALS | CODE | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|---|
| | AS3 | 36 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| | AV | 49 | Andropogon virginicus | Broomsedge Bluestem | 1 Qt. |
| | CN | 40 | Calamintha nepeta `Montrose White` | Montrose White Catmint | 4" pot |
| | DC | 36 | Dianthus carthusianorum | Clusterhead Pink | 1 Qt. |
| | EP3 | 37 | Echinacea paradoxa | Bush`s Coneflower | 4" pot |
| | EP2 | 118 | Echinacea purpurea | Purple Coneflower | 4" pot |
| | ER | 49 | Echinops ritro | Globe Thistle | 1 Qt. |
| | PB | 30 | Penstemon barbatus | Beardlip Penstemon | 1 Qt. |
| | SS | 57 | Solidago speciosa | Showy Goldenrod | 1 Qt. |




*Note: Station Offsets shown are based on Proposed Road ℄ as shown on Civil Sheets.*

0 15 30 60 NORTH

KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE PLAN

L2

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

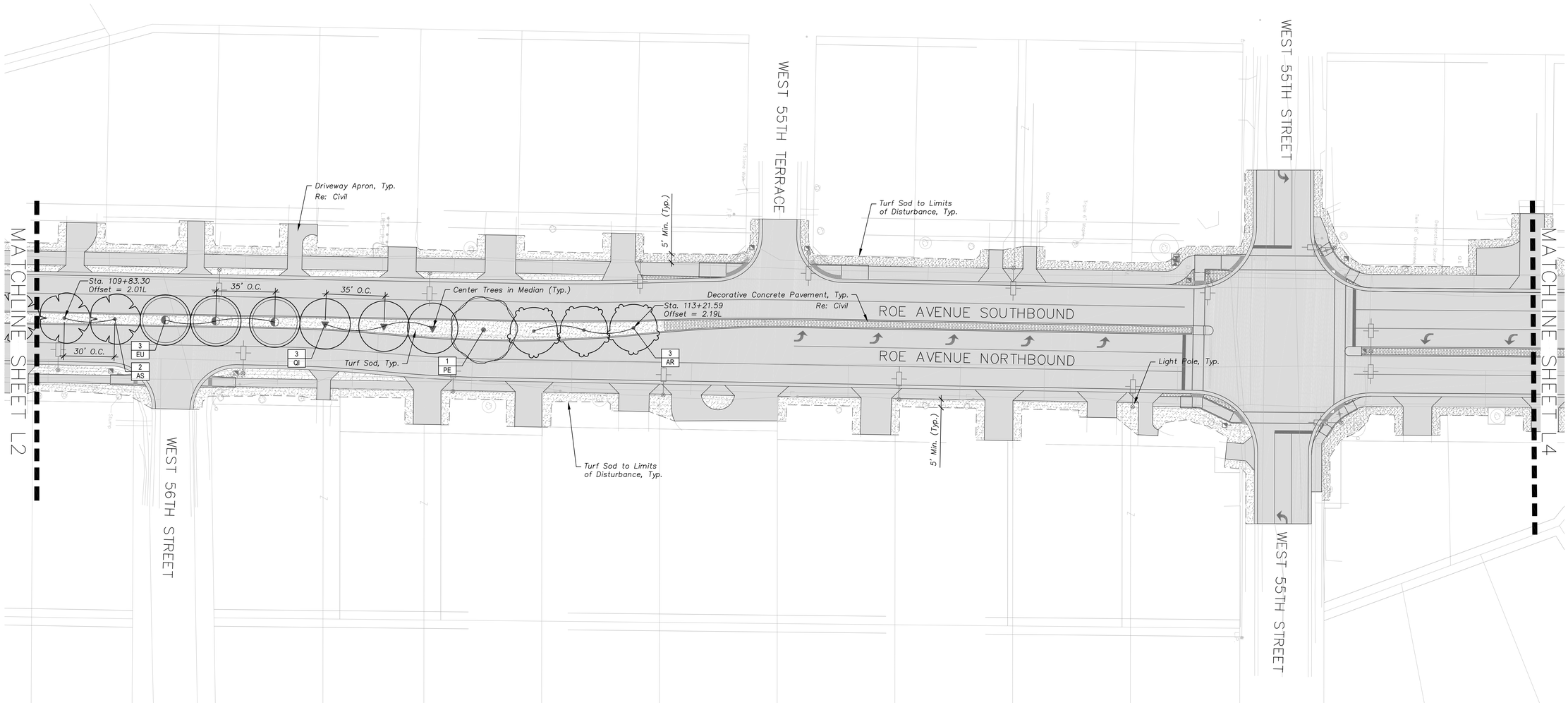
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L3 | 393 |

# PLANT SCHEDULE-L3

| TREES | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|---|---|---|---|---|---|
| AR | 3 | Acer miyabei `JFS-KW3AMI` | Rugged Ridge® Maple | B & B | 2.5" Cal. |
| AS | 2 | Acer miyabei `Morton` | State Street Maple | B & B | 2.5" Cal. |
| EU | 3 | Eucommia ulmoides | Hardy Rubber Tree | B & B | 2.5" Cal. |
| PE | 1 | Platanus x acerifolia `Morton Circle` | Exclamation!® Planetree | B & B | 2.5" Cal. |
| QI | 3 | Quercus imbricaria | Shingle Oak | B & B | 2.5" Cal. |

| TURFGRASS | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|
| | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod |




*Note: Station Offsets shown are based on Proposed Road ℄ as shown on Civil Sheets.*

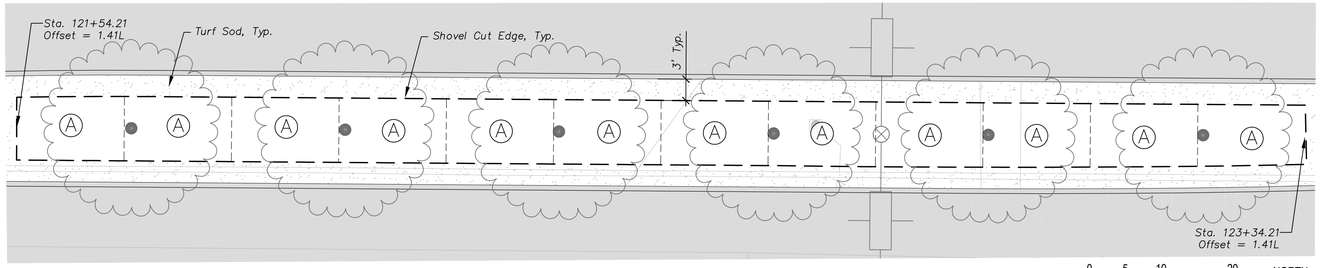
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KANSAS DEPARTMENT OF TRANSPORTATION
LANDSCAPE PLAN
L3

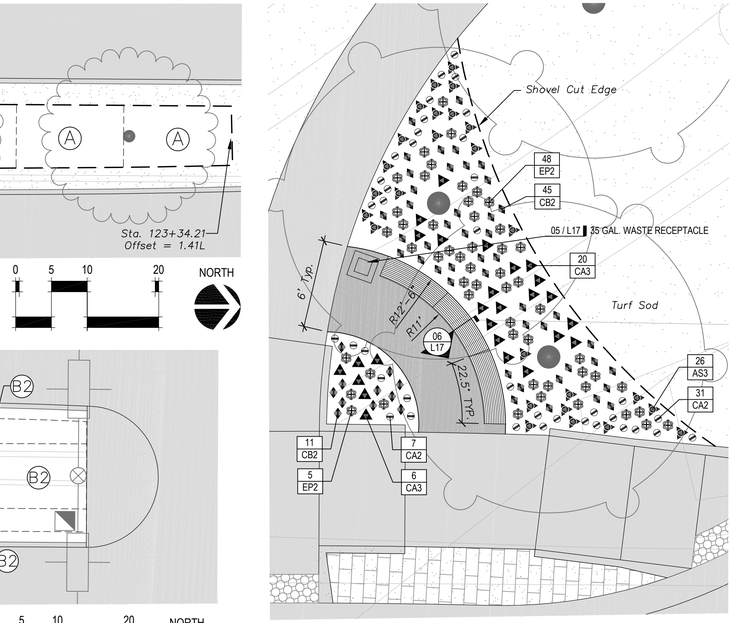
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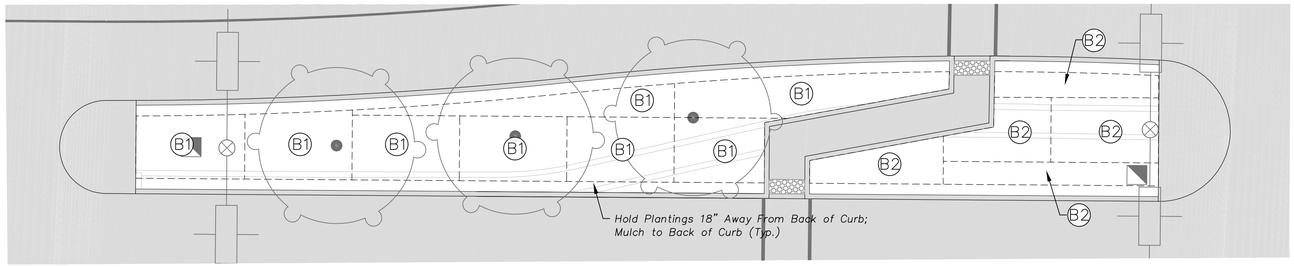
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L4 | 393 |




RESIDENTIAL MEDIAN A ENLARGEMENT | UNDERSTORY PLANTINGS




AMENITY ZONE ENLARGEMENT




Z-CROSSING ENLARGEMENT | UNDERSTORY PLANTINGS

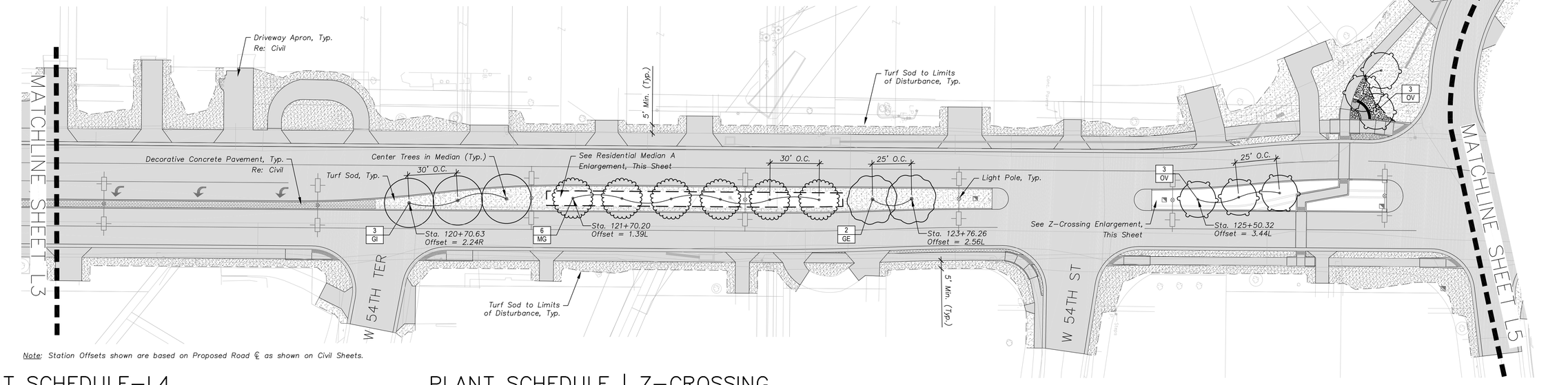
## PLANT SCHEDULE | AMENITY ZONE

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| CA2 | 38 | Crocus ancyrensis `Golden Bunch` | Golden Bunch Spring Crocus | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| AS3 | 26 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| CA3 | 26 | Carex albicans | Whitetinge Sedge | 32/38 CELL PLUG |
| CB2 | 56 | Carex flacca `Blue Zinger` | Blue Zinger Sedge | 32/38 CELL PLUG |
| EP2 | 53 | Echinacea purpurea | Purple Coneflower | 4" pot |

## LEGEND

(A) *Planting Module, See Sheets L13 and L14*

*Shovel Cut Edge, See Detail 04/L17*




*Note: Station Offsets shown are based on Proposed Road ℄ as shown on Civil Sheets.*

## PLANT SCHEDULE-L4

| TREES | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|---|---|---|---|---|---|
| GI | 3 | Gleditsia triacanthos `Imperial` | Imperial Honeylocust | B & B | 2.5" Cal. |
| GE | 2 | Gymnocladus dioica `Espresso` | Espresso Kentucky Coffeetree | B & B | 2.5" Cal. |
| MG | 6 | Metasequoia glyptostroboides | Dawn Redwood | B & B | 2.5" CAL., 10' MIN. HT. |
| OV | 6 | Ostrya virginiana | American Hophornbeam | B & B | 2.5" Cal. |
| **TURFGRASS** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** | | **SPACING** |
| | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod | | |

## PLANT SCHEDULE | Z-CROSSING

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| CA2 | 164 | Crocus ancyrensis `Golden Bunch` | Golden Bunch Spring Crocus | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| AS3 | 190 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| CA3 | 283 | Carex albicans | Whitetinge Sedge | 32/38 CELL PLUG |
| CO2 | 212 | Carex brevior | Short beak Sedge | 32/38 CELL PLUG |
| CB2 | 254 | Carex flacca `Blue Zinger` | Blue Zinger Sedge | 32/38 CELL PLUG |
| EP2 | 59 | Echinacea purpurea | Purple Coneflower | 4" pot |
| SA | 282 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |

## PLANT SCHEDULE | RESIDENTIAL MEDIAN A

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| CA2 | 156 | Crocus ancyrensis `Golden Bunch` | Golden Bunch Spring Crocus | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| AS3 | 252 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| CO2 | 240 | Carex brevior | Short beak Sedge | 32/38 CELL PLUG |
| CB2 | 300 | Carex flacca `Blue Zinger` | Blue Zinger Sedge | 32/38 CELL PLUG |
| EP2 | 180 | Echinacea purpurea | Purple Coneflower | 4" pot |
| SA | 228 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |

0 15 30 60 NORTH

KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE PLAN

L4

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
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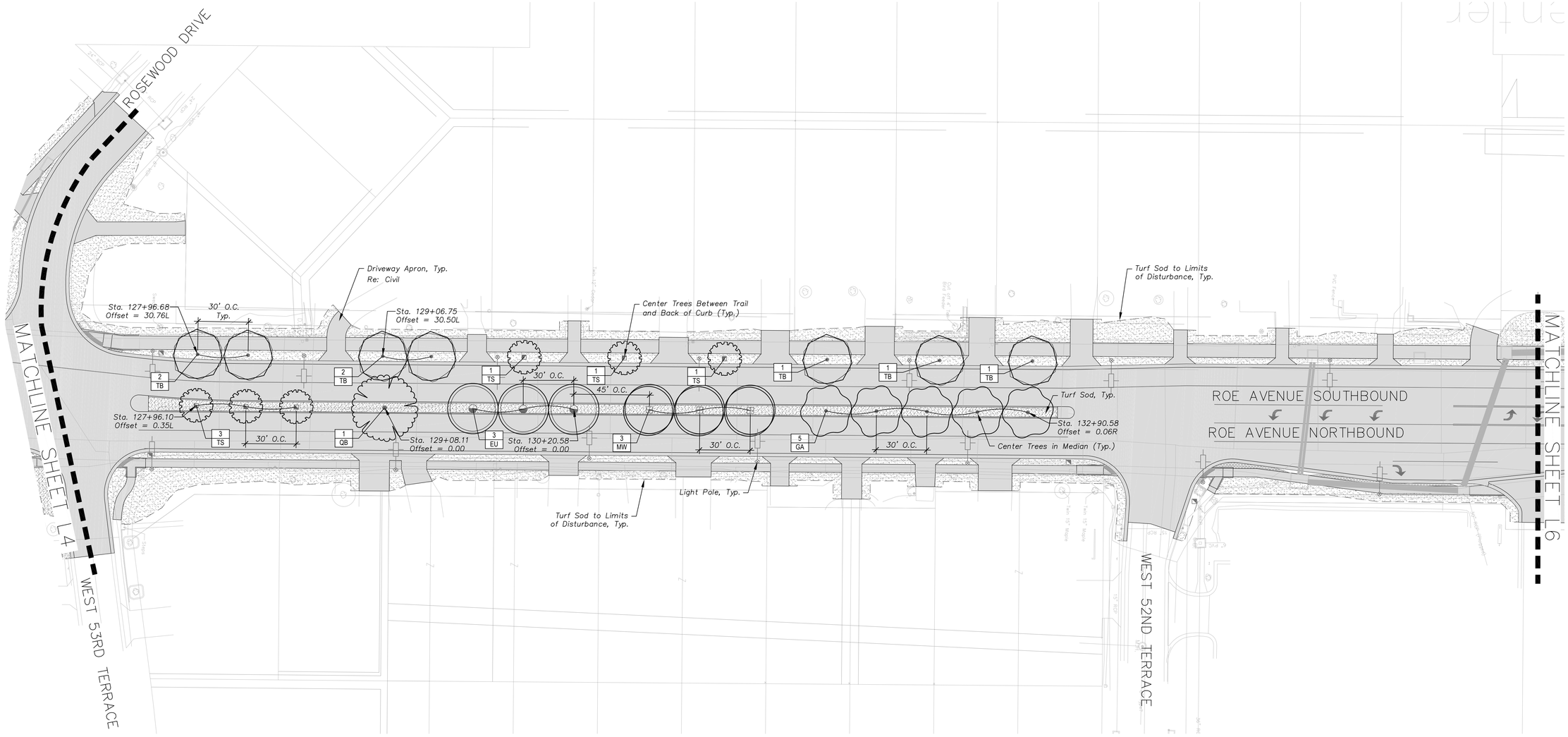
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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L5 | 393 |

# PLANT SCHEDULE-L5

| TREES | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|---|---|---|---|---|---|
| EU | 3 | Eucommia ulmoides | Hardy Rubber Tree | B & B | 2.5" Cal. |
| GA | 5 | Ginkgo biloba `Autumn Gold` ™ | Autumn Gold Ginkgo | B & B | 2.5" Cal. |
| MW | 3 | Maclura pomifera `White Shield` | White Shield Osage Orange | B & B | 2.5" Cal. |
| QB | 1 | Quercus bicolor | Swamp White Oak | B & B | 2.5" Cal. |
| TS | 6 | Taxodium distichum `Shawnee Brave` TM | Shawnee Brave Bald Cypress | B & B | 2.5" CAL., 10' MIN. HT. |
| TB | 7 | Tilia americana `Boulevard` | Boulevard Linden | B & B | 2.5" Cal. |

| TURFGRASS | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|
| | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod |




Note: Station Offsets shown are based on Proposed Road ℄ as shown on Civil Sheets.

0 15 30 60 NORTH

KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE PLAN

L5

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

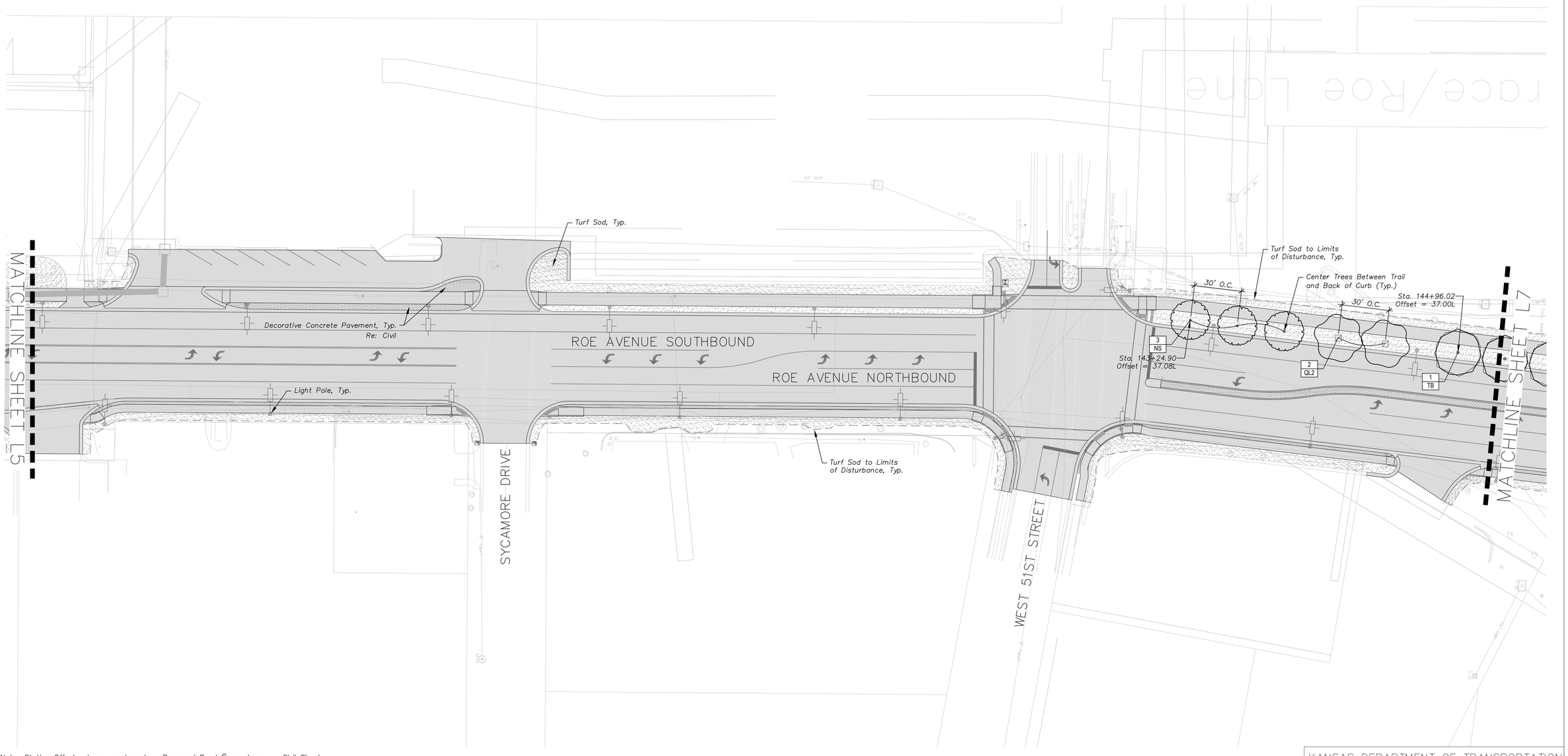
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# PLANT SCHEDULE–L6

| TREES | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|---|---|---|---|---|---|
| NS | 3 | Nyssa sylvatica `Wildfire` | Wildfire Black Gum | B & B | 2.5" Cal. |
| QL2 | 2 | Quercus laceyi | Lacey Oak | B & B | 2.5" Cal. |
| TB | 2 | Tilia americana `Boulevard` | Boulevard Linden | B & B | 2.5" Cal. |

| TURFGRASS | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|
| | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod |

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N–0661–01 | 2019 | L6 | 393 |




*Note: Station Offsets shown are based on Proposed Road ℄ as shown on Civil Sheets.*

0 15 30 60 NORTH

KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE PLAN

L6

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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N–0661–01 | 2019 | L7 | 393 |

# PLANT SCHEDULE–L7

| TREES | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|---|---|---|---|---|---|
| AS | 3 | Acer miyabei `Morton` | State Street Maple | B & B | 2.5" Cal. |
| AN | 3 | Acer truncatum x. A. plat. `Keithsform` | Norwegian Sunset® Maple | B & B | 2.5" Cal. |
| EU | 4 | Eucommia ulmoides | Hardy Rubber Tree | B & B | 2.5" Cal. |
| GI | 5 | Gleditsia triacanthos `Imperial` | Imperial Honeylocust | B & B | 2.5" Cal. |
| GE | 3 | Gymnocladus dioica `Espresso` | Espresso Kentucky Coffeetree | B & B | 2.5" Cal. |
| PE | 1 | Platanus x acerifolia `Morton Circle` | Exclamation!® Planetree | B & B | 2.5" Cal. |
| QB | 1 | Quercus bicolor | Swamp White Oak | B & B | 2.5" Cal. |
| QL | 2 | Quercus lyrata | Overcup Oak | B & B | 2.5" Cal. |
| QU | 5 | Quercus macrocarpa 'JFS-KW3' PP 22815 | Urban Pinnacle® Oak | B & B | 2.5" Cal. |
| QP | 3 | Quercus pagoda | Cherrybark Oak | B & B | 2.5" Cal. |
| TD | 3 | Taxodium distichum | Bald Cypress | B & B | 2.5" CAL., 10' MIN. HT. |
| TB | 7 | Tilia americana `Boulevard` | Boulevard Linden | B & B | 2.5" Cal. |

| TURFGRASS | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|
| | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod |




## LEGEND

—— —— *Shovel Cut Edge, See Detail 04/L17*

0 15 30 60 NORTH

*Note: Station Offsets shown are based on Proposed Road ℄ as shown on Civil Sheets.*

KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE PLAN

L7

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
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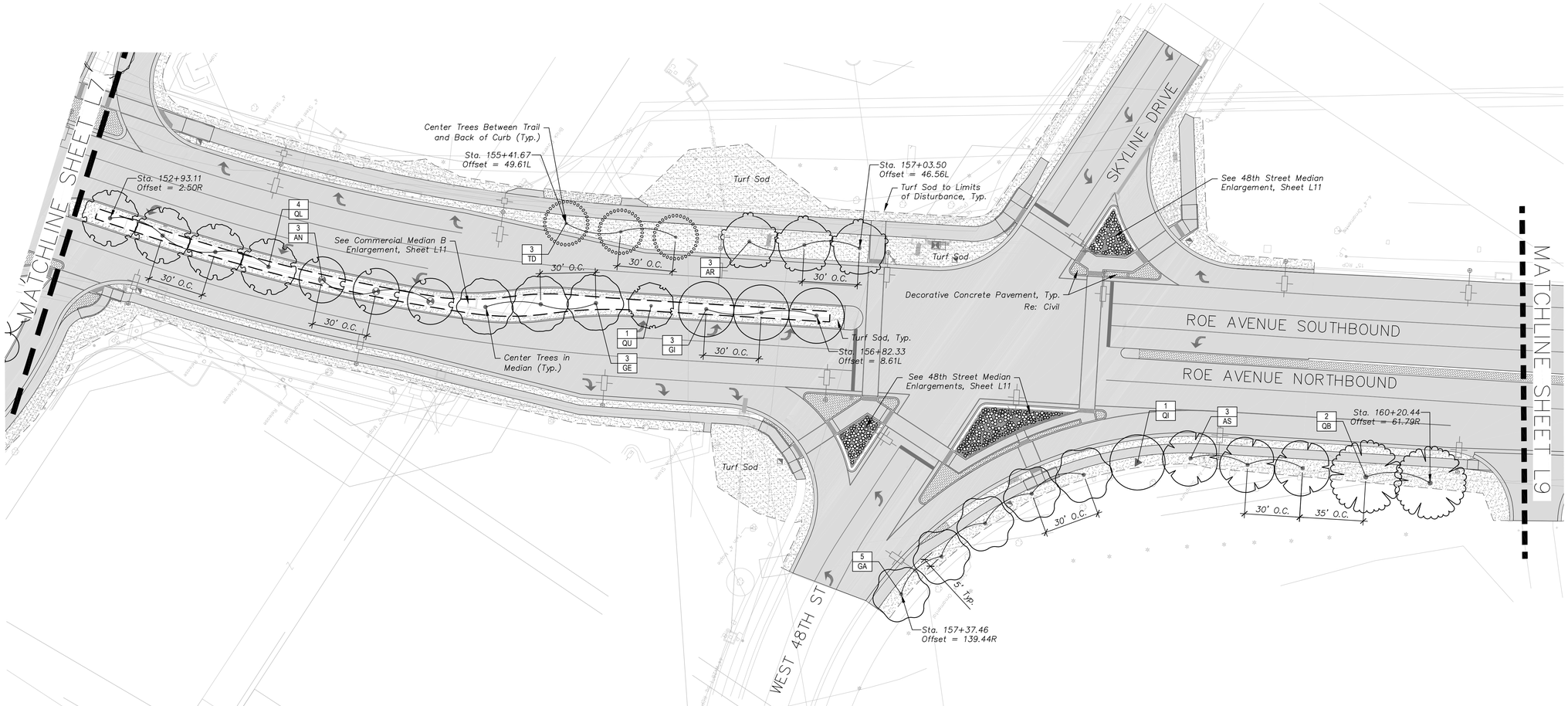
# PLANT SCHEDULE–L8

| TREES | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|---|---|---|---|---|---|
| AR | 3 | Acer miyabei `JFS-KW3AMI` | Rugged Ridge® Maple | B & B | 2.5" Cal. |
| AS | 3 | Acer miyabei `Morton` | State Street Maple | B & B | 2.5" Cal. |
| AN | 3 | Acer truncatum x. A. plat. `Keithsform` | Norwegian Sunset® Maple | B & B | 2.5" Cal. |
| GA | 5 | Ginkgo biloba `Autumn Gold` ™ | Autumn Gold Ginkgo | B & B | 2.5" Cal. |
| GI | 3 | Gleditsia triacanthos `Imperial` | Imperial Honeylocust | B & B | 2.5" Cal. |
| GE | 3 | Gymnocladus dioica `Espresso` | Espresso Kentucky Coffeetree | B & B | 2.5" Cal. |
| QB | 2 | Quercus bicolor | Swamp White Oak | B & B | 2.5" Cal. |
| QI | 1 | Quercus imbricaria | Shingle Oak | B & B | 2.5" Cal. |
| QL | 4 | Quercus lyrata | Overcup Oak | B & B | 2.5" Cal. |
| QU | 1 | Quercus macrocarpa `JFS-KW3` PP 22815 | Urban Pinnacle® Oak | B & B | 2.5" Cal. |
| TD | 3 | Taxodium distichum | Bald Cypress | B & B | 2.5" CAL., 10' MIN. HT. |

| TURFGRASS | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|
| | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod |

## LEGEND

—— —— *Shovel Cut Edge, See Detail 04/L17*




*Note: Station Offsets shown are based on Proposed Road ℄ as shown on Civil Sheets.*

0 15 30 60 NORTH

KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE PLAN

L8

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

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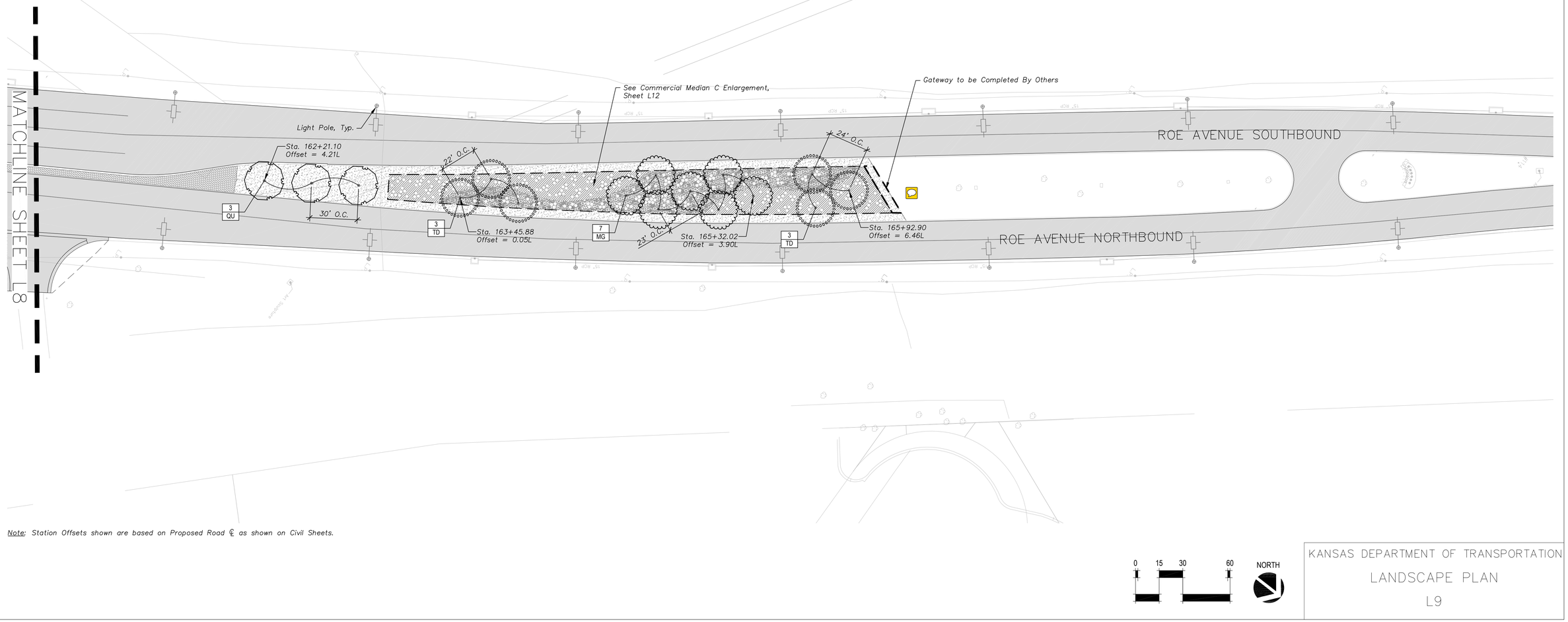
# PLANT SCHEDULE–L9

| TREES | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|---|---|---|---|---|---|
| MG | 7 | Metasequoia glyptostroboides | Dawn Redwood | B & B | 2.5" CAL., 10' MIN. HT. |
| QU | 3 | Quercus macrocarpa 'JFS-KW3' PP 22815 | Urban Pinnacle® Oak | B & B | 2.5" Cal. |
| TD | 6 | Taxodium distichum | Bald Cypress | B & B | 2.5" CAL., 10' MIN. HT. |

| TURFGRASS | CODE | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| | FT | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod |

## LEGEND

—— —— *Shovel Cut Edge, See Detail 04/L17*




*Note: Station Offsets shown are based on Proposed Road ℄ as shown on Civil Sheets.*

0 15 30 60 NORTH

KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE PLAN

L9

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

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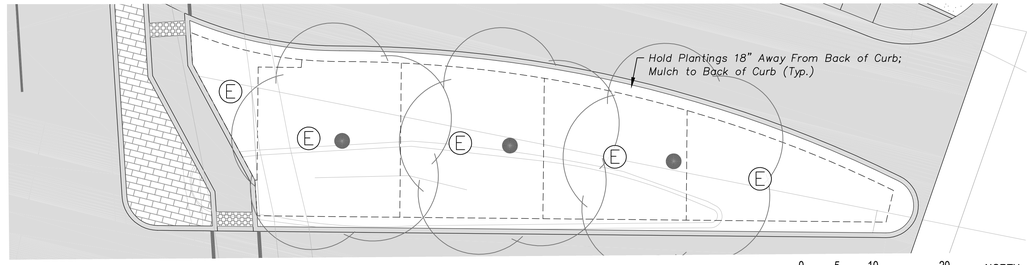
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|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L10 | 393 |

# PLANT SCHEDULE | PHILLIPS 66 ENTRANCE

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| CV | 56 | Chionodoxa forbesii `Blue Giant` | Glory of the Snow | 15 Bulbs per symbol |
| ND | 90 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| TL | 45 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| AS3 | 95 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| BB | 95 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG |
| CK | 83 | Calamagrostis x acutiflora `Karl Foerster` | Karl Foerster Feather Reed Grass | #1 Cont. |
| CN | 43 | Calamintha nepeta `Montrose White` | Montrose White Catmint | 4" pot |
| CB2 | 76 | Carex flacca `Blue Zinger` | Blue Zinger Sedge | 32/38 CELL PLUG |
| CZ | 90 | Coreopsis verticillata `Zagreb` | Zagreb Thread Leaf Coreopsis | #1 Cont. |
| SC | 127 | Salvia nemorosa `Caradonna` | Caradonna Perennial Salvia | #1 Cont. |
| SA | 99 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |
| SH4 | 114 | Sporobolus heterolepis | Prairie Dropseed | #1 Cont. |

# PLANT SCHEDULE | LOWE'S ENTRANCE

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| CV | 98 | Chionodoxa forbesii `Blue Giant` | Glory of the Snow | 15 Bulbs per symbol |
| ND | 92 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| TL | 72 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| AS3 | 173 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| AO | 51 | Aster oblongifolius `October Skies` | October Skies Aromatic Aster | Quart |
| BB | 109 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG |
| CN | 105 | Calamintha nepeta `Montrose White` | Montrose White Catmint | 4" pot |
| EP2 | 127 | Echinacea purpurea | Purple Coneflower | 4" pot |
| SC | 97 | Salvia nemorosa `Caradonna` | Caradonna Perennial Salvia | #1 Cont. |
| SA | 172 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |
| SH4 | 103 | Sporobolus heterolepis | Prairie Dropseed | #1 Cont. |



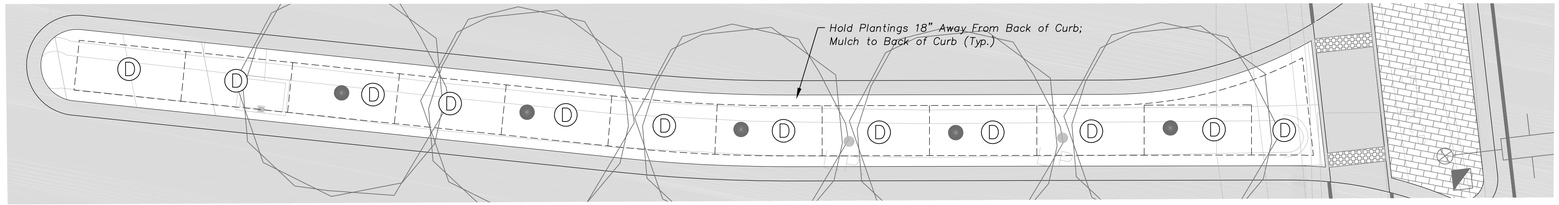

PHILLIPS 66 ENTRANCE ENLARGEMENT | UNDERSTORY PLANTINGS

0 5 10 20 NORTH

# PLANT SCHEDULE | COMMERCIAL MEDIAN A

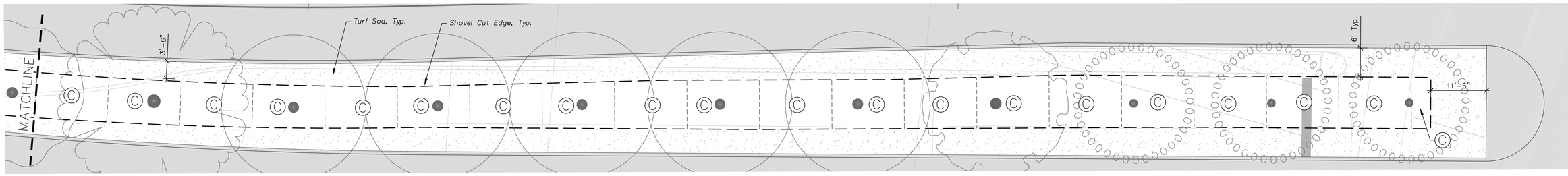
| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| CV | 332 | Chionodoxa forbesii `Blue Giant` | Glory of the Snow | 15 Bulbs per symbol |
| ND | 368 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| TL | 236 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| AS3 | 568 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| AO | 202 | Aster oblongifolius `October Skies` | October Skies Aromatic Aster | Quart |
| BB | 372 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG |
| CN | 570 | Calamintha nepeta `Montrose White` | Montrose White Catmint | 4" pot |
| EP2 | 503 | Echinacea purpurea | Purple Coneflower | 4" pot |
| SA | 504 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |
| SH4 | 469 | Sporobolus heterolepis | Prairie Dropseed | #1 Cont. |
| SH3 | 370 | Stachys officinalis `Hummelo` | Hummelo Stachys | Quart |

| TURFGRASS | BOTANICAL NAME | COMMON NAME | CONT | SPACING |
|---|---|---|---|---|
| | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod | |



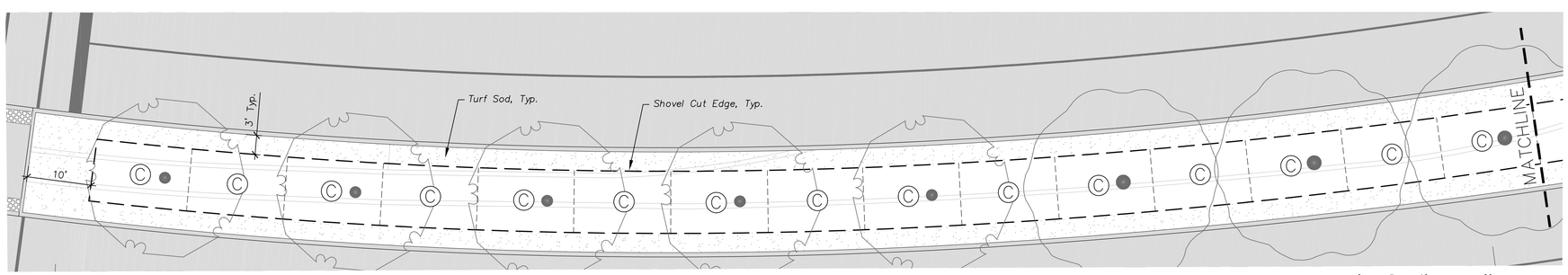

LOWE'S ENTRANCE ENLARGEMENT | UNDERSTORY PLANTINGS

0 5 10 20 NORTH




COMMERCIAL MEDIAN A ENLARGEMENT | UNDERSTORY PLANTINGS

0 5 10 20 NORTH




COMMERCIAL MEDIAN A ENLARGEMENT | UNDERSTORY PLANTINGS

0 5 10 20 NORTH

## LEGEND

- (A) Planting Module, See Sheets L13 and L14
- Shovel Cut Edge, See Detail 04/L17

KANSAS DEPARTMENT OF TRANSPORTATION
LANDSCAPE PLAN ENLARGEMENTS
L10

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

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File : L10 LANDSCAPE PLAN ENLARGEMENTS.dwg

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L11 | 393 |

# PLANT SCHEDULE | 48TH ST MEDIANS

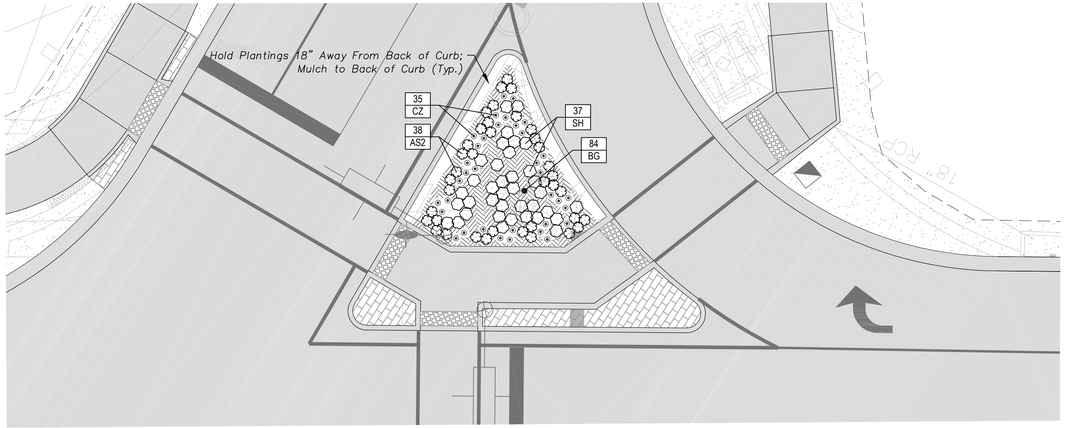
| GRASSES & PERENNIALS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| AS2 | 161 | Allium x `Summer Beauty` | Summer Beauty Allium | #1 Cont. |
| CZ | 130 | Coreopsis verticillata `Zagreb` | Zagreb Thread Leaf Coreopsis | #1 Cont. |
| SH | 131 | Sporobolus heterolepis | Prairie Dropseed | Quart |

| GRASSES (HATCH) | CODE | QTY | BOTANICAL NAME | COMMON NAME | CONT | SPACING |
|---|---|---|---|---|---|---|
| | BG | 431 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG | 15" o.c. |

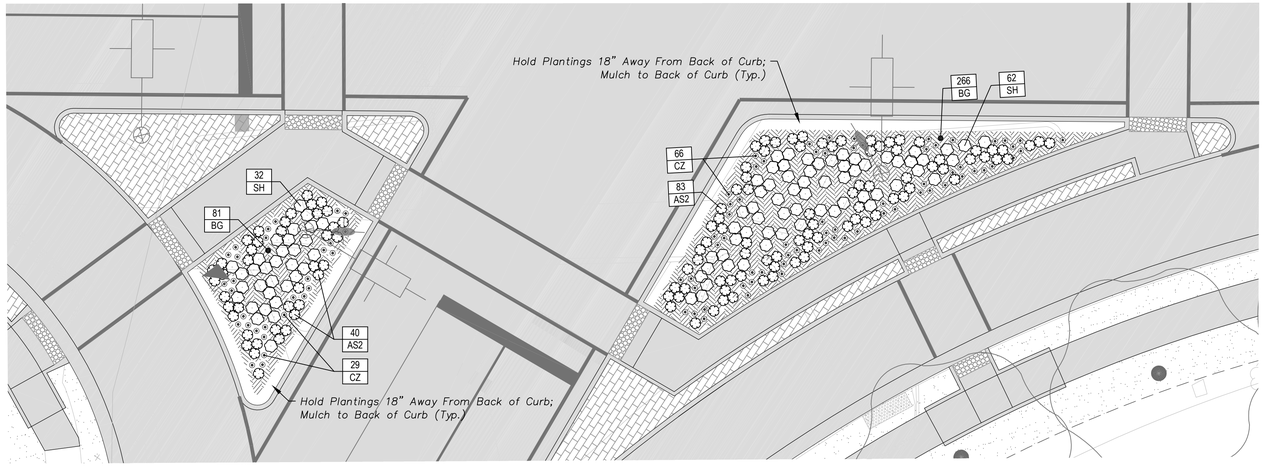
# PLANT SCHEDULE | COMMERCIAL MEDIAN B

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| CV | 150 | Chionodoxa forbesii `Blue Giant` | Glory of the Snow | 15 Bulbs per symbol |
| ND | 136 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| TL | 132 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |

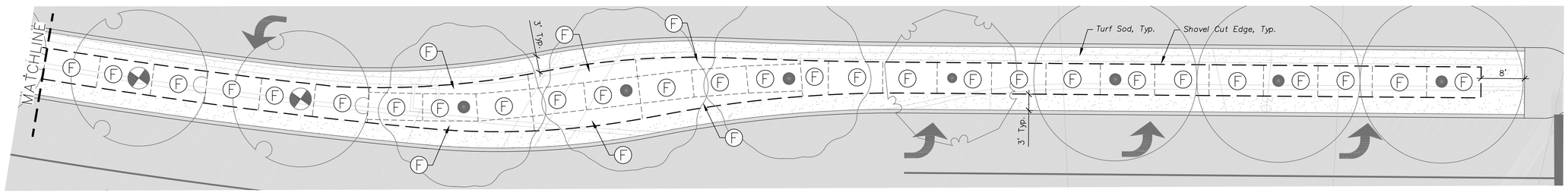
| GRASSES & PERENNIALS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| AS3 | 154 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| AO | 65 | Aster oblongifolius `October Skies` | October Skies Aromatic Aster | Quart |
| BB | 154 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG |
| SA | 184 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |
| SH4 | 93 | Sporobolus heterolepis | Prairie Dropseed | #1 Cont. |
| SH3 | 177 | Stachys officinalis `Hummelo` | Hummelo Stachys | Quart |



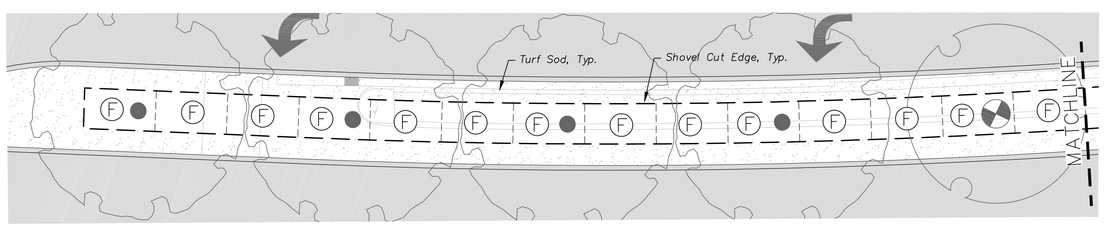

48TH STREET MEDIAN ENLARGEMENT | UNDERSTORY PLANTINGS




48TH STREET MEDIAN ENLARGEMENT | UNDERSTORY PLANTINGS




COMMERCIAL MEDIAN B ENLARGEMENT | UNDERSTORY PLANTINGS




COMMERCIAL MEDIAN B ENLARGEMENT | UNDERSTORY PLANTINGS

## LEGEND

- (A) Planting Module, See Sheets L13 and L14
- Shovel Cut Edge, See Detail 04/L17

KANSAS DEPARTMENT OF TRANSPORTATION
LANDSCAPE PLAN ENLARGEMENTS
L11

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

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File : L11 LANDSCAPE PLAN ENLARGEMENTS.dwg

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L12 | 393 |

# PLANT SCHEDULE-L12

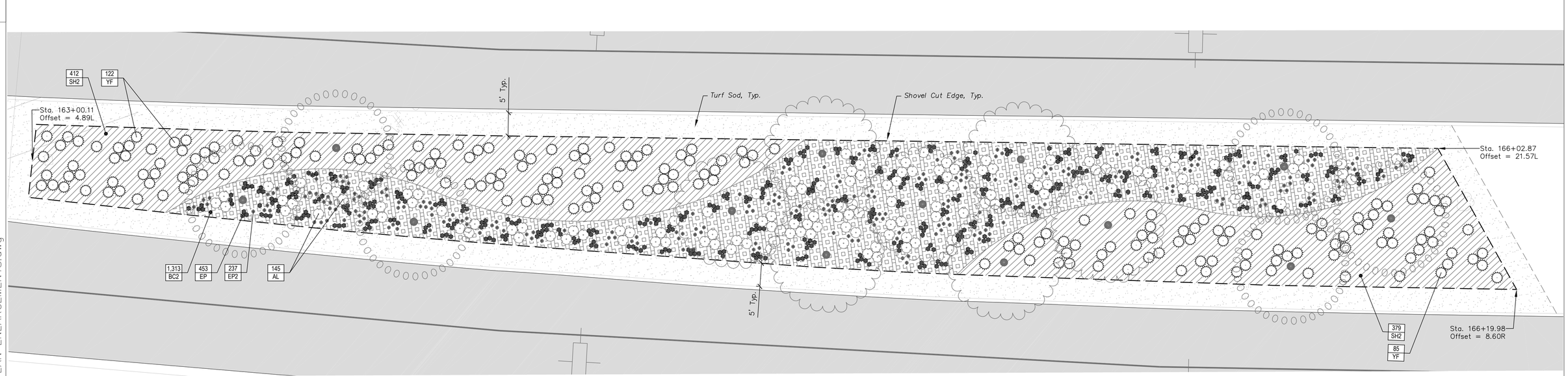
| GRASSES & PERENNIALS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| AL | 145 | Amorpha canescens | Leadplant | #1 Cont. |
| EP | 453 | Echinacea pallida | Pale Purple Coneflower | 4" pot |
| EP2 | 237 | Echinacea purpurea | Purple Coneflower | 4" pot |
| YF | 207 | Yucca filamentosa | Adam`s Needle | #1 Cont. |

| GRASSES (HATCH) | CODE | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|---|
| | BC2 | 1,313 | Bouteloua curtipendula | Side Oats Grama | 32/38 CELL PLUG |
| | SH2 | 791 | Sporobolus heterolepis | Prairie Dropseed | Quart |

| TURFGRASS | CODE | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| | FT | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod |

## LEGEND

—— —— Shovel Cut Edge, See Detail 04/L17




# COMMERCIAL MEDIAN B ENLARGEMENT | UNDERSTORY PLANTINGS

Note: Station Offsets shown are based on Proposed Road ℄ as shown on Civil Sheets.

0 5 10 20 NORTH

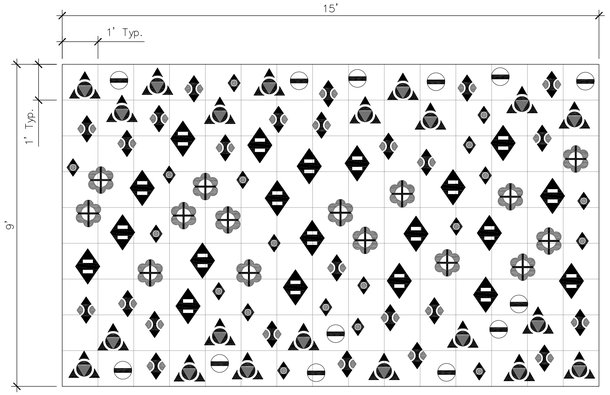
KANSAS DEPARTMENT OF TRANSPORTATION
LANDSCAPE PLAN ENLARGEMENTS
L12

DATE
BY
REFERENCES NOTED
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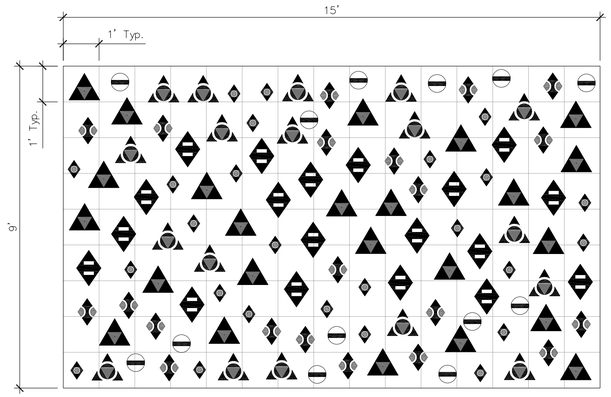
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L13 | 393 |

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |



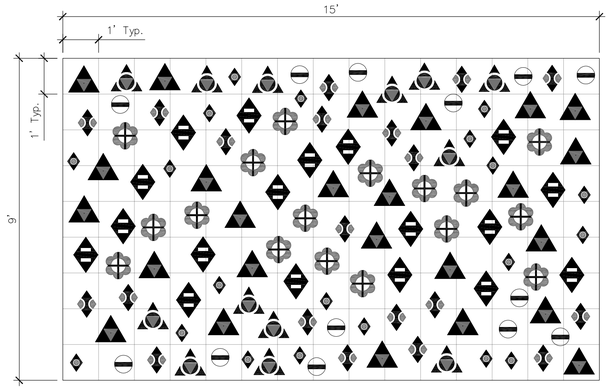

## PLANTING MODULE A | UNDERSTORY PLANTINGS

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| | 13 | Crocus ancyrensis `Golden Bunch` | Golden Bunch Spring Crocus | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| | 21 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| | 20 | Carex brevior | Short beak Sedge | 32/38 CELL PLUG |
| | 25 | Carex flacca `Blue Zinger` | Blue Zinger Sedge | 32/38 CELL PLUG |
| | 15 | Echinacea purpurea | Purple Coneflower | 4" pot |
| | 19 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |



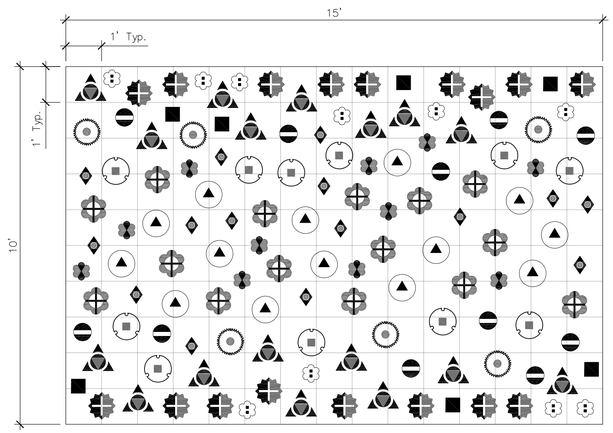

## PLANTING MODULE B1 | UNDERSTORY PLANTINGS

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| | 13 | Crocus ancyrensis `Golden Bunch` | Golden Bunch Spring Crocus | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| | 18 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| | 24 | Carex albicans | Whitetinge Sedge | 32/38 CELL PLUG |
| | 19 | Carex brevior | Short beak Sedge | 32/38 CELL PLUG |
| | 21 | Carex flacca `Blue Zinger` | Blue Zinger Sedge | 32/38 CELL PLUG |
| | 25 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |



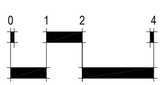

## PLANTING MODULE B2 | UNDERSTORY PLANTINGS

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| | 13 | Crocus ancyrensis `Golden Bunch` | Golden Bunch Spring Crocus | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| | 13 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| | 25 | Carex albicans | Whitetinge Sedge | 32/38 CELL PLUG |
| | 18 | Carex brevior | Short beak Sedge | 32/38 CELL PLUG |
| | 20 | Carex flacca `Blue Zinger` | Blue Zinger Sedge | 32/38 CELL PLUG |
| | 17 | Echinacea purpurea | Purple Coneflower | 4" pot |
| | 20 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |




## PLANTING MODULE C | UNDERSTORY PLANTINGS

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| | 10 | Chionodoxa forbesii `Blue Giant` | Glory of the Snow | 15 Bulbs per symbol |
| | 11 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| | 7 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| | 17 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| | 6 | Aster oblongifolius `October Skies` | October Skies Aromatic Aster | Quart |
| | 11 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG |
| | 17 | Calamintha nepeta `Montrose White` | Montrose White Catmint | 4" pot |
| | 15 | Echinacea purpurea | Purple Coneflower | 4" pot |
| | 15 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |
| | 14 | Sporobolus heterolepis | Prairie Dropseed | #1 Cont. |
| | 11 | Stachys officinalis `Hummelo` | Hummelo Stachys | Quart |




KANSAS DEPARTMENT OF TRANSPORTATION

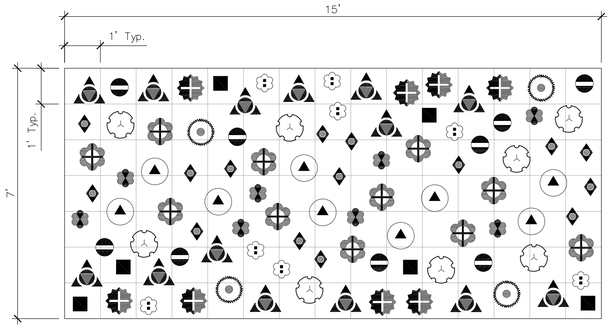
PLANTING MODULES

L13

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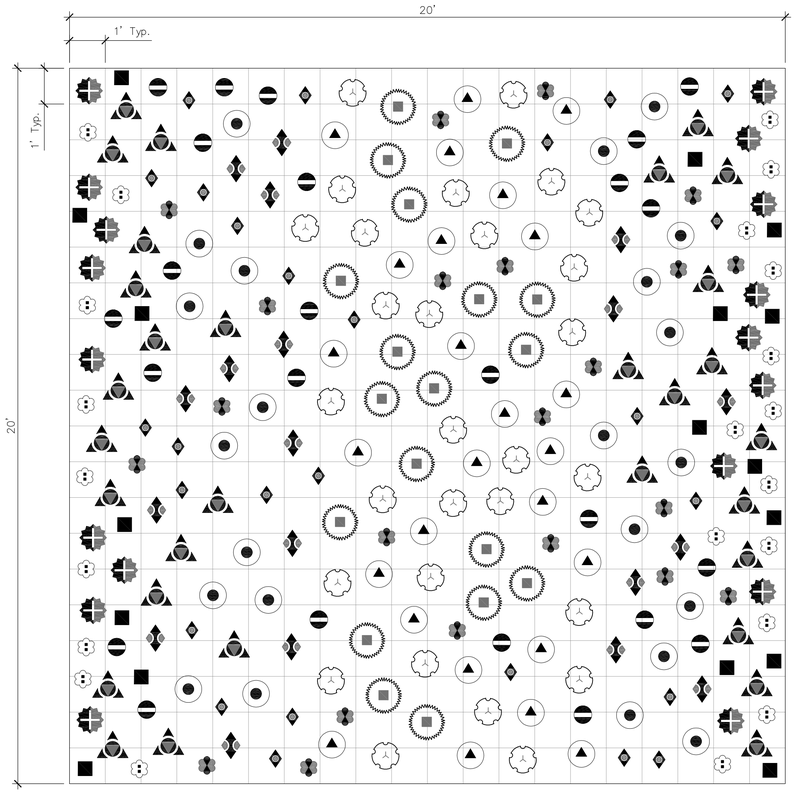
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L14 | 393 |

| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
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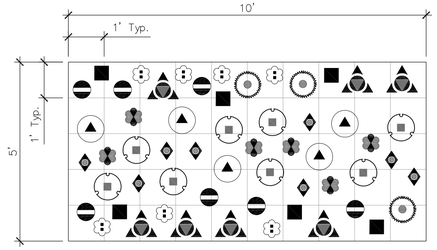

## PLANTING MODULE D | UNDERSTORY PLANTINGS

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| | 8 | Chionodoxa forbesii `Blue Giant` | Glory of the Snow | 15 Bulbs per symbol |
| | 8 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| | 6 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| | 14 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| | 4 | Aster oblongifolius `October Skies` | October Skies Aromatic Aster | Quart |
| | 9 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG |
| | 8 | Calamintha nepeta `Montrose White` | Montrose White Catmint | 4" pot |
| | 11 | Echinacea purpurea | Purple Coneflower | 4" pot |
| | 8 | Salvia nemorosa `Caradonna` | Caradonna Perennial Salvia | #1 Cont. |
| | 15 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |
| | 9 | Sporobolus heterolepis | Prairie Dropseed | #1 Cont. |



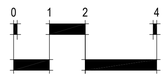

## PLANTING MODULE E | UNDERSTORY PLANTINGS

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| | 22 | Chionodoxa forbesii `Blue Giant` | Glory of the Snow | 15 Bulbs per symbol |
| | 22 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| | 17 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| | 31 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| | 24 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG |
| | 19 | Calamagrostis x acutiflora `Karl Foerster` | Karl Foerster Feather Reed Grass | #1 Cont. |
| | 18 | Calamintha nepeta `Montrose White` | Montrose White Catmint | 4" pot |
| | 19 | Carex flacca `Blue Zinger` | Blue Zinger Sedge | 32/38 CELL PLUG |
| | 23 | Coreopsis verticillata `Zagreb` | Zagreb Thread Leaf Coreopsis | #1 Cont. |
| | 29 | Salvia nemorosa `Caradonna` | Caradonna Perennial Salvia | #1 Cont. |
| | 26 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |
| | 26 | Sporobolus heterolepis | Prairie Dropseed | #1 Cont. |




## PLANTING MODULE F | UNDERSTORY PLANTINGS

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| | 7 | Chionodoxa forbesii `Blue Giant` | Glory of the Snow | 15 Bulbs per symbol |
| | 6 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| | 6 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |
| **GRASSES & PERENNIALS** | **QTY** | **BOTANICAL NAME** | **COMMON NAME** | **CONT** |
| | 7 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| | 3 | Aster oblongifolius `October Skies` | October Skies Aromatic Aster | Quart |
| | 7 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG |
| | 8 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |
| | 5 | Sporobolus heterolepis | Prairie Dropseed | #1 Cont. |
| | 8 | Stachys officinalis `Hummelo` | Hummelo Stachys | Quart |




KANSAS DEPARTMENT OF TRANSPORTATION

PLANTING MODULES

L14

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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L15 | 393 |

# OVERALL PLANT SCHEDULE

| TREES | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|---|---|---|---|---|---|
| AR | 6 | Acer miyabei `JFS-KW3AMI` | Rugged Ridge® Maple | B & B | 2.5" Cal. |
| AS | 11 | Acer miyabei `Morton` | State Street Maple | B & B | 2.5" Cal. |
| AN | 9 | Acer truncatum x. A. plat. `Keithsform` | Norwegian Sunset® Maple | B & B | 2.5" Cal. |
| EU | 10 | Eucommia ulmoides | Hardy Rubber Tree | B & B | 2.5" Cal. |
| GA | 10 | Ginkgo biloba `Autumn Gold` ™ | Autumn Gold Ginkgo | B & B | 2.5" Cal. |
| GI | 11 | Gleditsia triacanthos `Imperial` | Imperial Honeylocust | B & B | 2.5" Cal. |
| GE | 8 | Gymnocladus dioica `Espresso` | Espresso Kentucky Coffeetree | B & B | 2.5" Cal. |
| MW | 3 | Maclura pomifera `White Shield` | White Shield Osage Orange | B & B | 2.5" Cal. |
| MG | 13 | Metasequoia glyptostroboides | Dawn Redwood | B & B | 2.5" CAL., 10` MIN. HT. |
| NS | 3 | Nyssa sylvatica `Wildfire` | Wildfire Black Gum | B & B | 2.5" Cal. |
| OV | 6 | Ostrya virginiana | American Hophornbeam | B & B | 2.5" Cal. |
| PE | 2 | Platanus x acerifolia `Morton Circle` | Exclamation!® Planetree | B & B | 2.5" Cal. |
| QB | 5 | Quercus bicolor | Swamp White Oak | B & B | 2.5" Cal. |
| QI | 4 | Quercus imbricaria | Shingle Oak | B & B | 2.5" Cal. |
| QL2 | 2 | Quercus laceyi | Lacey Oak | B & B | 2.5" Cal. |
| QL | 5 | Quercus lyrata | Overcup Oak | B & B | 2.5" Cal. |
| QU | 9 | Quercus macrocarpa `JFS-KW3` PP 22815 | Urban Pinnacle® Oak | B & B | 2.5" Cal. |
| QP | 3 | Quercus pagoda | Cherrybark Oak | B & B | 2.5" Cal. |
| TD | 12 | Taxodium distichum | Bald Cypress | B & B | 2.5" CAL., 10` MIN. HT. |
| TS | 6 | Taxodium distichum `Shawnee Brave` TM | Shawnee Brave Bald Cypress | B & B | 2.5" CAL., 10` MIN. HT. |
| TB | 15 | Tilia americana `Boulevard` | Boulevard Linden | B & B | 2.5" Cal. |

| BULBS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| CV | 834 | Chionodoxa forbesii `Blue Giant` | Glory of the Snow | 15 Bulbs per symbol |
| CA2 | 358 | Crocus ancyrensis `Golden Bunch` | Golden Bunch Spring Crocus | 10 Bulbs per symbol |
| ND | 913 | Narcissus x `Dutch Master` | Dutch Master Large Yellow Daffodil | 4 Bulbs per symbol |
| TL | 671 | Tulipa x `Little Beauty` | Little Beauty Tulip | 10 Bulbs per symbol |

| GRASSES & PERENNIALS | QTY | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|---|
| AS2 | 161 | Allium x `Summer Beauty` | Summer Beauty Allium | #1 Cont. |
| AS3 | 1,692 | Allium x `Summer Beauty` | Summer Beauty Allium | 4" pot |
| AL | 145 | Amorpha canescens | Leadplant | #1 Cont. |
| AV | 49 | Andropogon virginicus | Broomsedge Bluestem | 1 Qt. |
| AO | 403 | Aster oblongifolius `October Skies` | October Skies Aromatic Aster | Quart |
| BB | 911 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG |
| CK | 83 | Calamagrostis x acutiflora `Karl Foerster` | Karl Foerster Feather Reed Grass | #1 Cont. |
| CN | 770 | Calamintha nepeta `Montrose White` | Montrose White Catmint | 4" pot |
| CA3 | 309 | Carex albicans | Whitetinge Sedge | 32/38 CELL PLUG |
| CO2 | 452 | Carex brevior | Short beak Sedge | 32/38 CELL PLUG |
| CB2 | 686 | Carex flacca `Blue Zinger` | Blue Zinger Sedge | 32/38 CELL PLUG |
| CZ | 220 | Coreopsis verticillata `Zagreb` | Zagreb Thread Leaf Coreopsis | #1 Cont. |
| DC | 36 | Dianthus carthusianorum | Clusterhead Pink | 1 Qt. |
| EP | 453 | Echinacea pallida | Pale Purple Coneflower | 4" pot |
| EP3 | 37 | Echinacea paradoxa | Bush`s Coneflower | 4" pot |
| EP2 | 1,288 | Echinacea purpurea | Purple Coneflower | 4" pot |
| ER | 49 | Echinops ritro | Globe Thistle | 1 Qt. |
| PB | 30 | Penstemon barbatus | Beardlip Penstemon | 1 Qt. |
| SC | 224 | Salvia nemorosa `Caradonna` | Caradonna Perennial Salvia | #1 Cont. |
| SA | 1,676 | Sesleria autumnalis | Autumn Moor Grass | 32/38 CELL PLUG |
| SS | 57 | Solidago speciosa | Showy Goldenrod | 1 Qt. |
| SH4 | 898 | Sporobolus heterolepis | Prairie Dropseed | #1 Cont. |
| SH | 131 | Sporobolus heterolepis | Prairie Dropseed | Quart |
| SH3 | 749 | Stachys officinalis `Hummelo` | Hummelo Stachys | Quart |
| YF | 207 | Yucca filamentosa | Adam`s Needle | #1 Cont. |

| GRASSES (HATCH) | QTY | BOTANICAL NAME | COMMON NAME | CONT | SPACING |
|---|---|---|---|---|---|
| BC2 | 1,239 | Bouteloua curtipendula | Side Oats Grama | 32/38 CELL PLUG | 18" o.c. |
| BG | 431 | Bouteloua gracilis `Blonde Ambition` | Blonde Ambition Blue Grama | 32/38 CELL PLUG | 15" o.c. |
| SH2 | 791 | Sporobolus heterolepis | Prairie Dropseed | Quart | 24" o.c. |

| TURFGRASS | BOTANICAL NAME | COMMON NAME | CONT |
|---|---|---|---|
| | Festuca arundinacea ``Turf-Type`` | Turf-Type Tall Fescue | sod |

KANSAS DEPARTMENT OF TRANSPORTATION

OVERALL PLANT SCHEDULE

L15

| REFERENCES | BY | DATE |
|---|---|---|
| REFERENCES NOTED | | |
| CHECKED | | |

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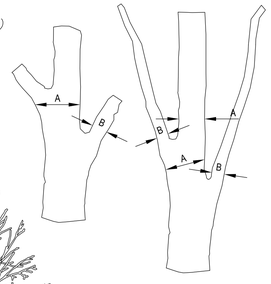
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L16 | 393 |

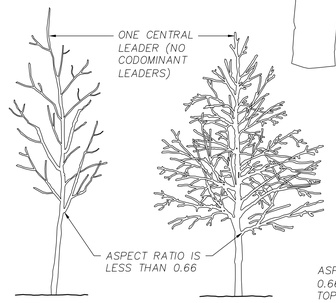
| DATE | BY | REFERENCES NOTED | REFERENCES CHECKED |
|---|---|---|---|
| | | | |

NOTES:

1. ASPECT RATIO SHALL BE LESS THAN 0.66 ON ALL BRANCH UNIONS. ASPECT RATIO IS THE DIAMETER OF BRANCH (B) DIVIDED BY THE DIAMETER OF THE TRUNK (A) AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.
2. ANY TREE NOT MEETING THE CROWN OBSERVATIONS DETAIL MAY BE REJECTED.

## ACCEPTABLE

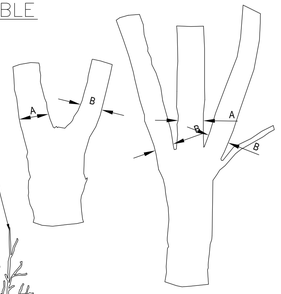


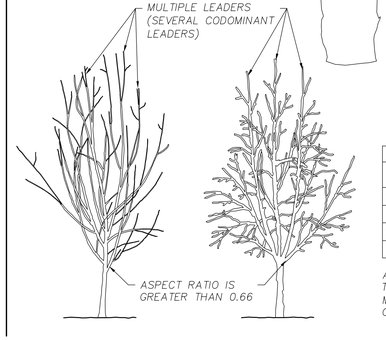




| EXAMPLE | | |
|---|---|---|
| A | B | ASPECT RATIO |
| 1.50" | 0.50" | 0.33 |
| 2.50" | 0.90" | 0.36 |
| 2.0" | 1.00" | 0.50 |
| 2.50" | 1.60" | 0.64 |

ASPECT RATIO OF B:A LESS THAN 0.66 AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.

## REJECTABLE




| EXAMPLE | | |
|---|---|---|
| A | B | ASPECT RATIO |
| 2.50" | 1.80" | 0.72 |
| 2.0" | 2.0" | 1.0 |
| 2.50" | 2.0" | 0.80 |
| 4.0" | 3.0" | 0.75 |

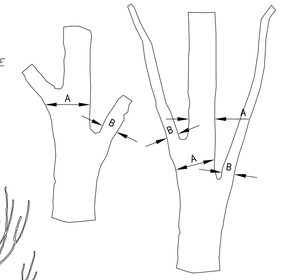
ASPECT RATIO OF B:A GREATER THAN OR EQUAL TO 0.66 AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.

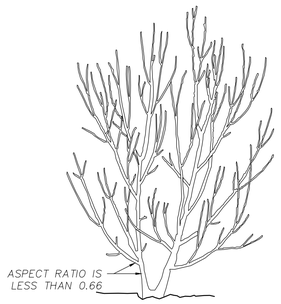
# CROWN OBSERVATIONS – SHADE TREE
N.T.S. 01

NOTES:

1. ASPECT RATIO SHALL BE LESS THAN 0.66 ON ALL BRANCH UNIONS. ASPECT RATIO IS THE DIAMETER OF BRANCH (B) DIVIDED BY THE DIAMETER OF THE TRUNK (A) AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.
2. ANY TREE NOT MEETING THE CROWN OBSERVATIONS DETAIL MAY BE REJECTED.

## ACCEPTABLE

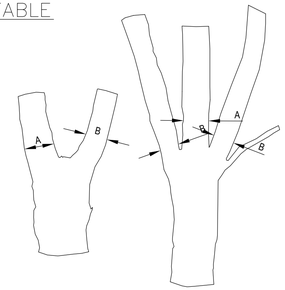



| EXAMPLE | | |
|---|---|---|
| A | B | ASPECT RATIO |
| 1.50" | 0.50" | 0.33 |
| 2.50" | 0.90" | 0.36 |
| 2.0" | 1.00" | 0.50 |
| 2.50" | 1.60" | 0.64 |

ASPECT RATIO OF B:A LESS THAN 0.66 AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.

## REJECTABLE







| EXAMPLE | | |
|---|---|---|
| A | B | ASPECT RATIO |
| 2.50" | 1.80" | 0.72 |
| 2.0" | 2.0" | 1.0 |
| 2.50" | 2.0" | 0.80 |
| 4.0" | 3.0" | 0.75 |

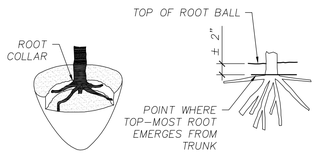
ASPECT RATIO OF B:A GREATER THAN OR EQUAL TO 0.66 AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.

# CROWN OBSERVATIONS – MULTI-STEM TREE
N.T.S. 02

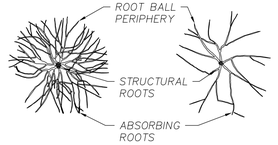
NOTES:

1. OBSERVATIONS OF ROOTS SHALL OCCUR PRIOR TO ACCEPTANCE. ROOTS AND SOIL MAY BE REMOVED DURING THE OBSERVATION PROCESS; SUBSTRATE/SOIL SHALL BE REPLACED AFTER THE OBSERVATIONS HAVE BEEN COMPLETED.
2. SEE SPECIFICATIONS FOR OBSERVATION PROCESS AND REQUIREMENTS.

## ACCEPTABLE

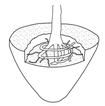



THE POINT WHERE TOP-MOST ROOT(S) EMERGES FROM THE TRUNK (ROOT COLLAR) SHOULD BE WITHIN THE TOP 2" OF SUBSTRATE. THE ROOT COLLAR AND THE ROOT BALL INTERIOR SHOULD BE FREE OF DEFECTS INCLUDING CIRCLING, KINKED, ASCENDING, AND STEM GIRDLING ROOTS. STRUCTURAL ROOTS SHALL REACH THE PERIPHERY NEAR THE TOP OF THE ROOT BALL.




ROOTS RADIATE FROM TRUNK AND REACH SIDE OF ROOT BALL WITHOUT DEFECTING DOWN OR AROUND.

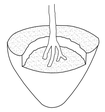
## REJECTABLE



STRUCTURAL ROOTS CIRCLE INTERIOR OF ROOT BALL. NO STRUCTURAL ROOTS ARE HORIZONTAL AND REACH THE ROOT BALL PERIPHERY NEAR THE TOP OF THE ROOT BALL.



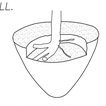

ONLY ABSORBING ROOTS REACH THE PERIPHERY NEAR THE TOP OF THE ROOT BALL. STRUCTURAL ROOTS MOSTLY WRAP OR ARE DEFLECTED ON THE ROOT BALL INTERIOR.



STRUCTURAL ROOTS DESCEND INTO ROOT BALL INTERIOR. NO STRUCTURAL ROOTS ARE HORIZONTAL AND REACH THE ROOT BALL PERIPHERY NEAR THE TOP OF THE ROOT BALL.



STRUCTURAL ROOTS CIRCLE AND DO NOT RADIATE FROM THE TRUNK.



STRUCTURAL ROOTS PRIMARILY GROW TO ONE SIDE.

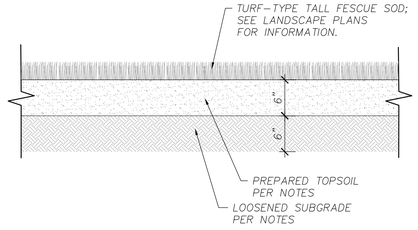



STRUCTURAL ROOTS MISSING FROM ONE SIDE, AND/OR GROW TANGENT TO TRUNK.

# ROOT OBSERVATIONS – B&B
N.T.S. 03

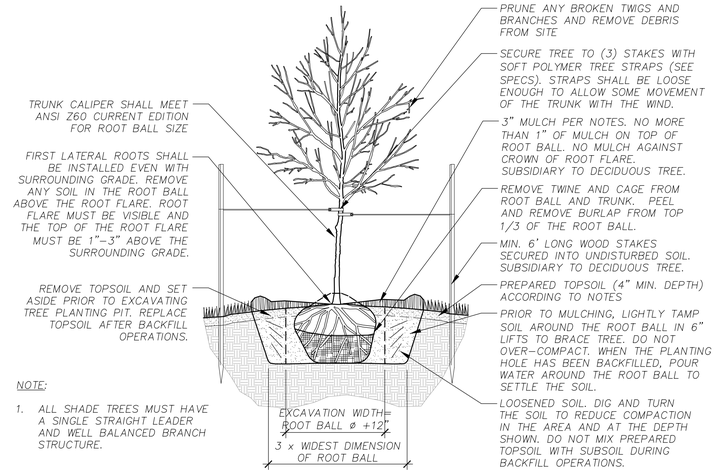
NOTES:

1. REFER TO LANDSCAPE SOIL PREPARATION NOTES FOR PREPARATION OF TURF AREAS PRIOR TO SODDING.
2. REFER TO TURF AND GRASSES NOTES FOR SOIL AMENDMENTS TO BE ADDED AT TIME OF SODDING.
3. PREPARED TOPSOIL SHALL NOT BE PLACED BEFORE SUBGRADE HAS BEEN LOOSENED.




SECTION

# FESCUE SOD
N.T.S. 04




NOTE:

1. ALL SHADE TREES MUST HAVE A SINGLE STRAIGHT LEADER AND WELL BALANCED BRANCH STRUCTURE.

# DECIDUOUS TREE – B&B
N.T.S. 05

KANSAS DEPARTMENT OF TRANSPORTATION

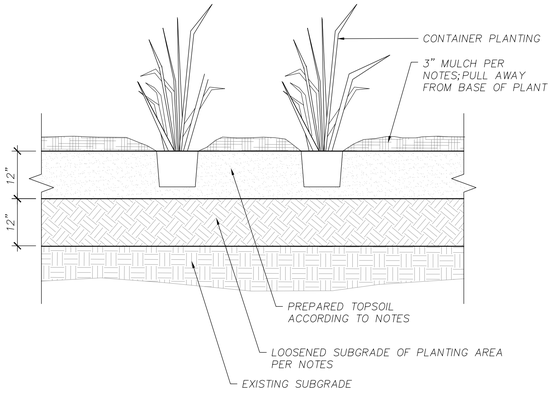
LANDSCAPE DETAILS

L16

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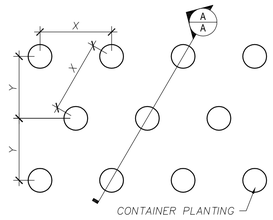
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L17 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |




SECTION A-A

NOTE:
X = SPACING PER PLANT SCHEDULE
Y = 0.866 MULTIPLIED BY "X"

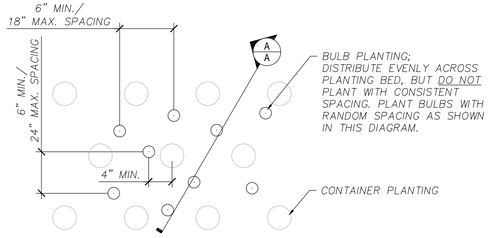



PLAN

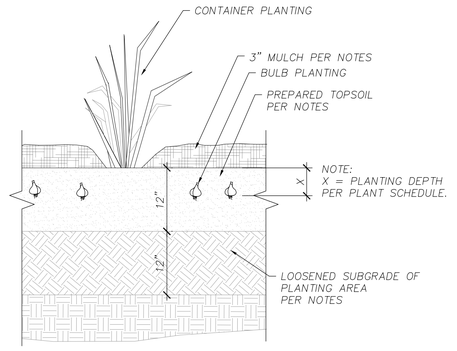
NOTES:

1. REFER TO LANDSCAPE SOIL PREPARATION NOTES FOR PREPARATION OF PLANTING BED TOPSOIL PRIOR TO PLANTING.
2. REFER TO PLANTS NOTES FOR SOIL AMENDMENTS TO BE ADDED AT TIME OF PLANTING.
3. PREPARED TOPSOIL SHALL NOT BE PLACED BEFORE SUBGRADE HAS BEEN LOOSENED.

# PERENNIAL PLANTING N.T.S. 01




PLAN

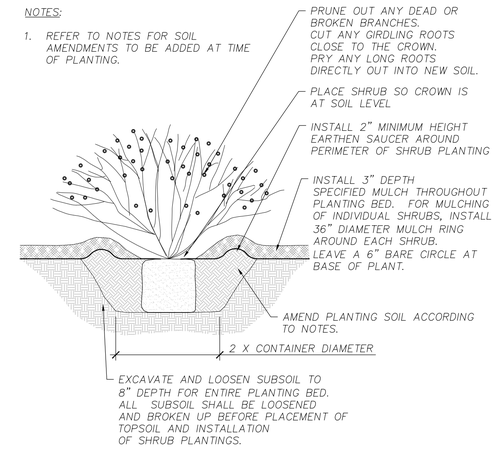



SECTION A-A

# BULB PLANTING N.T.S. 02

NOTES:

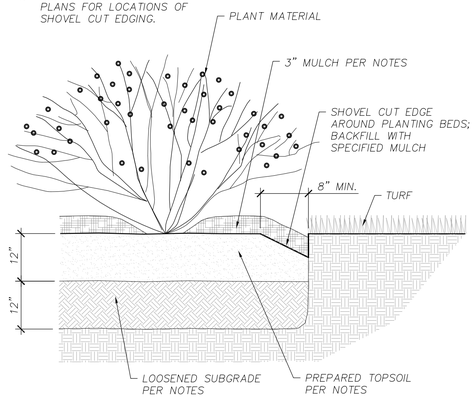
1. REFER TO NOTES FOR SOIL AMENDMENTS TO BE ADDED AT TIME OF PLANTING.



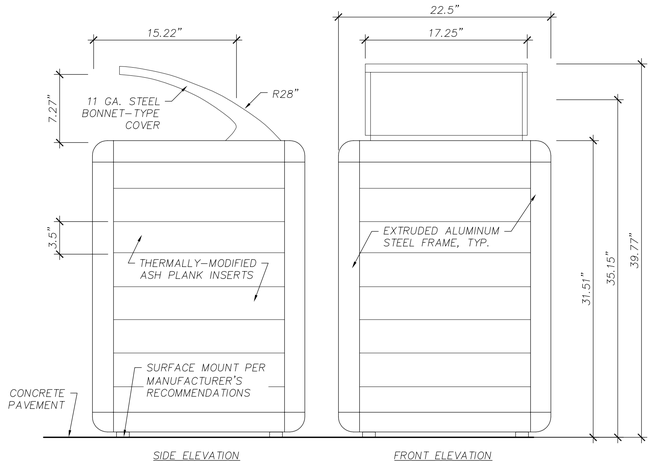

# SHRUB PLANTING N.T.S. 03

NOTE:

1. REFER TO LANDSCAPE PLANS FOR LOCATIONS OF SHOVEL CUT EDGING.



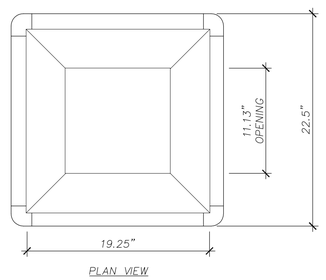

# SHOVEL CUT EDGE N.T.S. 04



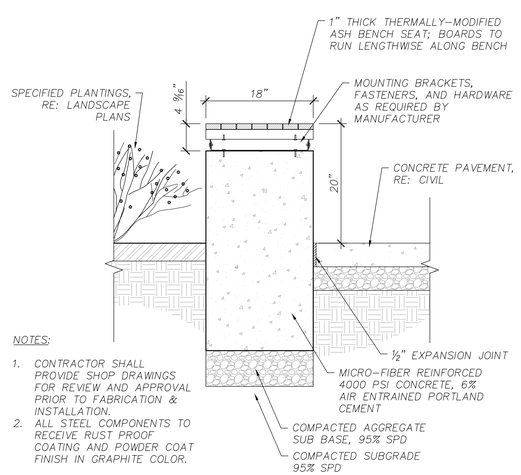

MATERIAL: NOMINAL 1" X 4" THERMALLY-MODIFIED ASH PLANKS; EXTRUDED ALUMINUM STEEL FRAME. THE BUILT-IN TAPERED BONNET TOP IS MADE FROM 11 GAUGE STEEL AND COVERS A 11.13" WASTE OPENING
FINISH: FADE-RESISTANT, POWDER COATED STEEL COMPONENTS SHALL RECEIVE A PRIMER TO PREVENT RUSTING.
COLOR: TEXTURED CHARCOAL (DARK GREY)
CAPACITY: 35 GAL.
WEIGHT: 114 LBS

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.




# 35 GAL. WASTE RECEPTACLE N.T.S. 05




NOTES:

1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION & INSTALLATION.
2. ALL STEEL COMPONENTS TO RECEIVE RUST PROOF COATING AND POWDER COAT FINISH IN GRAPHITE COLOR.

# RADIUS BENCH N.T.S. 06

KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE DETAILS

L17

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| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L18 | 393 |

| DATE | BY | |
|---|---|---|
| | | REFERENCES NOTED |
| | | REFERENCES CHECKED |

# GENERAL LANDSCAPE NOTES

1. Locate utilities prior to commencing landscape operations. All trees shall be field positioned as to avoid conflicts with existing and proposed utilities. Notify landscape architect and owner of any conflicts or obstructions.
2. Contractor shall stake all planting areas in the field prior to planting for approval of the owner or their representative. Contractor shall utilize string line and/or temporary paint markings to layout grid for modular planting areas as shown on landscape plan sheets.
3. Contractor shall verify all plant quantities prior to planting. Any discrepancies with the plan shall be brought to the attention of the landscape architect. The plan quantities shown shall supercede scheduled quantities. For hatch areas, scheduled quantities shall supercede plan labeled quantities. For modular plantings areas, refer to scheduled quantities and planting module quantities.
4. All plant material shall be specimen quality and shall comply with recommendations and requirements of ANSI A60.1 the 'American Standard for Nursery Stock'.
5. All planting beds shall be edged with shovel cut edging per the plans.
6. Prepare planting beds and incorporate amendments according to Notes.
7. Provide mulch per specifications as a three inch (3") top dressing in all planting beds and around all trees. Single trees shall be mulched to the outside edge of the saucer.
8. All trees shall be staked and guyed per detail and Notes.
9. The landscape contractor shall not commence work until the site is free of debris caused by on-going construction operations. Removal of debris shall be the responsibility of the general contractor. Landscape work shall not begin until the landscape architect and owner have given written approval for such. There shall be no delays due to lack of coordination for this activity.
10. The landscape architect and owner shall approve fine grading and condition of site prior to sodding operations.
11. All areas disturbed during construction and not designated for other plantings shall receive turf sod.
12. All planting beds shall receive 12" of amended topsoil. All turf areas shall receive 6" of topsoil. See 329113 Landscape Soil Preparation Notes.
13. For planting beds with slopes 3:1 or steeper, contractor shall install photo-degradable polypropylene netting with metal anchors to secure mulch.

# LANDSCAPE SOIL PREPARATION NOTES

PART 1 – GENERAL

1. Contractor shall conduct a preinstallation conference at project site.
2. Contractor shall provide product data submittals for each type of product, as outlined below.
   - 2.1. Include recommendations for application and use.
   - 2.2. Include test data substantiating that products comply with requirements.
   - 2.3. Include sieve analyses for aggregate materials.
   - 2.4. Material Certificates: For each type of imported soil and soil amendment and fertilizer before delivery to the site, according to the following:
     - 2.4.1. Manufacturer's qualified testing agency's certified analysis of standard products.
     - 2.4.2. Analysis of fertilizers, by a qualified testing agency, made according to AAPFCO methods for testing and labeling and according to AAPFCO's SUIP #25.
     - 2.4.3. Analysis of nonstandard materials, by a qualified testing agency, made according to SSSA methods, where applicable.
3. For each bulk-supplied material, provide 1-gal. volume sample of each in sealed containers labeled with content, source, and date obtained. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of composition, color, and texture.
4. Contractor shall provide informational submittals for the following:
   - 4.1. Qualification Data: For each testing agency.
   - 4.2. Preconstruction Test Reports: For preconstruction soil analyses outlined under Note 6 below.
   - 4.3. Field quality-control reports.
5. Testing Agency Qualifications shall be as follows: An independent, state-operated, or university-operated laboratory, experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed.
6. Contractor shall conduct preconstruction testing as follows:
   - 6.1. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction soil analyses on existing, on-site soil and imported soil.
   - 6.2. Notify Landscape Architect seven days in advance of the dates and times when laboratory samples will be taken.
   - 6.3. Preconstruction Soil Analyses: For each unamended soil type, perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment and fertilizer recommendations by a qualified testing agency performing the testing according to the requirements outlined in Notes 7 and 8 below.
   - 6.4. Have testing agency identify and label samples and test reports according to sample collection and labeling requirements.
7. Contractor shall extract soil samples according to the following requirements:
   - 7.1. Sample Collection and Labeling: Have samples taken and labeled by Contractor in presence of Owner under the direction of the testing agency.
   - 7.2. Number and Location of Samples: Minimum of three representative soil samples from varied locations for each soil to be used or amended for landscaping purposes.
   - 7.3. Procedures and Depth of Samples: According to USDA-NRCS's "Field Book for Describing and Sampling Soils."
   - 7.4. Division of Samples: Split each sample into two, equal parts. Send half to the testing agency and half to Owner for its records.
   - 7.5. Labeling: Label each sample with the date, location keyed to a site plan or other location system, visible soil condition, and sampling depth.
8. Contractor shall perform tests on soil samples according to the following requirements:
   - 8.1. Physical Testing:
     - 8.1.1. Soil Texture: Soil-particle, size-distribution analysis by one of the following methods according to SSSA's "Methods of Soil Analysis – Part 1–Physical and Mineralogical Methods":
       - 8.1.1.1. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
       - 8.1.1.2. Hydrometer Method: Report percentages of sand, silt, and clay.
     - 8.1.2. Total Porosity: Calculate using particle density and bulk density according to SSSA's "Methods of Soil Analysis – Part 1–Physical and Mineralogical Methods."
     - 8.1.3. Water Retention: According to SSSA's "Methods of Soil Analysis – Part 1–Physical and Mineralogical Methods."
     - 8.1.4. Saturated Hydraulic Conductivity: According to SSSA's "Methods of Soil Analysis – Part 1–Physical and Mineralogical Methods"; at 85% compaction according to ASTM D 698 (Standard Proctor).
   - 8.2. Chemical Testing:
     - 8.2.1. CEC: Analysis by sodium saturation at pH 7 according to SSSA's "Methods of Soil Analysis – Part 3– Chemical Methods."
     - 8.2.2. Clay Mineralogy: Analysis and estimated percentage of expandable clay minerals using CEC by ammonium saturation at pH 7 according to SSSA's "Methods of Soil Analysis – Part 1– Physical and Mineralogical Methods."
     - 8.2.3. Metals Hazardous to Human Health: Test for presence and quantities of RCRA metals including aluminum, arsenic, barium, copper, cadmium, chromium, cobalt, lead, lithium, and vanadium. If RCRA metals are present, include recommendations for corrective action.
     - 8.2.4. Phytotoxicity: Test for plant-available concentrations of phytotoxic minerals including aluminum, arsenic, barium, cadmium, chlorides, chromium, cobalt, copper, lead, lithium, mercury, nickel, selenium, silver, sodium, strontium, tin, titanium, vanadium, and zinc.
   - 8.3. Fertility Testing: Soil-fertility analysis according to American Society for Testing and Materials (ASTM) testing protocols including the following:
     - 8.3.1. Percentage of organic matter.
     - 8.3.2. CEC, calcium percent of CEC, and magnesium percent of CEC.
     - 8.3.3. Soil reaction (acidity/alkalinity pH value).
     - 8.3.4. Buffered acidity or alkalinity.
     - 8.3.5. Nitrogen ppm.
     - 8.3.6. Phosphorous ppm.
     - 8.3.7. Potassium ppm.
     - 8.3.8. Manganese ppm.
     - 8.3.9. Manganese-availability ppm.
     - 8.3.10. Zinc ppm.
     - 8.3.11. Zinc availability ppm.
     - 8.3.12. Copper ppm.
     - 8.3.13. Sodium ppm and sodium absorption ratio.
     - 8.3.14. Soluble-salts ppm.
     - 8.3.15. Presence and quantities of problem materials including salts and metals cited in the Standard protocol. If such problem materials are present, provide additional recommendations for corrective action.
     - 8.3.16. Other deleterious materials, including their characteristics and content of each.
   - 8.4. Organic-Matter Content: Analysis using loss-by-ignition method according to SSSA's "Methods of Soil Analysis – Part 3– Chemical Methods."
   - 8.5. Recommendations: Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated to produce satisfactory planting soil suitable for healthy, viable plants indicated. Include, at a minimum, recommendations for nitrogen, phosphorous, and potassium fertilization, and for micronutrients.
     - 8.5.1. Fertilizers and Soil Amendment Rates: State recommendations in weight per 1000 sq. ft. (100 sq. m) for 6-inch (150-mm) depth of soil.
     - 8.5.2. Soil Reaction: State the recommended liming rates for raising pH or sulfur for lowering pH according to the buffered acidity or buffered alkalinity in weight per 1000 sq. ft. (100 sq. m) for 6-inch (150-mm) depth of soil.
9. Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable.
10. Bulk Materials:
    - 10.1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
    - 10.2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
    - 10.3. Do not move or handle materials when they are wet or frozen.
    - 10.4. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

PART 2 – PRODUCTS

11. Regional Materials: Imported soil and soil amendments and fertilizers shall be manufactured within 500 miles (800 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles (800 km) of Project site.
12. Topsoil that is imported, naturally formed soil from off-site sources and consisting of sandy loam, loam or clay loam according to USDA textures; and modified to produce viable planting soil shall conform to the following
    - 12.1. Sources: Take imported, unamended soil from sources that are naturally well-drained sites where topsoil occurs at least 4 inches (100 mm) deep, not from agricultural land, bogs, or marshes; and that do not contain undesirable organisms; disease-causing plant pathogens; or obnoxious weeds and invasive plants including, but not limited to, quackgrass, Johnsongrass, poison ivy, nutsedge, nimblewill, Canada thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel, and bromegrass.
    - 12.2. Additional Properties of Imported Soil: Soil reaction of pH 5.5 to 7.0 and organic-matter content from 6% to 10%, friable, and with sufficient structure to give good tilth and aeration.
    - 12.3. Clean soil of the following:
      - 12.3.1. Unacceptable Materials: Concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
      - 12.3.2. Unsuitable Materials: Stones, roots, plants, sod, clay lumps, and pockets of coarse sand.
      - 12.3.3. Large Materials: Stones, clods, roots, clay lumps, and pockets of coarse sand exceeding 1 inch in any dimension.
    - 12.4. Particle Size Distribution by Separates:
      - 12.4.1. Sand: 25 to 70 percent by dry weight.
      - 12.4.2. Silt: 15 to 55 percent by dry weight.
      - 12.4.3. Clay: 5 to 30 percent by dry weight.
13. Inorganic soil amendments shall conform to the following:
    - 13.1. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
      - 13.1.1. Class: T, with a minimum of 99 percent passing through a No. 8 (2.36-mm) sieve and a minimum of 75 percent passing through a No. 60 (0.25-mm) sieve.
      - 13.1.2. Class: O, with a minimum of 95 percent passing through a No. 8 (2.36-mm) sieve and a minimum of 55 percent passing through a No. 60 (0.25-mm) sieve.
      - 13.1.3. Form: Provide lime in form of ground dolomitic limestone.
    - 13.2. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent elemental sulfur, with a minimum of 99 percent passing through a No. 6 (3.35-mm) sieve and a maximum of 10 percent passing through a No. 40 (0.425-mm) sieve.
    - 13.3. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
    - 13.4. Perlite: Horticultural perlite, soil amendment grade.
    - 13.5. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through a No. 50 (0.30-mm) sieve.
    - 13.6. Sand: Clean, washed, natural or manufactured, free of toxic materials, and according to ASTM C 33/C 33M.
14. Organic soil amendments shall conform to the following:
    - 14.1. Compost: Well-composted, stable, and weed-free organic matter produced by composting feedstock. The product shall contain no substances toxic to plants and shall be reasonably free (< 1% by dry weight) of man-made foreign matter. The compost will possess no objectionable odors and shall not resemble the raw material from which it was derived. Compost shall bear USCC's "Seal of Testing Assurance," and meet the following:
      - 14.1.1. Feedstock: Compost shall be derived from agricultural, food, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; source-separated or mixed solid waste.
      - 14.1.2. Reaction: pH of 6.0 to 8.5.
      - 14.1.3. Soluble-Salt Concentration: Less than 10 dS/m.
      - 14.1.4. Moisture Content: 30 to 60 percent by weight.
      - 14.1.5. Organic-Matter Content: 30 to 65 percent of dry weight.
      - 14.1.6. Particle Size: Minimum of 98 percent passing through a 3/4-inch screen or smaller.
      - 14.1.7. Stability (Carbon Dioxide Evolution Rate): < 8 mg CO2-C per g OM per day
      - 14.1.8. Physical Contaminants: < 1% by dry weight basis
      - 14.1.9. Chemical Contaminants: Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels
    - 14.2. Compost Tea: Soil and plant microbiological inoculum product containing diverse, beneficial microorganisms for establishing populations of beneficial soil and plant microbes including beneficial bacteria and mycorrhizal fungi of the following types and minimum numbers per gram as determined by assay methods FDA III and MEF 4: Bacillus amyloliquefaciens, B. cereus, B. megaterium, B. subtilis: 5x102 cfu/gram, Glomus, aggregatum, G. etunicatum, G. intraradices, G. mosseae 1.65x101 prop/gram, Rhizopogon villosullus, R. luteolus, R. amylopogon, R. fulvigleba, 1.65x104 prop/gram
      - 14.2.1. Grade: 6-5-5 + Calcium
      - 14.2.2. Composition: Total Nitrogen (N) 6.0%. 0.01% Ammoniacal Nitrogen. 0.02% Nitrate Nitrogen. 3.67% Water Insoluble Nitrogen. 0.01% Urea Nitrogen. Other Nitrogen: 5.95% Organic Nitrogen. 0.01% Ammonium. Available Phosphate (P205) 5.0%. Soluble Potash (K20) 5.0%. Aluminum (Al) 0.15%. Calcium (Ca) 9.0%. Magnesium (Mg) 1.2%. Sulfur (S) 2.6%. Chlorine (Cl) 0.12%. Iron (Fe) 0.16%. Molybdenum (Mo) 0.0008%. Sodium (Na) 0.375%. Sources of elements derived from Plant Based Amino Acids 37%, Bone Ash 14%, Potassium Magnesium Sulfate 14%, Calcium Carbonate 14%, Humate 14%, Kelp 2%, and Additional Ingredients 5%.

PART 3 – EXECUTION

15. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil.
16. Proceed with placement only after unsatisfactory conditions have been corrected.
17. Preparation of unamended on-site soil before amending shall conform with the following:
    - 17.1. Excavation: Refer to Civil drawings and specifications.
    - 17.2. Unacceptable Materials: Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
    - 17.3. Unsuitable Materials: Clean soil of stones, roots, plants, sod, clay lumps, and pockets of coarse sand.
    - 17.4. Screening: Pass unamended soil through a 1-inch sieve to remove large materials.
18. Placement of topsoil over exposed subgrade shall conform with the following:
    - 18.1. General: Apply topsoil on-site to produce required planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
    - 18.2. Subgrade Preparation: For planting beds till and loosen subgrade to a minimum depth of 12 inches. For turf areas till and loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
    - 18.3. Placing: Spread topsoil over prepared subgrade to total depth of 12 inches in all planting beds and 6 inches in all sodded or seeded areas, but not less than required to meet finish grades after natural settlement. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.
      - 18.3.1. Lifts: Apply topsoil in lifts not exceeding 12 inches in loose depth for material compacted by compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers.
    - 18.4. Compaction: Compact each blended lift of planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D 698 and tested in-place.
    - 18.5. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
19. Application of compost to surface of topsoil shall conform with the following:
    - 19.1. Application: Apply compost to surface of in-place topsoil in planting beds only. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet. Compost shall be uniformly applied over the planting area at an average depth of 1 to 2 inches. Incorporate uniformly to a depth of 6 to 8 inches using a rotary tiller or other appropriate equipment.
    - 19.2. Finish Grading: Grade surface to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. The soil surface shall be reasonably free of large clods, roots, stones greater than 1 inches, and other material which will interfere with planting and subsequent maintenance.
20. Application of compost tea to surface of topsoil shall conform with the following:
    - 20.1. Application: Apply compost tea to surface of in-place topsoil in all landscape areas, including planting beds and turf areas. Do not apply materials if existing soil or subgrade is frozen, muddy, or excessively wet. Compost tea shall be uniformly applied over the planting area at an equivalent rate of ½ pound per 1,000 square feet with 32 gallons per 1,000 square feet water carrier.
21. Field quality control shall be conducted in conformance with the following:
    - 21.1. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
    - 21.2. Perform the following tests and inspections:
      - 21.2.1. Compaction: Test planting-soil compaction after placing each lift and at completion using a densitometer or soil-compaction meter calibrated to a reference test value based on laboratory testing according to ASTM D 698. Space tests at no less than one for each 1000 sq. ft. of in-place soil or part thereof.
    - 21.3. Soil will be considered defective if it does not pass tests and inspections.
    - 21.4. Prepare test and inspection reports.
    - 21.5. Label each sample and test report with the date, location keyed to a site plan or other location system, visible conditions when and where sample was taken, and sampling depth.
22. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:
    - 22.1. Storage of construction materials, debris, or excavated material.
    - 22.2. Parking vehicles or equipment.
    - 22.3. Vehicle traffic.
    - 22.4. Foot traffic.
    - 22.5. Erection of sheds or structures.
    - 22.6. Impoundment of water.
    - 22.7. Excavation or other digging unless otherwise indicated.
23. If planting soil or subgrade is overcompacted, disturbed, or contaminated by foreign or deleterious materials or liquids, remove the planting soil and contamination; restore the subgrade as directed by Landscape Architect and replace contaminated planting soil with new planting soil.
24. Protect areas adjacent to planting-soil preparation and placement areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition.
25. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated.
    - 25.1. Dispose of excess subsoil and unsuitable materials on-site where directed by Owner.

KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE NOTES

L18

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File : L18 LANDSCAPE NOTES.dwg

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | L19 | 393 |

# TURF & GRASSES NOTES

PART 1 – GENERAL

1. Contractor shall conduct a preinstallation conference at Project site.

2. Contractor shall provide informational submittals as outlined below.
 2.1. Qualification data: for landscape installer.
 2.2. Certification of grass seed: from seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
  2.2.1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.
 2.3. Product certificates: for fertilizers, from manufacturer.
 2.4. Pesticides and herbicides: product label and manufacturer's application instructions specific to Project.

3. Contractor shall provide closeout submittals for maintenance data: recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required maintenance periods.

4. Contractor shall engage a qualified landscape installer with the following qualifications, whose work has resulted in successful turf establishment:
 4.1. Professional membership: installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 4.2. Experience: five years' experience in turf installation.
 4.3. Installer's field supervisions: require installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 4.4. Pesticide applicator: state-licensed, commercial.

5. Contractor shall deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

6. Contractor shall deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

7. Contractor's handling of bulk materials shall conform to the following:
 7.1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 7.2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge or soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 7.3. Accompany each delivery of bulk materials with appropriate certificates.

8. Contractor shall plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance for date of completion.
 8.1. Spring planting: April 1 to May 31.
 8.2. Fall planting: September 1 to October 31.

9. Contractor shall proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's instructions.

PART 2 – PRODUCTS

10. Certified turfgrass sod shall comply with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.

11. Turfgrass sod shall be of grass species as follows, with not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0 percent weed seed:
 11.1. Full sun: proportioned by weight as follows:
  11.1.1. 90 percent Turf-type Tall Fescue (Festuca arundinacea), a minimum of three cultivars, and 10 percent Kentucky Bluegrass (Poa pratensis).

12. Organic fertilizers shall conform with the following:
 12.1. Pre- and post-planting organic slow-release fertilizer: granular or pelleted fertilizer consisting of slow-release nitrogen, chelated micronutrients, organic phosphorous and humic substances. A fully composted organic fertilizer that increases the levels of microbial activity.
  12.1.1. Sustane 4-6-4 organic starter and maintenace fertilizer or approved equivalent.

13. Bonded fiber matrix shall be comprised of long-strand, thermally produced wood fibers held together by organic tackifiers; non-toxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5. The matrix shall be comprised of materials which are 100% biodegradable and 100% beneficial to plant growth. The BFM shall be manufactured to be hydraulically applied, and upon drying, adheres to the soil in the form of a continuous, 100% coverage, biodegradable, erosion control blanket. The BFM shall be installed by a Contractor certified by the manufacturer to be trained in the proper procedures for mixing and application of the product.

14. Non-asphaltic colloidal tackifier shall be as recommended by fiber-mulch manufacturer for slurry application; non-toxic and free of plant-growth or germination inhibitors. The binder shall not dissolve or disperse upon re-wetting.

15. Pesticide shall be registered and approved by the EPA, acceptable to authorities having jurisdiction, and of a type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

16. Pre-emergent herbicide (selective and non-selective) shall be effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

17. Post-emergent herbicide (selective and non-selective) shall be effective for controlling weed growth that has already germinated.

18. Erosion-control blankets shall be biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long.

PART 3 – EXECUTION

19. Contractor shall examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.
 19.1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 19.2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 19.3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

20. Proceed with installation only after unsatisfactory conditions have been corrected.

21. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil.

22. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
 22.1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
 22.2. Protect grade stakes set by others until directed to remove them.

23. Install erosion-control measures to prevent erosion or displacement of soils and discharge or soil-bearing water runoff or airborne dust to adjacent properties and walkways.

24. Place planting soil in place over exposed subgrade.
 24.1. Reduce elevation of topsoil to allow for soil thickness of sod.

25. Till and loosen topsoil to a depth of at least 4 inches. Apply required soil amendments and initial fertilizers required for establishing new turf and mix thoroughly into top 4 inches of topsoil.

26. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

27. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

28. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

29. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 29.1. Lay sod across slopes exceeding 1:3
 29.2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.

30. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1½ inches below sod.

31. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.
 31.1. Re-establish turf where settlement or washouts occur or where minor re-grading is required.
 31.2. Install new planting soil as required.

32. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.

33. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.

34. Remove weeds before sodding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergent herbicides.

35. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.

36. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.

37. Apply soil amendments and initial fertilizer required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grades.
 37.1. Initial fertilizer: slow-release fertilizer applied according to manufacturer's recommendations.

38. Water newly planting areas and keep moist until new turf is established.

39. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
 39.1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 39.2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
 39.3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

40. Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
 40.1. Schedule watering to prevent wilting, puddling, erosion, and displacement or seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 40.2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

41. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
 41.1. Mow turf-type tall fescue to a height of 2 to 3 inches.

42. Turf post-fertilization: apply slow-release organic fertilizer after initial mowing and when grass is dry.

43. Turf installations shall meet the following criteria as determined by Landscape Architect:
 43.1. Satisfactory sodded turf: at end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

44. Use specified materials to re-establish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

45. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

46. Post-emergent herbicides (selective and non-selective): apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

47. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

48. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

49. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

50. Remove non-degradable erosion-control measures after grass establishment period.

51. Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:
 51.1. Sodded Turf: 60 days from date of Substantial Completion.

# PLANTS NOTES

PART 1 – GENERAL

1. Contractor shall conduct a preinstallation conference at Project site.

2. Contractor shall provide product data submittals for each type of product as described below.
 2.1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
 2.2. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 20 plants are required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

3. Contractor shall provide samples for verification as follows:
 3.1. Trees and Shrubs: Three samples of each variety and size delivered to site for review. Maintain approved Samples on-site as a standard for comparison.
 3.2. Organic Mulch: 1-gallon volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
 3.3. Slow-Release, Tree-Watering Device: One unit of each size required.
 3.4. Edging Materials and Accessories: Manufacturer's standard size, to verify color selected.

4. Contractor shall provide informational submittals as follows:
 4.1. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
 4.2. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
  4.2.1. Manufacturer's certified analysis of standard products.
  4.2.2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
 4.3. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.
 4.4. Sample Warranty: For special warranty.

5. Contractor shall provide closeout submittals as follows:
 5.1. Maintenance Data: Recommended procedures to be established by Owner for maintenance of plants during a calendar year. Submit before expiration of required maintenance periods.

6. Contractor shall engage a qualified landscape installer with the following qualifications, whose work has resulted in successful establishment of plants.
 6.1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 6.2. Experience: Five years' experience in landscape installation in addition to requirements in Section 014000 "Quality Requirements."
 6.3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 6.4. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the Professional Landcare Network:
  6.4.1. Landscape Industry Certified Technician – Exterior.
  6.4.2. Landscape Industry Certified Interior.
  6.4.3. Landscape Industry Certified Horticultural Technician.
 6.5. Pesticide Applicator: State licensed, commercial.

7. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.

8. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
 8.1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches (150 mm) above the root flare for trees up to 4-inch (100-mm) caliper size, and 12 inches (300 mm) above the root flare for larger sizes.
 8.2. Other Plants: Measure with stems, petioles, and foliage in their normal position.

9. Plant Material Observation: Landscape Architect may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Landscape Architect may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
 9.1. Notify Landscape Architect of sources of planting materials seven days in advance of delivery to site.

10. Contractor shall deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws if applicable.

11. Contractor shall not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.

12. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.

13. Accompany each delivery of bulk materials with appropriate certificates.

14. Deliver bare-root stock plants within 24 hours of digging. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting. Transport in covered, temperature-controlled vehicles, and keep plants cool and protected from sun and wind at all times.

15. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

16. Handle planting stock by root ball.

17. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F (16 to 18 deg C) until planting.

18. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
 18.1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.

19. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

20. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
 20.1. Heel-in bare-root stock. Soak roots that are in less than moist condition in water for two hours. Reject plants with dry roots.
 20.2. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 20.3. Do not remove container-grown stock from containers before time of planting.
 20.4. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

21. Contractor shall verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

22. Contractor shall plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
 22.1. Spring Planting: February 15 – May 31 for trees & shrubs;
  April 15 – May 31 for grasses & perennials
 22.2. Fall Planting: September 15 – December 15 for trees & shrubs;
  September 1 – October 1 for grasses & perennials

23. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

24. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 24.1. Failures include, but are not limited to, the following:
  24.1.1. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
  24.1.2. Structural failures including plantings falling or blowing over.
  24.1.3. Faulty performance of edgings.
  24.1.4. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 24.2. Warranty Periods: From date of Substantial Completion.
  24.2.1. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
  24.2.2. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
 24.3. Include the following remedial actions as a minimum:
  24.3.1. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
  24.3.2. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
  24.3.3. A limit of one replacement of each plant is required except for losses or replacements due to failure to comply with requirements.
  24.3.4. Provide extended warranty for period equal to original warranty period, for replaced plant material.

PART 2 – PRODUCTS

25. Contractor shall furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
 25.1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch (19 mm) in diameter; or with stem girdling roots are unacceptable.
 25.2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.

26. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.

27. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

28. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant.

29. If formal arrangements or consecutive order of plants is indicated on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

30. Shrubs, Perennials & Ornamental Grasses: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery.

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KANSAS DEPARTMENT OF TRANSPORTATION

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# PLANTS NOTES (CONTINUED)

PART 2 – PRODUCTS (CONTINUED)

1. Fertilizer planting tablets shall be tightly compressed chip-type, long-lasting, slow-release, commercial-grade planting fertilizer in tablet form. Tablets shall break down with soil bacteria, converting nutrients into a form that can be absorbed by plant roots.
   1.1. Size: 7-gram tablets.
   1.2. Nutrient Composition: 12 percent nitrogen, 8 percent phosphorous, and 8 percent potassium, by weight plus micronutrients.
   1.3. Manufacturer: 12-8-8 Gro-Power Planting Tablets

2. Contractor shall provide organic mulch for all trees that is free from deleterious materials and suitable as a top dressing of trees, consisting of one of the following:
   2.1. Type: Premium Double Ground Hardwood.
   2.2. Size Range: 3 inches maximum.
   2.3. Color: Natural.

3. Contractor shall provide organic Mulch for all planting beds that is free from deleterious materials, weed seeds, and pathogens and suitable as a top dressing for planting beds, consisting of the following:
   3.1. Type: Regional Leaf Compost Mulch.
   3.2. Color: Natural.

4. Contractor shall provide pesticide registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
   4.1. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
   4.2. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

5. Contractor shall furnish and install tree-stabilization materials as follows:
   5.1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal (38-by-38-mm actual) by length indicated, pointed at one end.
   5.2. Guys and Tie Wires: ASTM A 641/A 641M, Class 1, galvanized-steel wire, two-strand, twisted, 0.106 inch (2.7 mm) in diameter.
   5.3. Tree-Tie Webbing: UV-resistant polypropylene or nylon webbing with brass grommets.
   5.4. Flags: Standard surveyor's plastic flagging tape, white, 6 inches (150 mm) long.

6. Contractor shall install shovel cut edging per details and at locations indicated on drawings.

7. Contractor shall furnish and install slow-release watering devices for all trees: standard product manufactured for drip irrigation of plants and emptying its water contents over an extended time period manufactured from UV-light-stabilized, durable plastic.
   7.1. Low-profile "donut" type tree-watering device
   7.2. Watering rate: 2 removable emitters to emit water over a period of 5-8 hours
   7.3. Capacity: 20 gallons.
   7.4. Color: brown.

8. Contractor shall furnish miscellaneous products as follows:
   8.1. Antidesiccant: water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.
   8.2. Burlap: Non-synthetic, biodegradable.
   8.3. Planter Filter Fabric: Nonwoven geotextile manufactured for separation applications and made of polypropylene, polyolefin, or polyester fibers or combination of them.
   8.4. Mycorrhizal Fungi: Dry, granular inoculant containing at least 6,810 spores per lb (0.45 kg) of vesicular-arbuscular mycorrhizal fungi and 60 million spores per lb (0.45 kg) of ectomycorrhizal fungi, and a maximum particle size of 2mm. Apply per manufacturer's recommendations. Mycorrhizal inoculant to be Myke Pro Landscape as manufactured by Premier Tech Biotechnologies.

PART 3 – EXECUTION

9. Contractor shall examine areas to receive plants, with Installer present, for compliance with requirements and conditions affecting installation and performance of the Work.
   9.1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
   9.2. Verify that plants and vehicles loaded with plants can travel to planting locations with adequate overhead clearance.
   9.3. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
   9.4. Uniformly moisten excessively dry soil that is not workable or which is dusty.
   9.5. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.
   9.6. Proceed with installation only after unsatisfactory conditions have been corrected.

10. Contractor shall protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.

11. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

12. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.

13. Lay out plants at locations directed by Landscape Architect. Stake locations of individual trees and shrubs and outline areas for multiple plantings.

14. Contractor shall place planting soil in-place over exposed subgrade.

15. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

16. Application of Mycorrhizal Fungi: Broadcast dry product uniformly over prepared soil at application rate according to manufacturer's written recommendations.

17. Contractor shall excavate circular planting pits as follows:
   17.1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
   17.2. Excavate approximately three times as wide as ball diameter for balled and burlapped and container-grown stock.
   17.3. Excavate at least 12 inches (300 mm) wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
   17.4. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
   17.5. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
   17.6. Maintain angles of repose of adjacent materials to ensure stability. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
   17.7. Maintain supervision of excavations during working hours.
   17.8. Keep excavations covered or otherwise protected when unattended by Installer's personnel.
   17.9. If drain tile is indicated on Drawings or required under planting areas, excavate to top of porous backfill over tile.

18. Subsoil and topsoil removed from excavations may not be used as backfill soil unless otherwise indicated.

19. Notify Landscape Architect if unexpected rock or obstructions detrimental to trees or plants are encountered in excavations.
   19.1. Hardpan Layer: Drill 6-inch- (150-mm-) diameter holes, 24 inches (600 mm) apart, into free-draining strata or to a depth of 10 feet (3 m), whichever is less, and backfill with free-draining material.

20. Notify Landscape Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

21. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

22. At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

23. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.

24. Balled and Burlapped Stock: Set each plant plumb and in center of planting pit or trench with root flare 1 inch (25 mm) above adjacent finish grades. Remove all excess soil from top of root ball so that root flare is visible.
   24.1. Backfill: Planting soil.
   24.2. Prior to placing backfill, carefully cut and completely remove twine or rope and wire baskets from root ball.
   24.3. After placing some backfill around root ball to stabilize plant, carefully cut and peel back burlap from top third of root ball, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
   24.4. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
   24.5. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch (25 mm) from root tips; do not place tablets in bottom of the hole.
      24.5.1. Quantity: Per manufacturer recommendations.
   24.6. Place mycorrhizal fungi around root ball per manufacturer's recommendations.
   24.7. Continue backfilling process. Water again after placing and tamping final layer of soil.

25. Container-Grown Stock: Set each plant plumb and in center of planting pit or trench with root flare 1 inch (25 mm) above adjacent finish grades.
   25.1. Backfill: Planting soil.
   25.2. Carefully remove root ball from container without damaging root ball or plant.
   25.3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
   25.4. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch (25 mm) from root tips; do not place tablets in bottom of the hole.
      25.4.1. Quantity: Per manufacturer's recommendations.
   25.5. Continue backfilling process. Water again after placing and tamping final layer of soil.

6. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

7. Prune, thin, and shape trees, shrubs, and vines as directed by Landscape Architect.

8. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.

9. Do not apply pruning paint to wounds.

10. Install trunk stabilization as follows unless otherwise indicated:
   10.1. Upright Staking and Tying: Stake trees of 2- through 5-inch (50- through 125-mm) caliper. Stake trees of less than 2-inch (50-mm) caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least 18 inches (450 mm) below bottom of backfilled excavation and to extend one-half of trunk height above grade. Set vertical stakes and space to avoid penetrating root balls or root masses.
   10.2. Upright Staking and Tying: Stake trees with two stakes for trees up to 12 feet (3.6 m) high and 2-1/2 inches (63 mm) or less in caliper; three stakes for trees less than 14 feet (4.2 m) high and up to 4 inches (100 mm) in caliper. Space stakes equally around trees.
   10.3. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

11. Set out and space ground cover and plants other than trees, shrubs, and vines as indicated on Drawings in even rows with triangular spacing.

12. Use planting soil for backfill.

13. Dig holes large enough to allow spreading of roots.

14. For rooted cutting plants supplied in flats, plant each in a manner that minimally disturbs the root system but to a depth not less than two nodes.

15. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

16. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

17. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

18. Mulch backfilled surfaces of planting areas and other areas indicated.
   18.1. Trees in Turf Areas: Apply organic mulch ring of 3-inch average thickness, with 18-inch radius around trunks or stems. Do not place mulch within 3 inches of trunks or stems.
   18.2. Organic Mulch in Planting Areas: Apply 3-inch average thickness of organic mulch over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

19. Separate mulched areas from turf areas with a 45-degree, 4- to 6-inch- deep, shovel-cut edge as indicated on Drawings.

20. Furnish and install one slow-release watering device for each tree. Place device on top of the mulch at base of tree stem and fill with water according to manufacturer's written instructions.

21. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.

22. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

23. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

24. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
   24.1. Pre-Emergent Herbicides (Selective and Nonselective): Apply to tree, shrub, and ground-cover areas according to manufacturer's written recommendations. Do not apply to seeded areas.
   24.2. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

25. Repair or replace existing or new trees and other plants that are damaged by construction operations, in a manner approved by Landscape Architect.
   25.1. Submit details of proposed pruning and repairs.
   25.2. Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.
   25.3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Landscape Architect.

26. Remove and replace trees that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
   26.1. Provide new trees of same size as those being replaced for each tree of 4 inches or smaller in caliper size.
   26.2. Species of Replacement Trees: Same species being replaced.

27. During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

28. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

29. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

30. After installation and before Substantial Completion remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

31. At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place. Replace improperly functioning devices.

32. Provide maintenance for trees and shrubs by skilled employees of landscape Installer. Maintain as required in "Plant Maintenance" Article. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below:
   32.1. Maintenance Period: Three months from date of Substantial Completion.

33. Provide maintenance for Perennials, Grasses, Ground Covers and Other Plants by skilled employees of landscape Installer. Maintain as required in "Plant Maintenance" Article. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below:
   33.1. Maintenance Period: Three months from date of Substantial Completion.

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KANSAS DEPARTMENT OF TRANSPORTATION

LANDSCAPE NOTES

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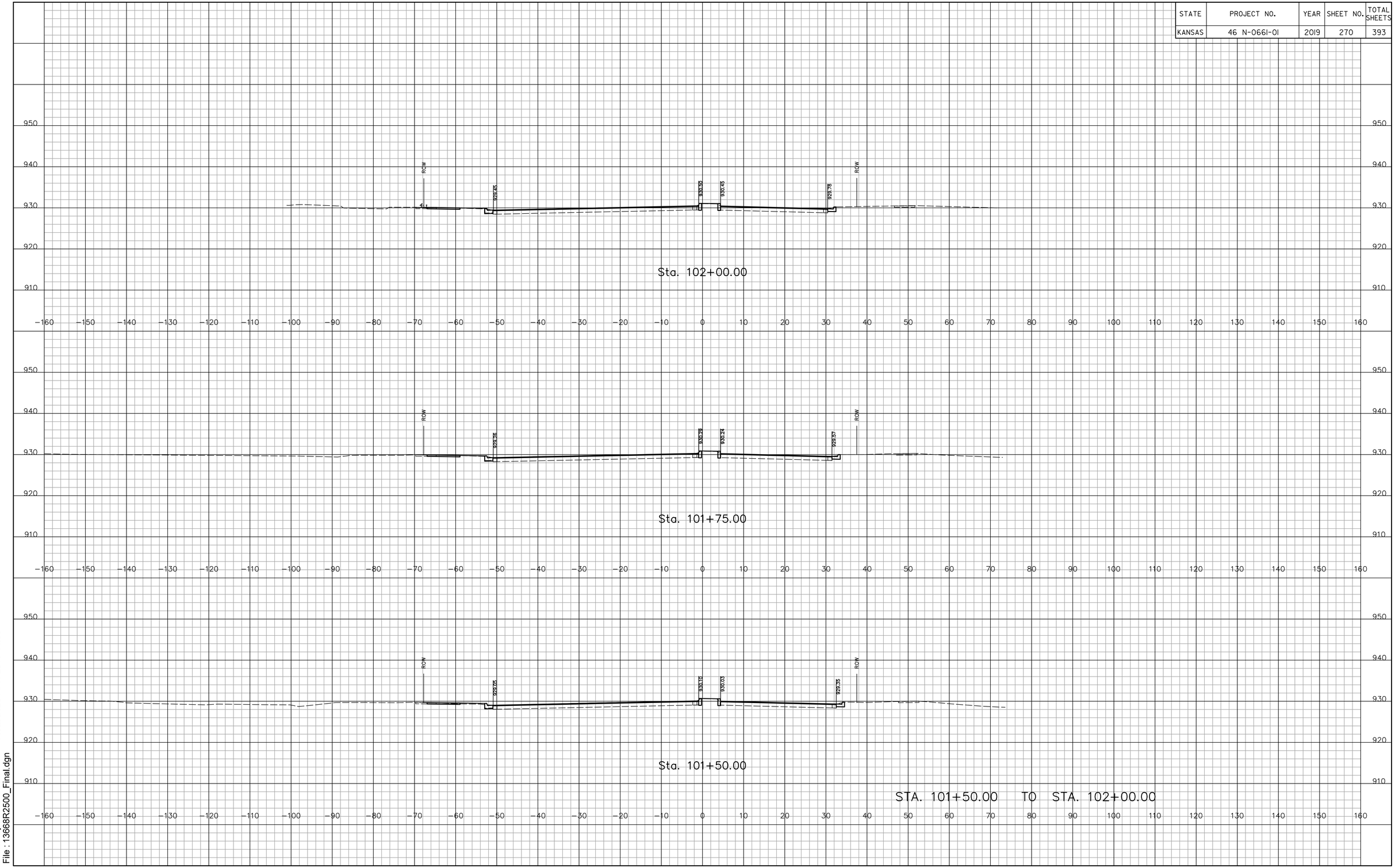
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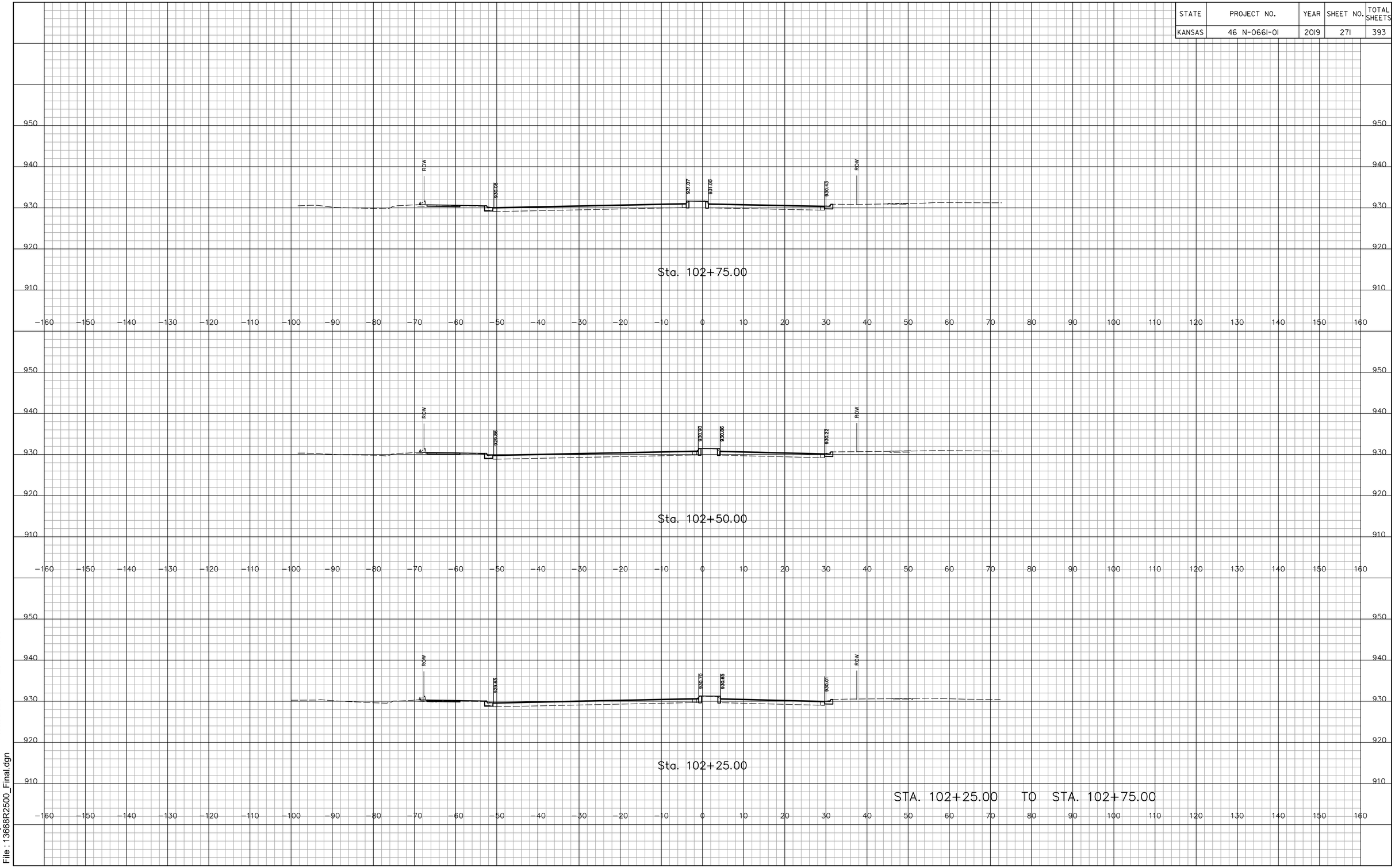
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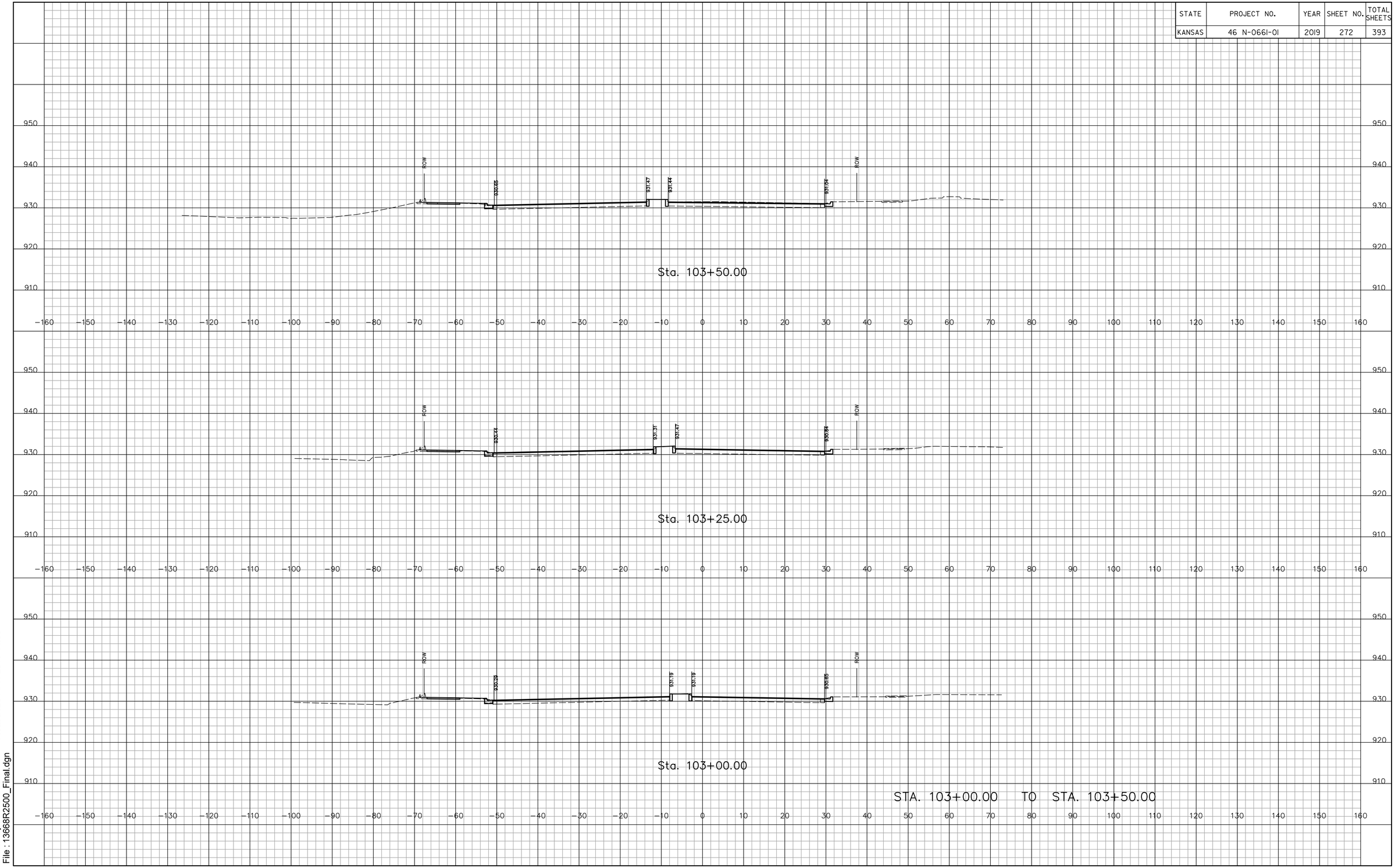

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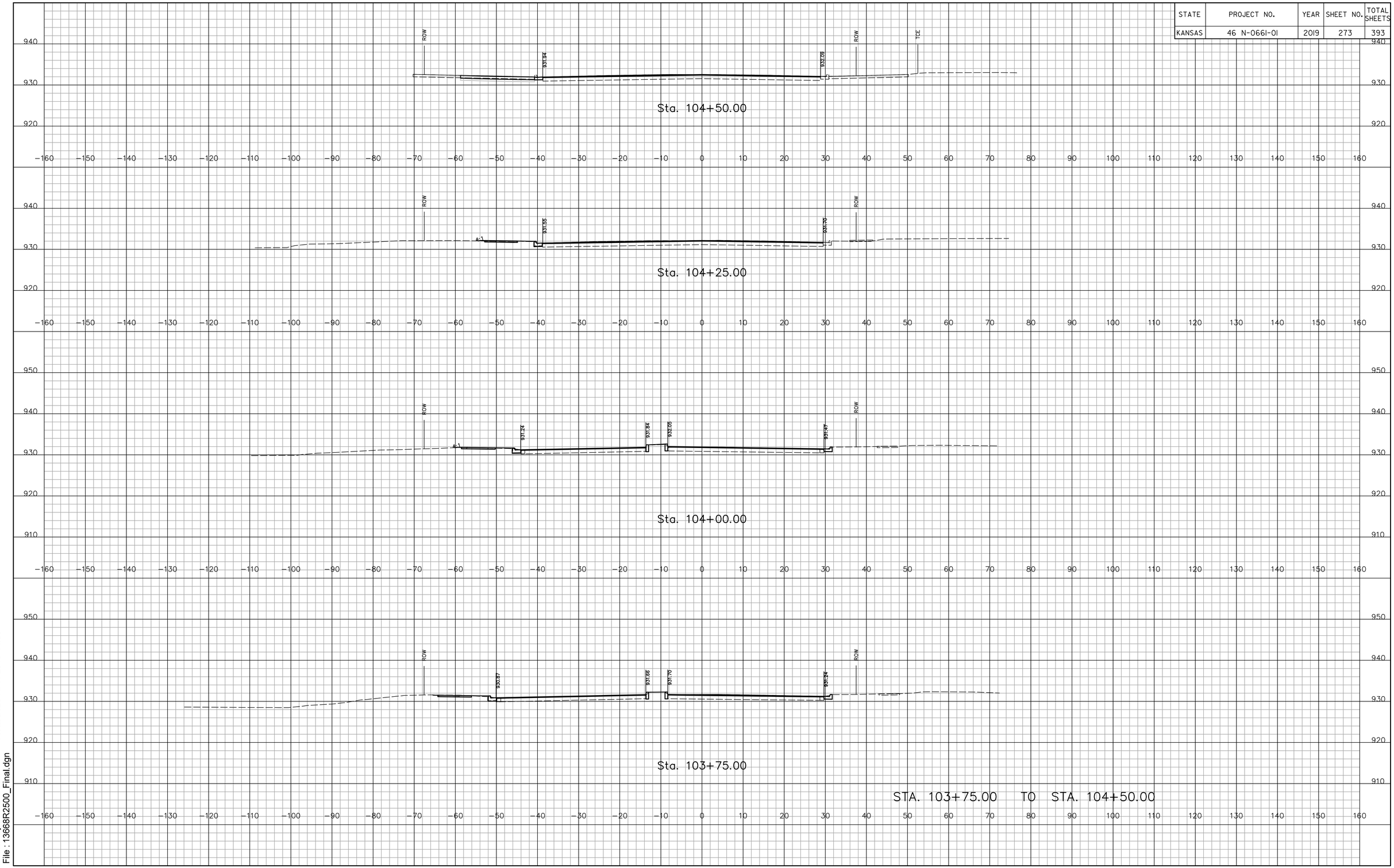

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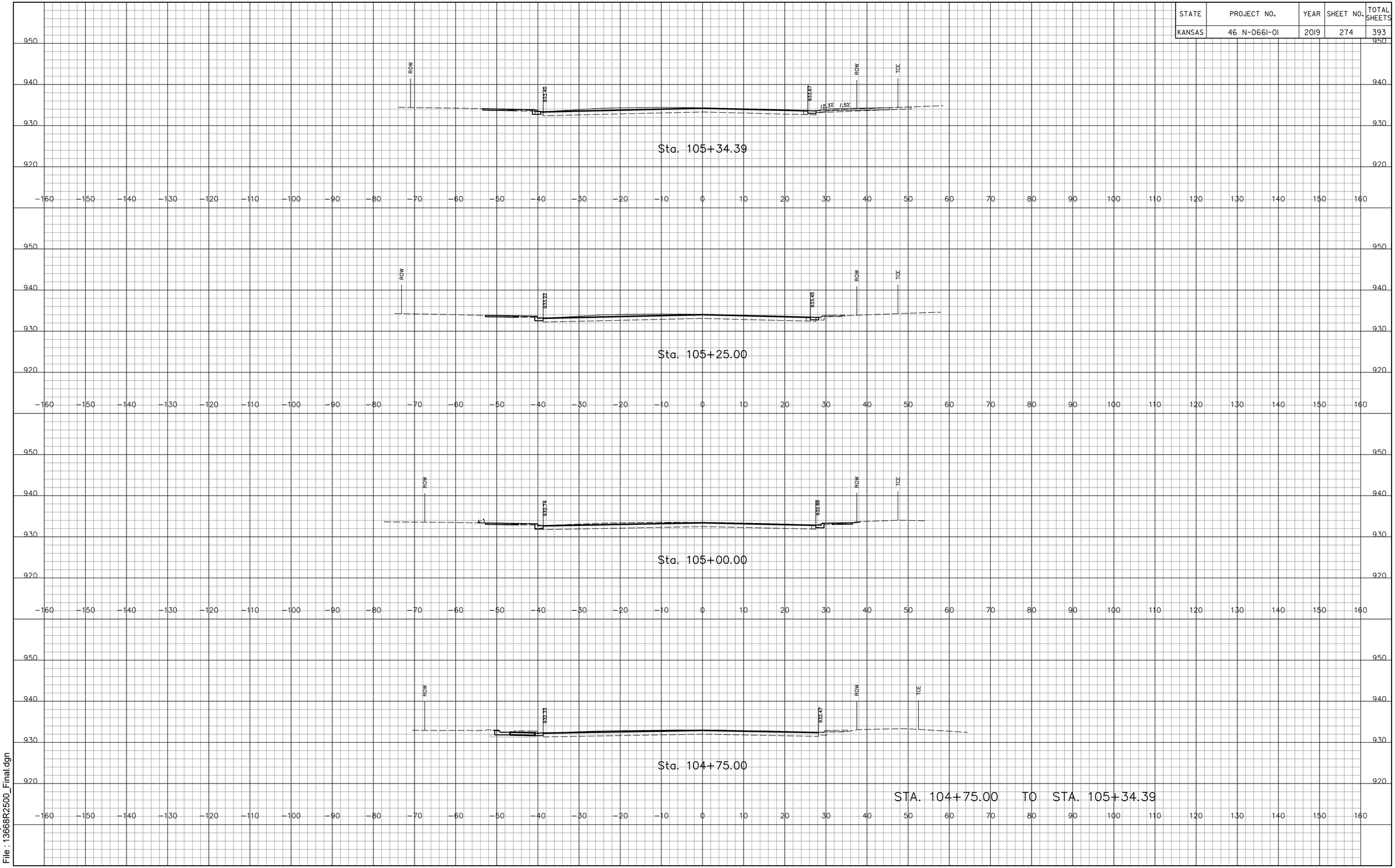
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| KANSAS | 46 N-0661-01 | 2019 | 273 | 393 |




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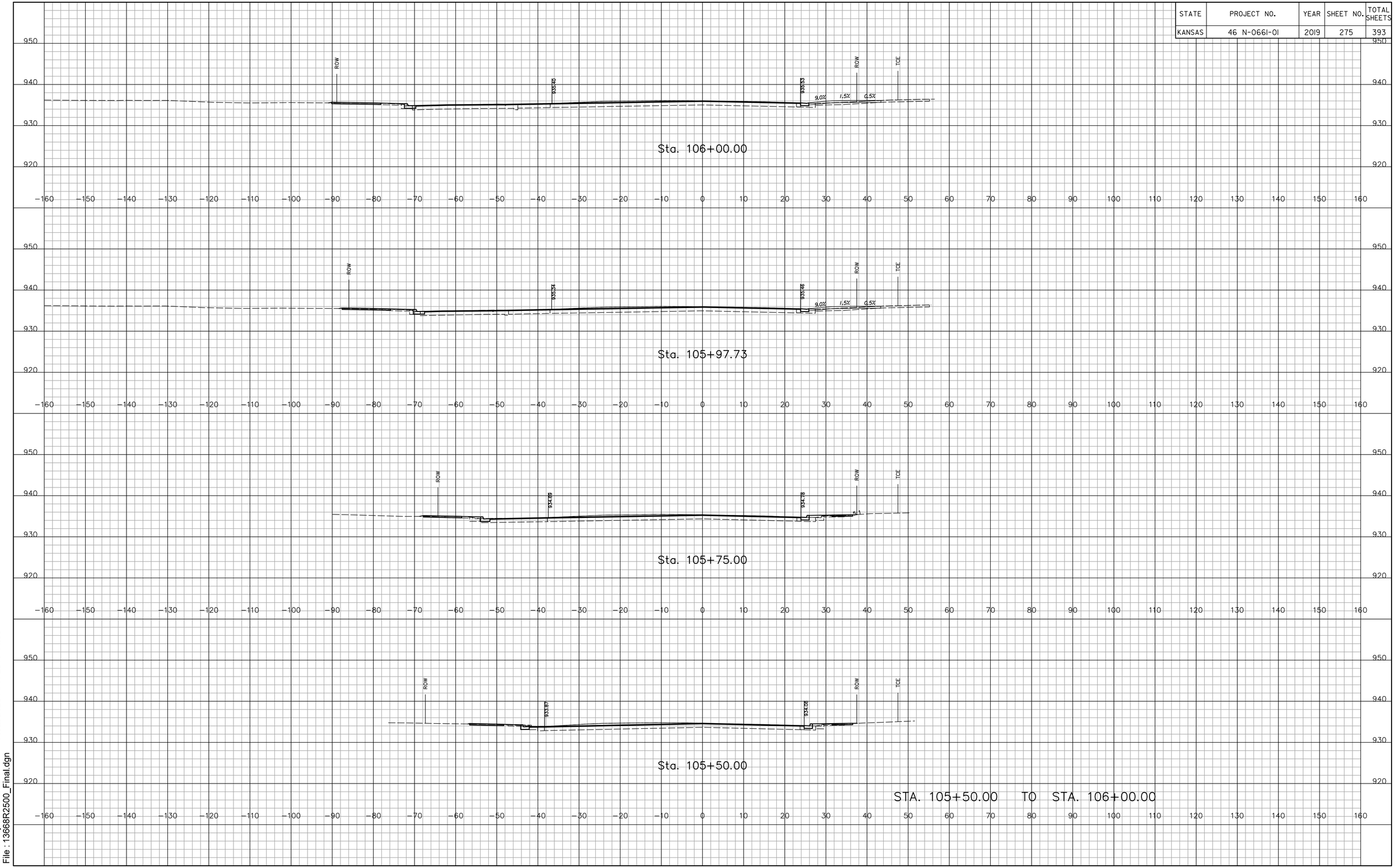
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 274 | 393 |



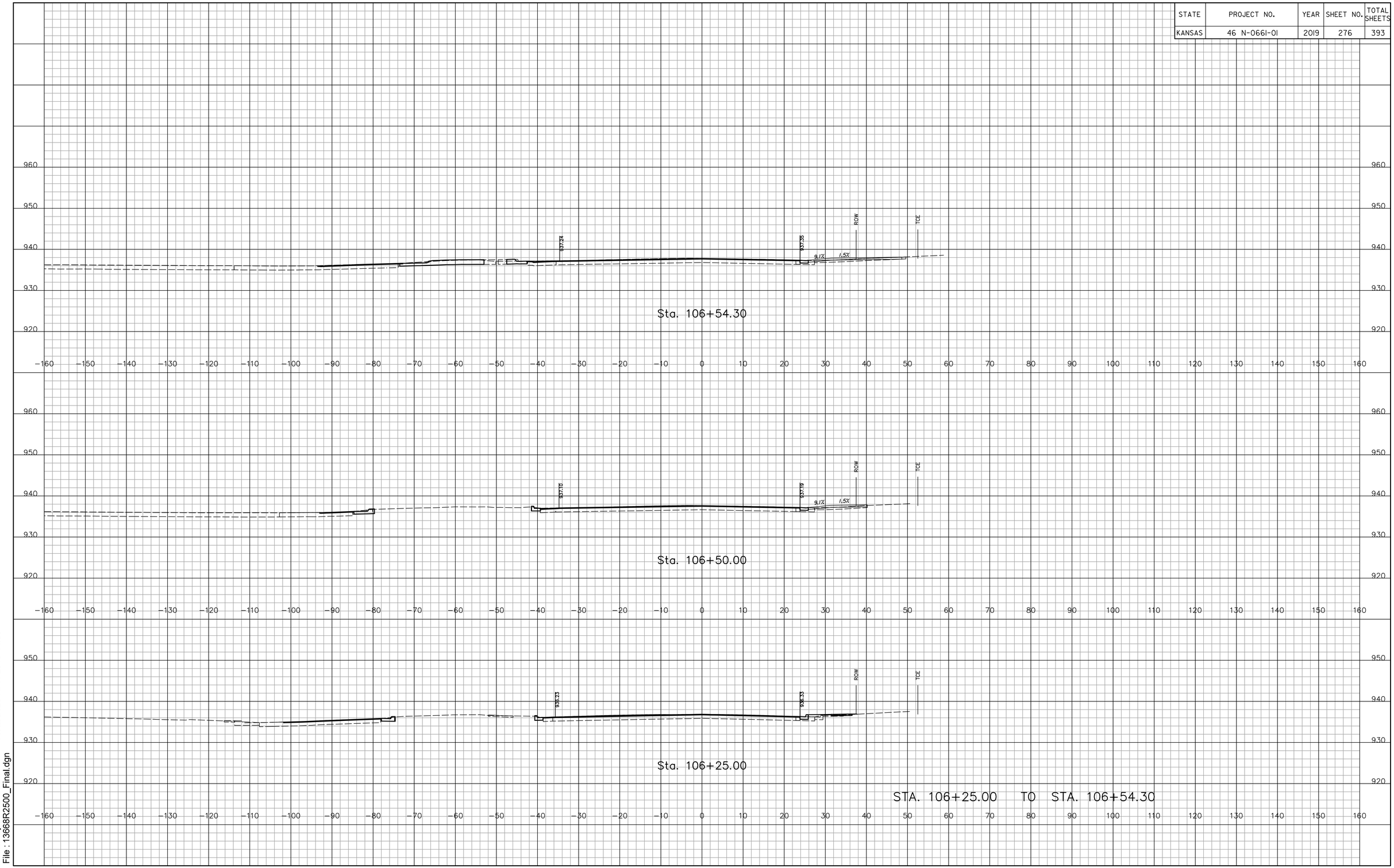

Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 275 | 393 |




Plotted :25-APR-2019 14:38
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 276 | 393 |




Sta. 106+54.30




Sta. 106+50.00




Sta. 106+25.00

STA. 106+25.00 TO STA. 106+54.30

Plotted :25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

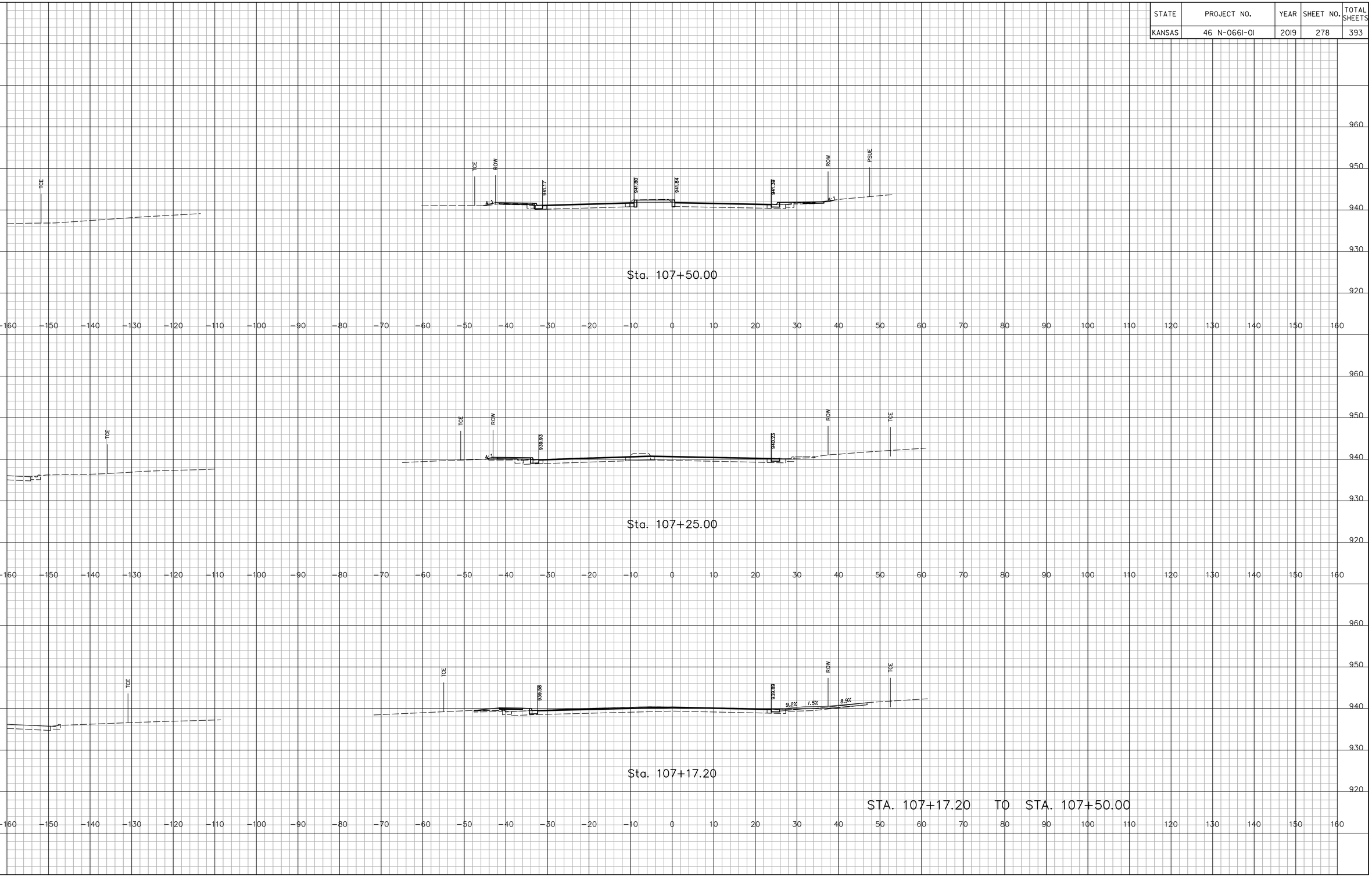
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 277 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 278 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 279 | 393 |



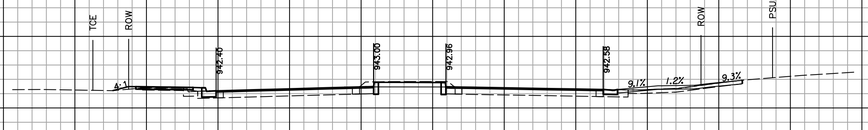

Sta. 108+00.00




Sta. 107+98.35




Sta. 107+77.19

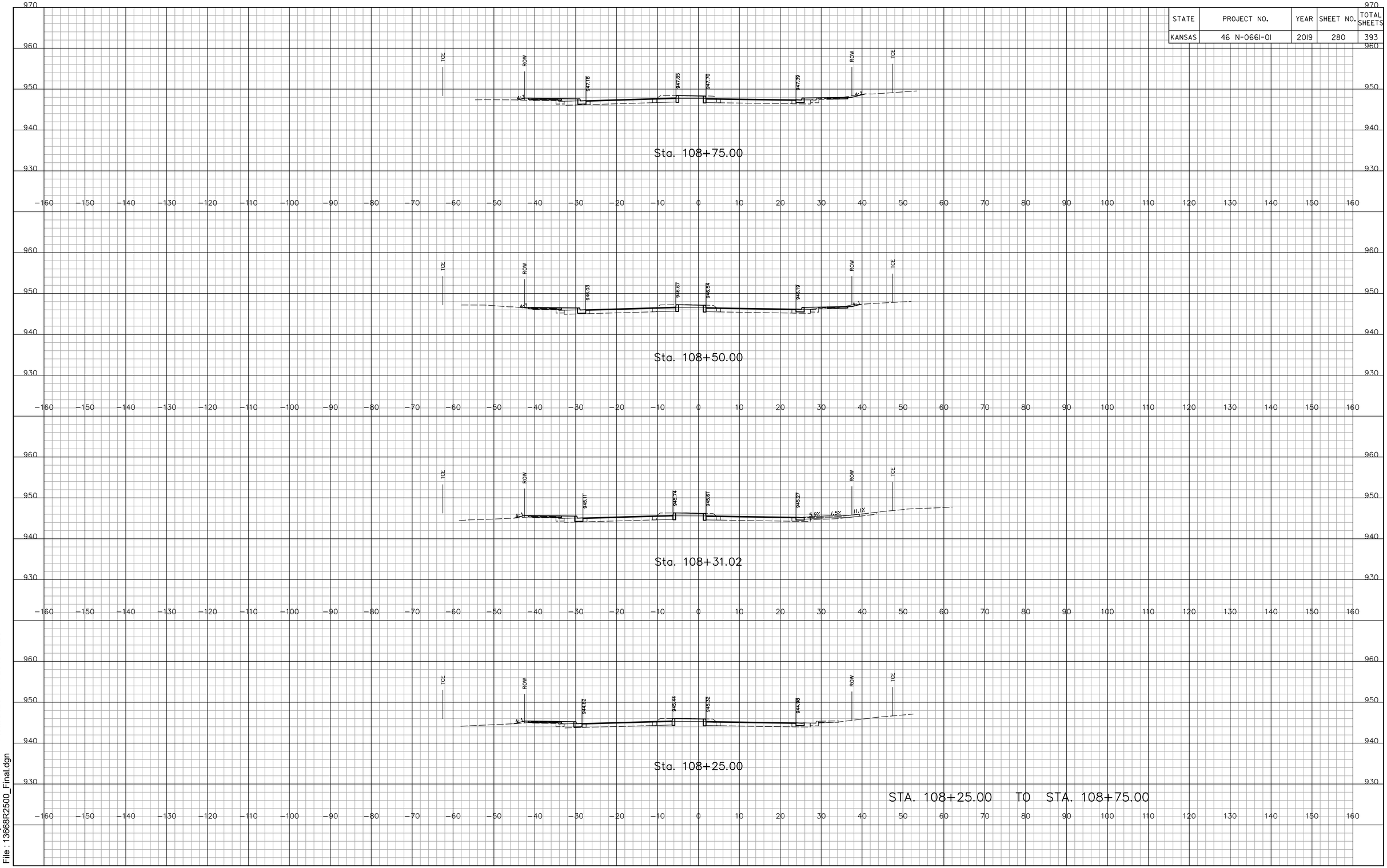



Sta. 107+75.00

STA. 107+75.00 TO STA. 108+00.00

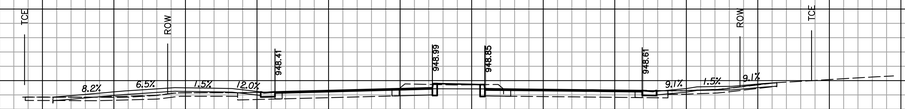
Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 280 | 393 |

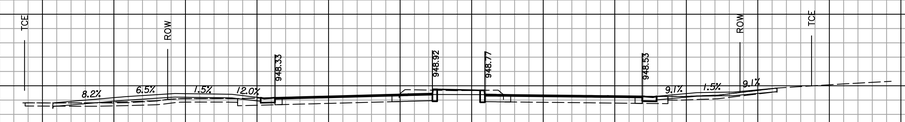



Plotted :25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

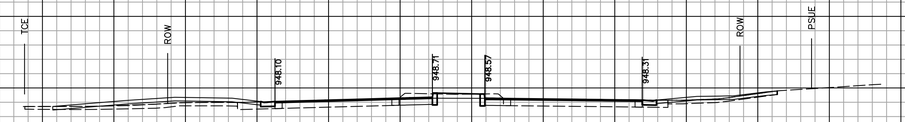
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 281 | 393 |




Sta. 109+00.00




Sta. 108+98.33



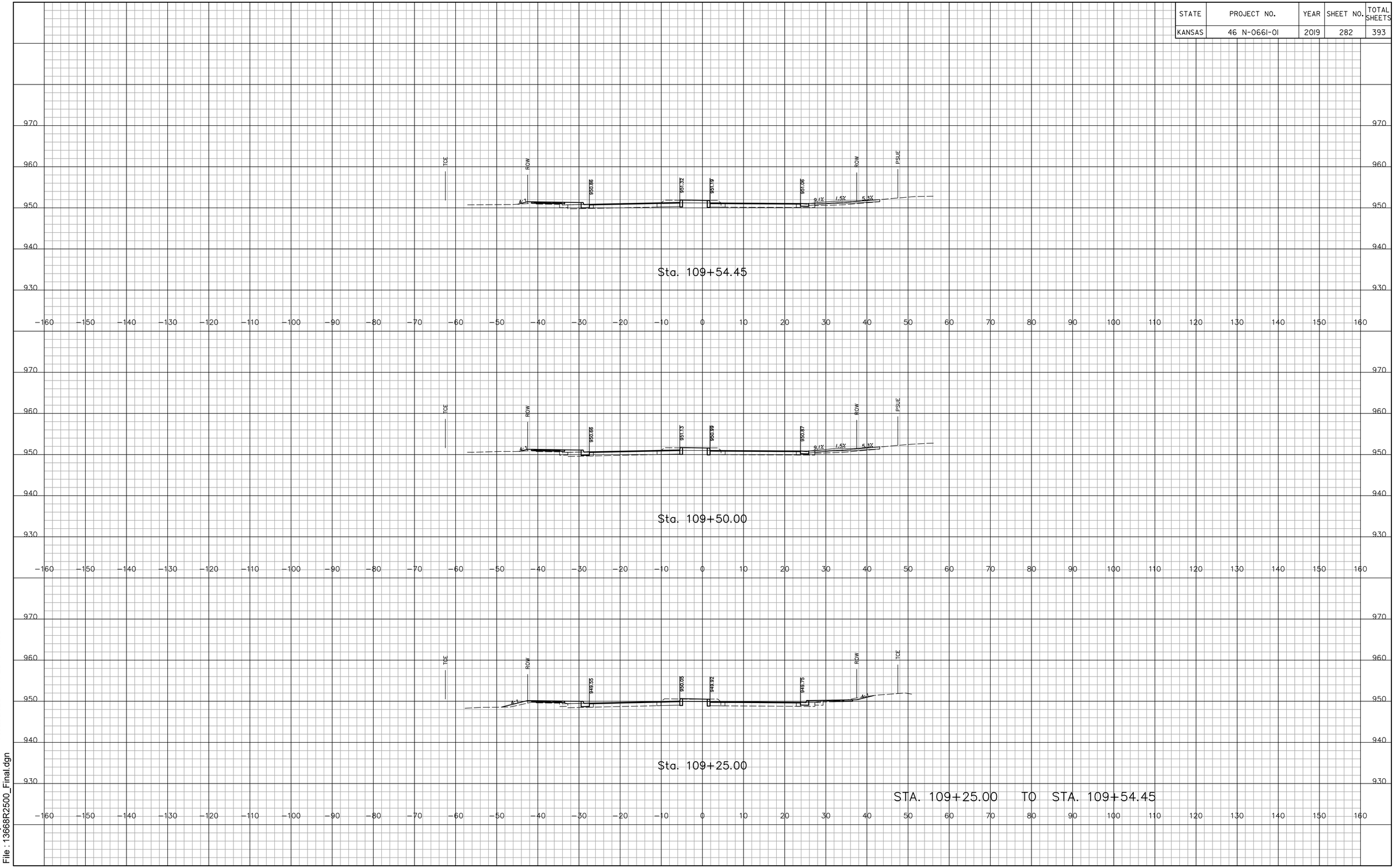

Sta. 108+93.79

STA. 108+93.79 TO STA. 109+00.00

Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

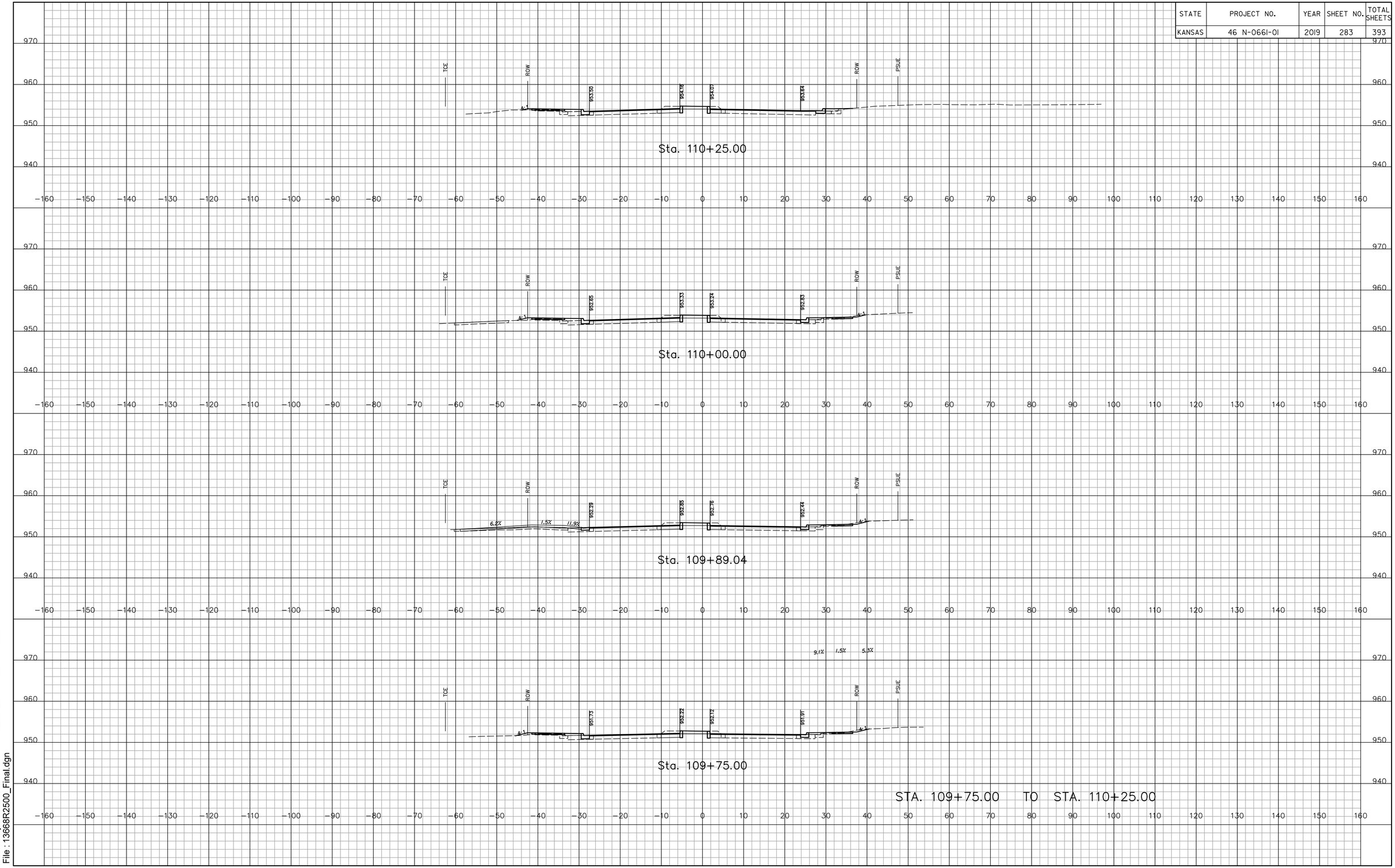
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 282 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

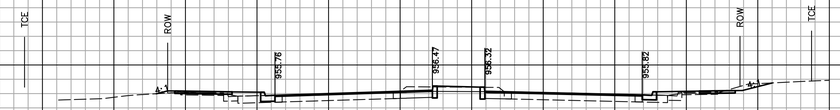
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 283 | 393 |



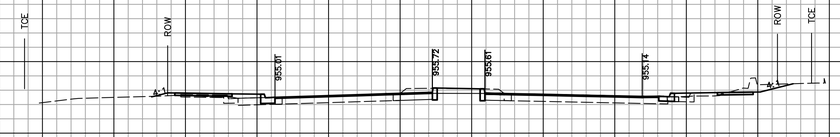

STA. 109+75.00 TO STA. 110+25.00

Plotted :25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

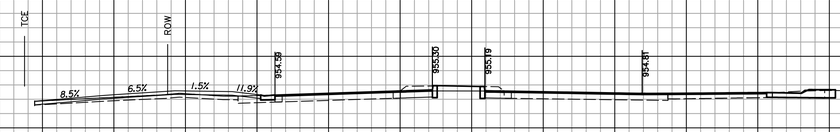
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 284 | 393 |



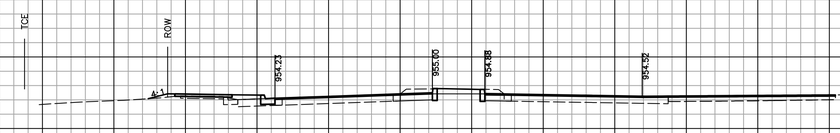

Sta. 111+00.00




Sta. 110+75.00




Sta. 110+60.64

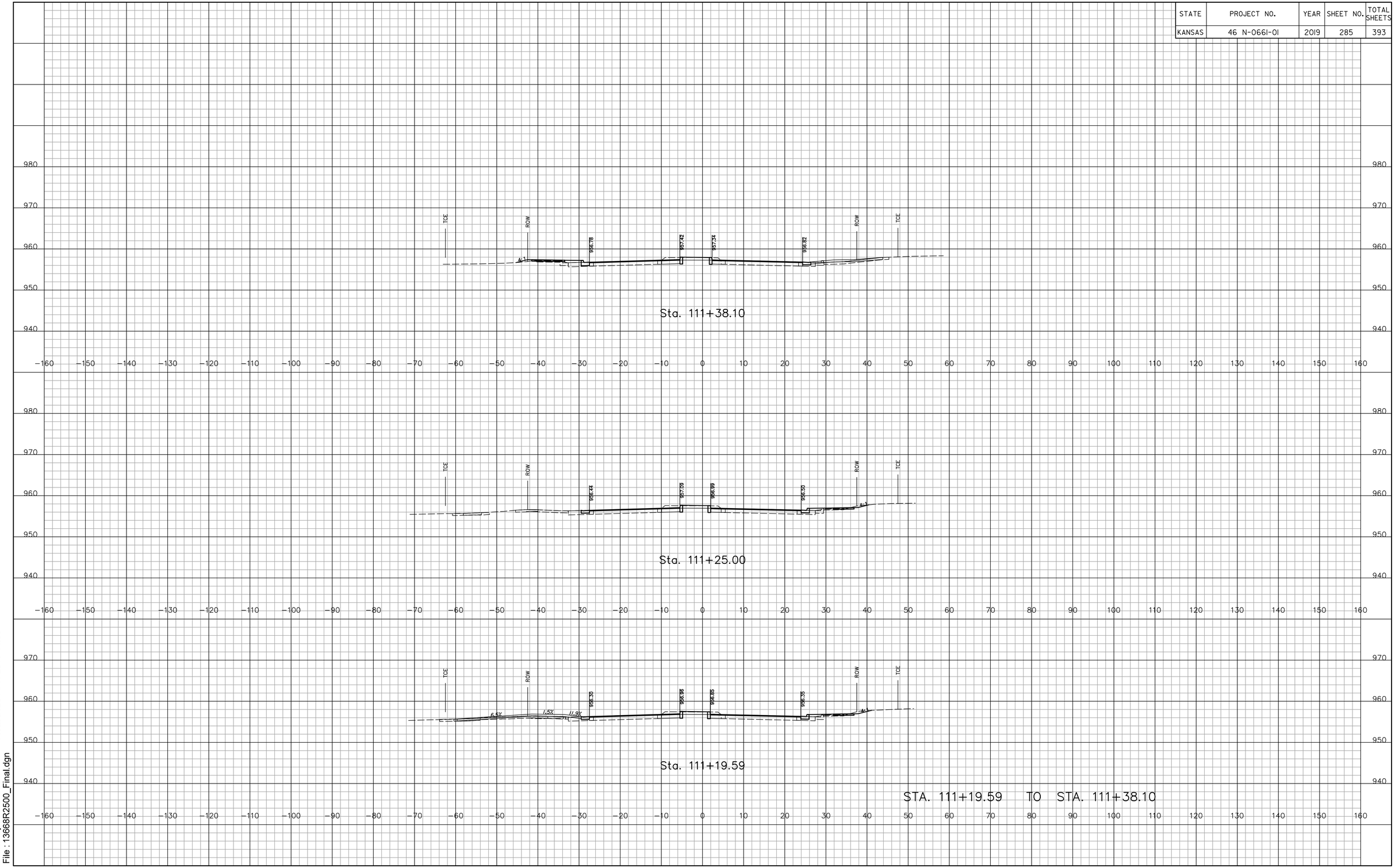



Sta. 110+50.00

STA. 110+50.00 TO STA. 111+00.00

Plotted :25-APR-2019 14:38
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 285 | 393 |




Plotted :25-APR-2019 14:38
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

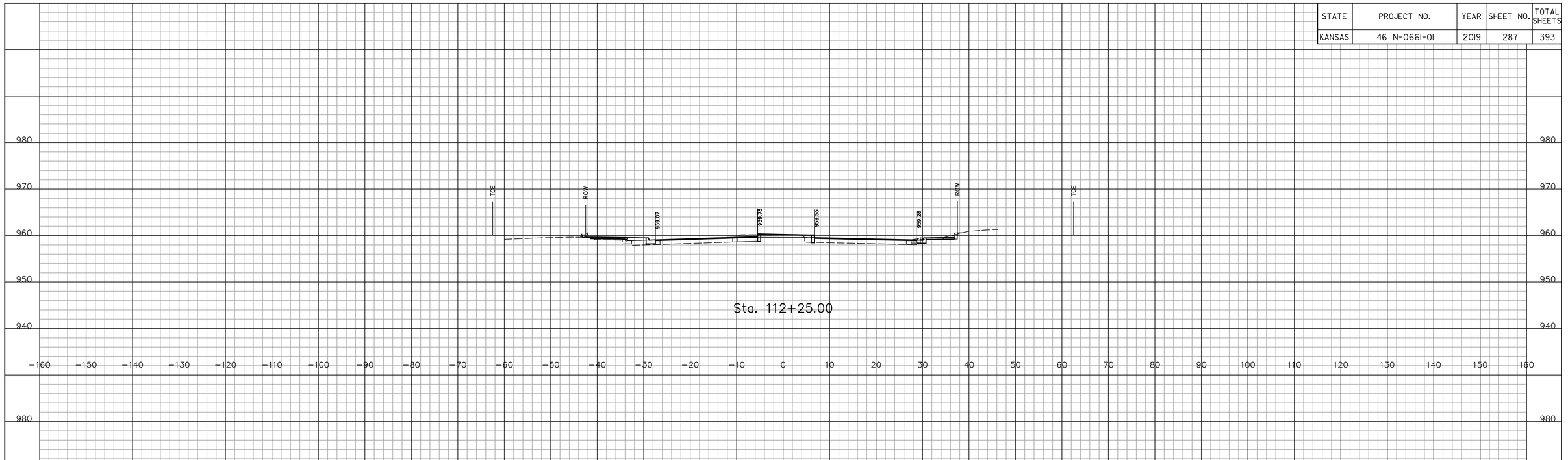
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 286 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By: lrosenbaum
File : 13668R2500_Final.dgn

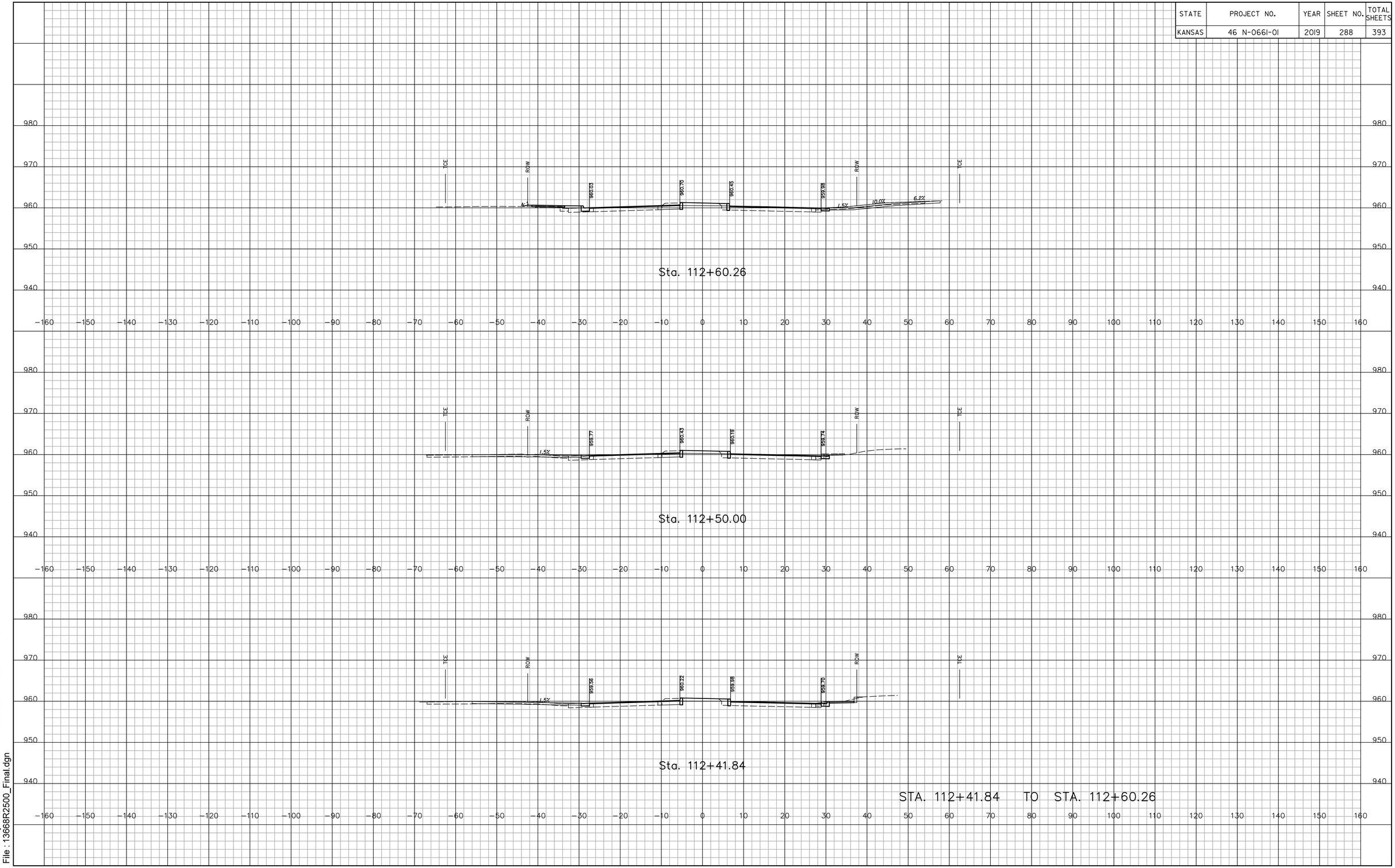
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 287 | 393 |




Plotted : 25-APR-2019 14:38

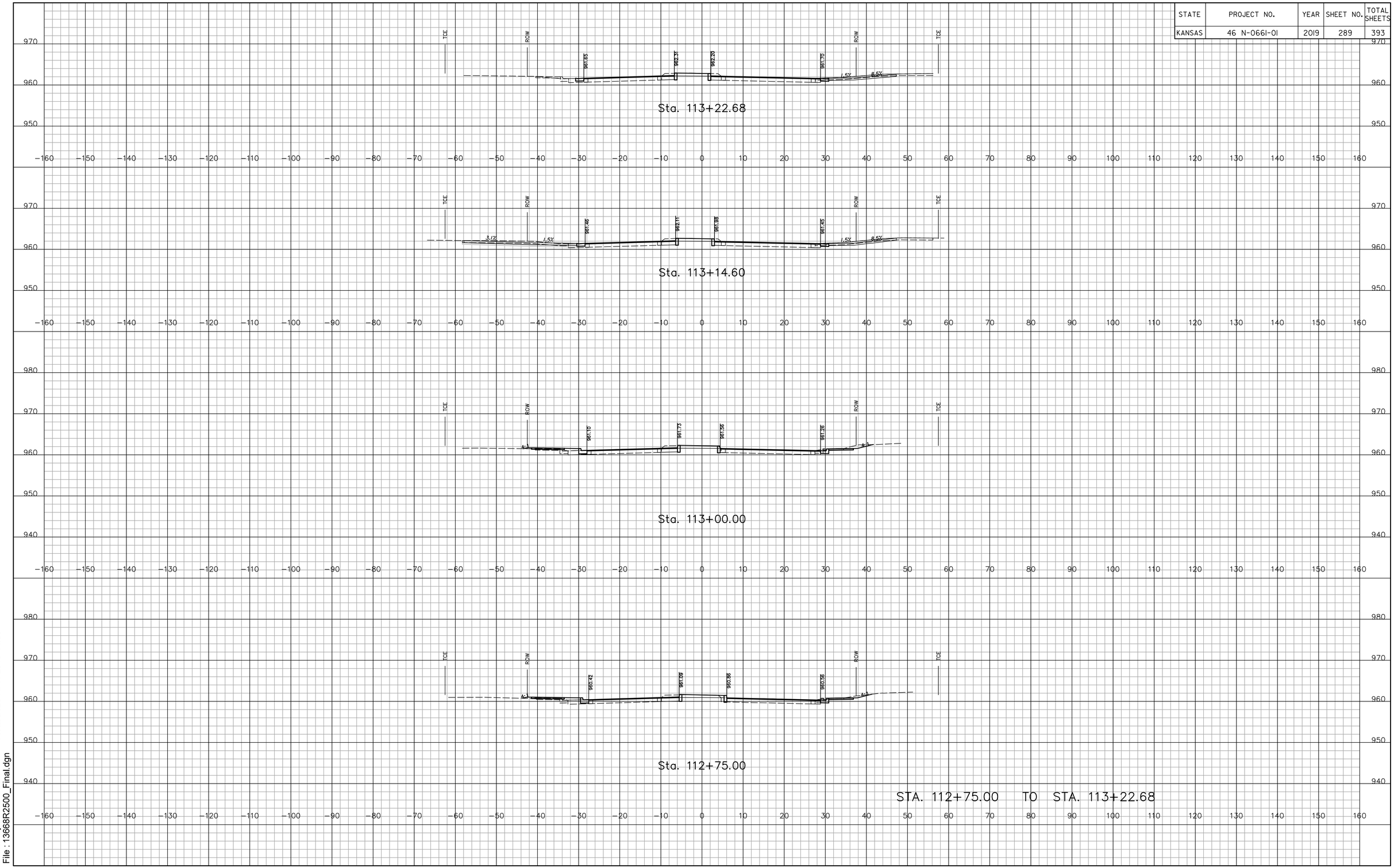
Drawn By : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 288 | 393 |




Plotted : 25-APR-2019 14:38
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 289 | 393 |



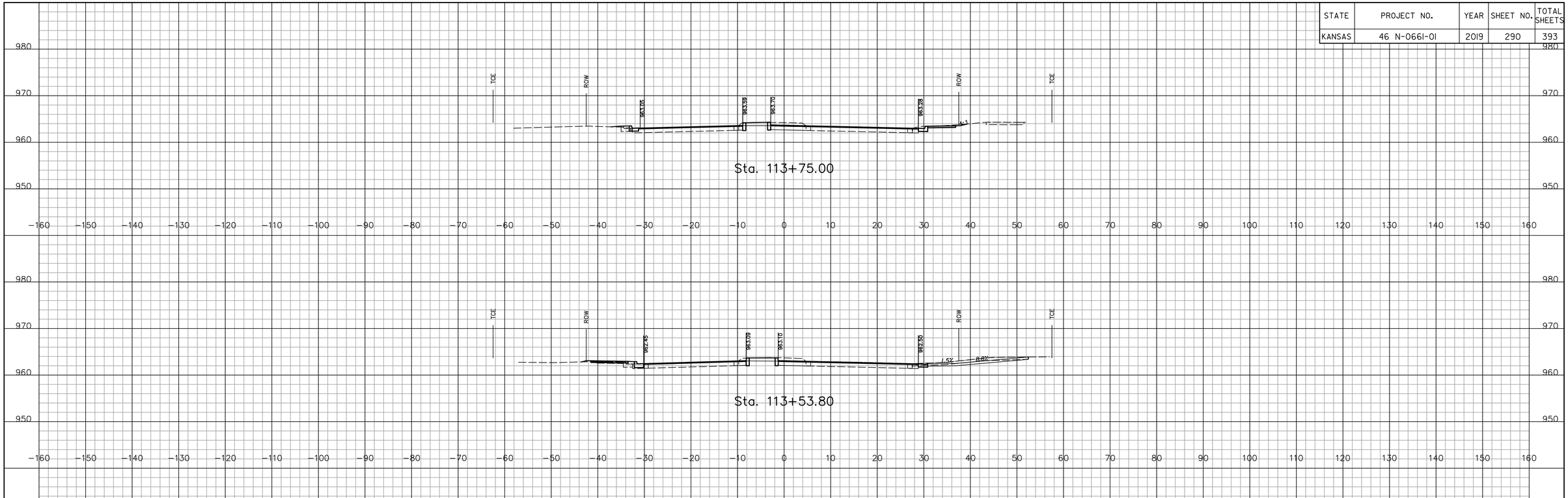

STA. 112+75.00 TO STA. 113+22.68

Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum

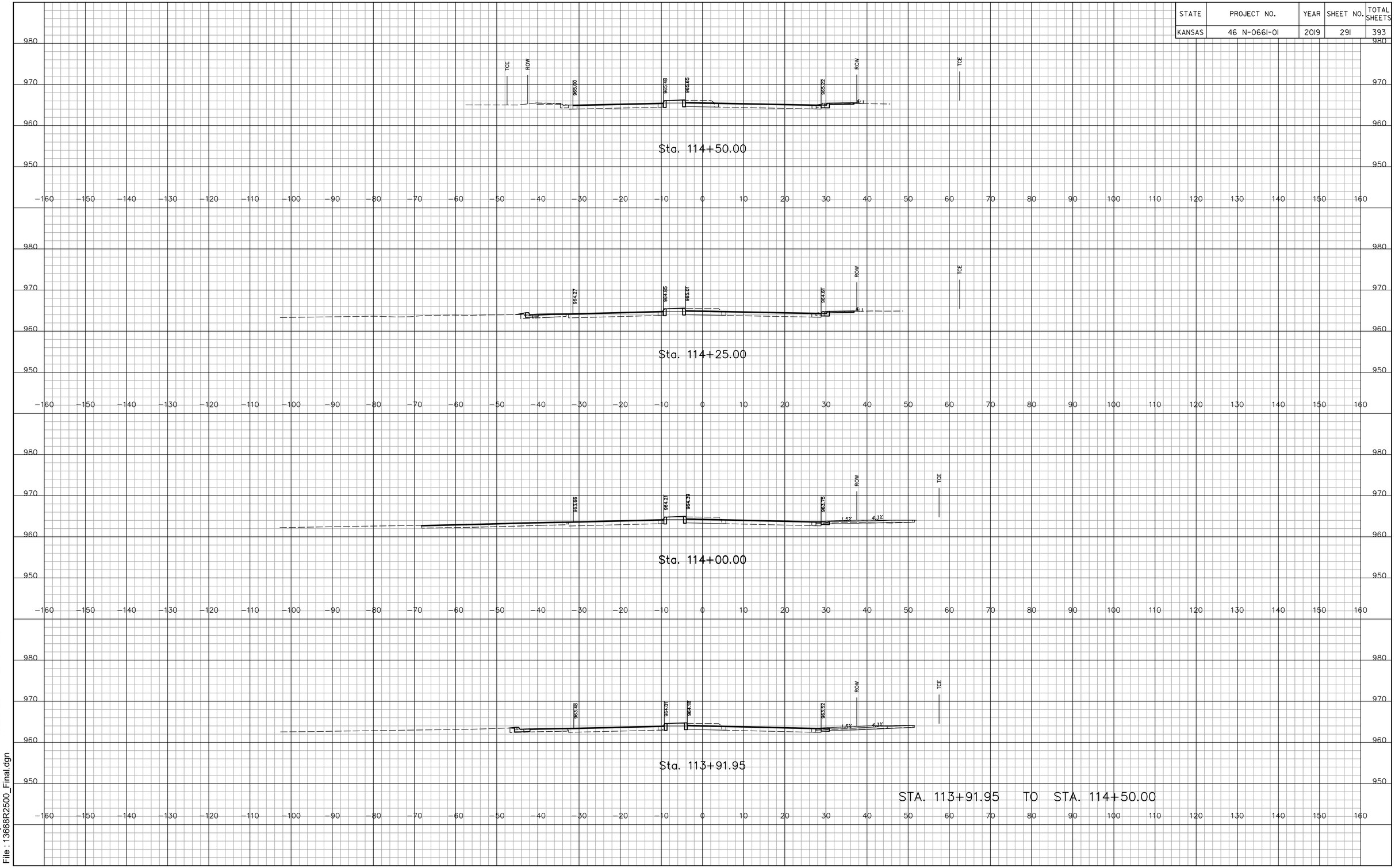
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 290 | 393 |



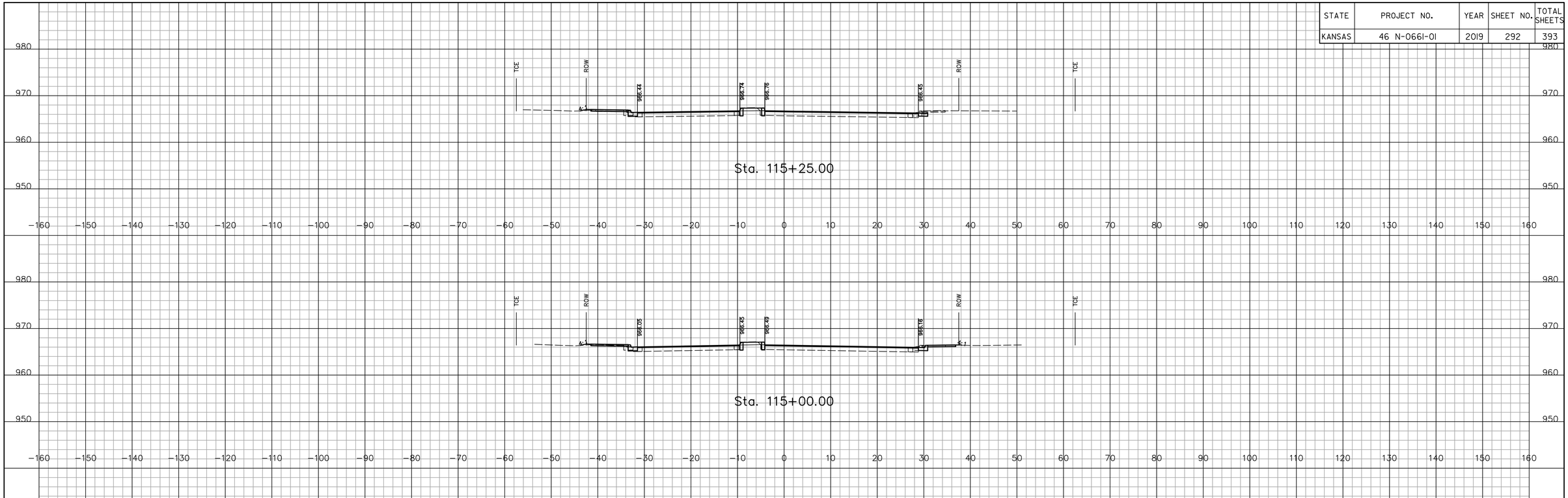

Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 291 | 393 |



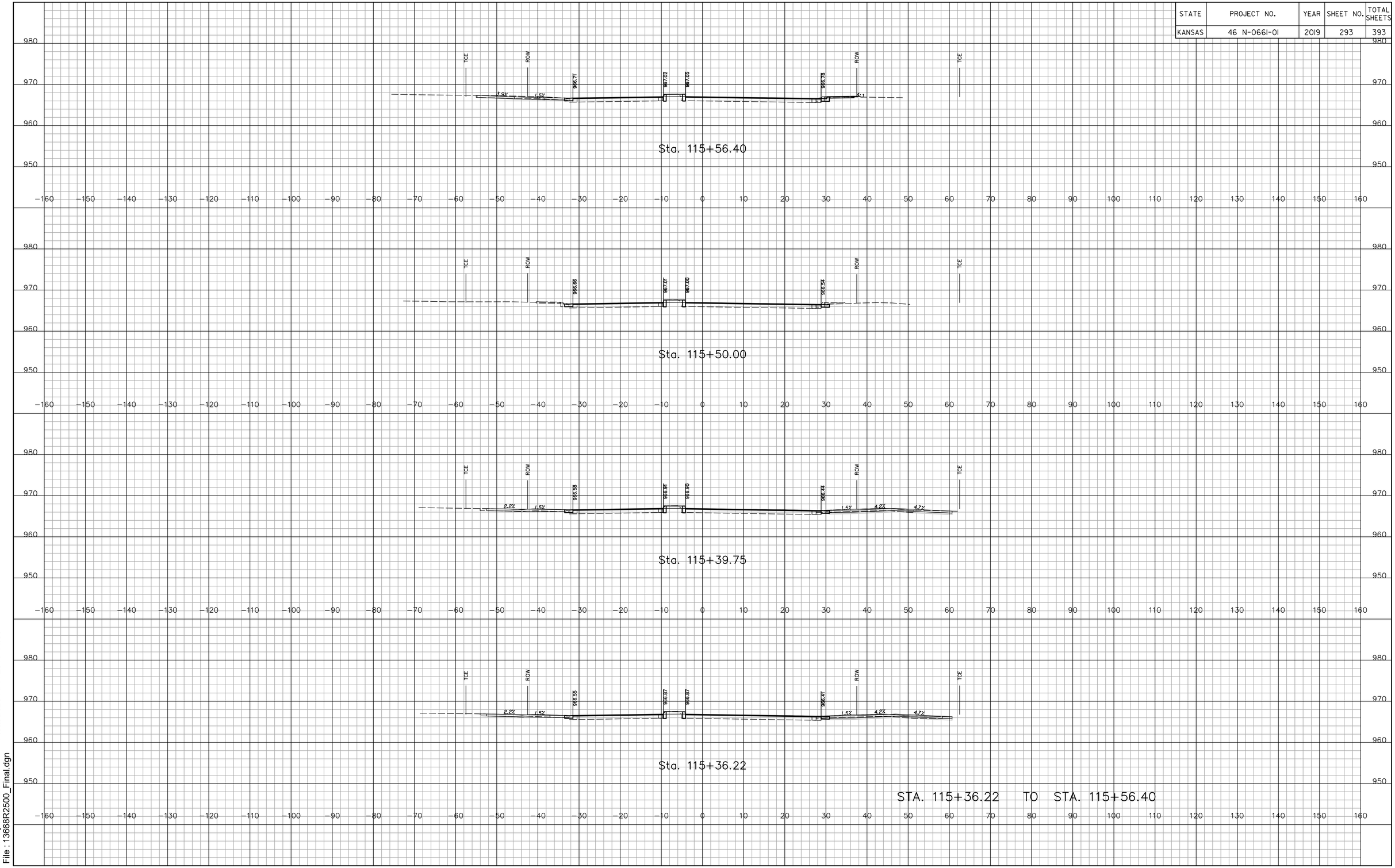

Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 292 | 393 |



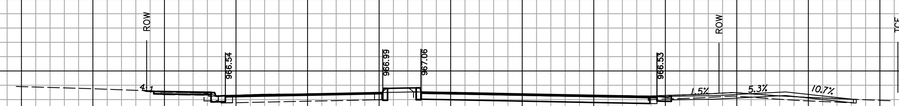

Plotted : 25-APR-2019 14:38
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 293 | 393 |

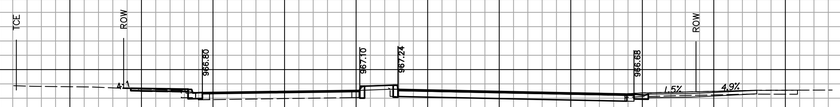



Plotted :25-APR-2019 14:38
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

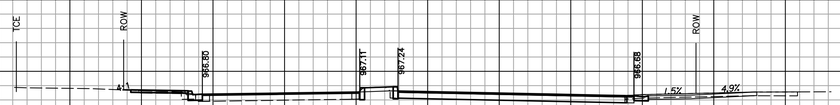
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 294 | 393 |



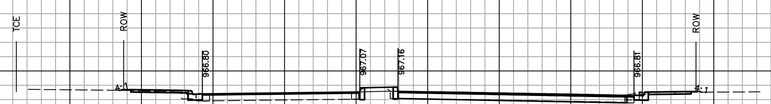

Sta. 116+25.00




Sta. 116+00.82




Sta. 116+00.00




Sta. 115+75.00

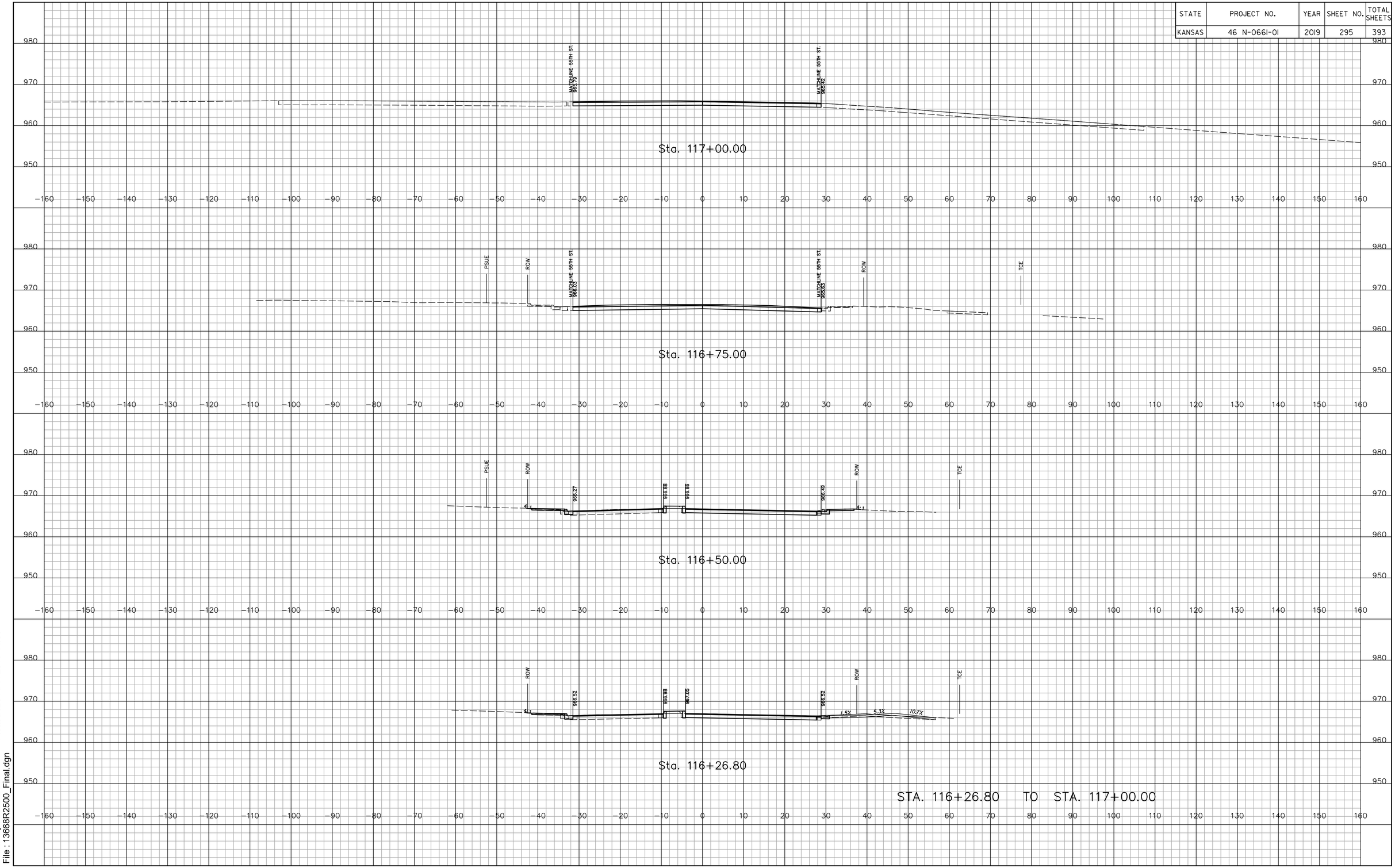
STA. 115+75.00 TO STA. 116+25.00

Plotted : 25-APR-2019 14:38

Drawn By: : Irosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 295 | 393 |

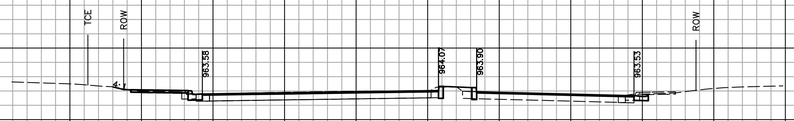



Plotted : 25-APR-2019 14:38
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

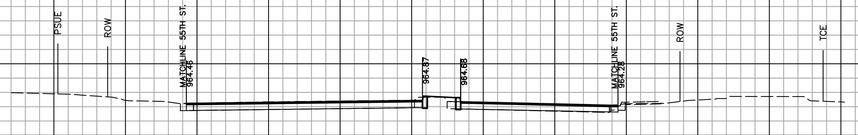
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 296 | 393 |



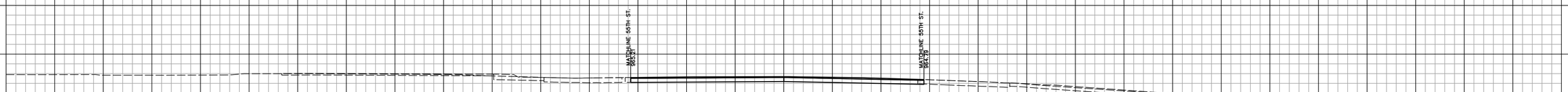

Sta. 117+87.95




Sta. 117+75.00




Sta. 117+50.00



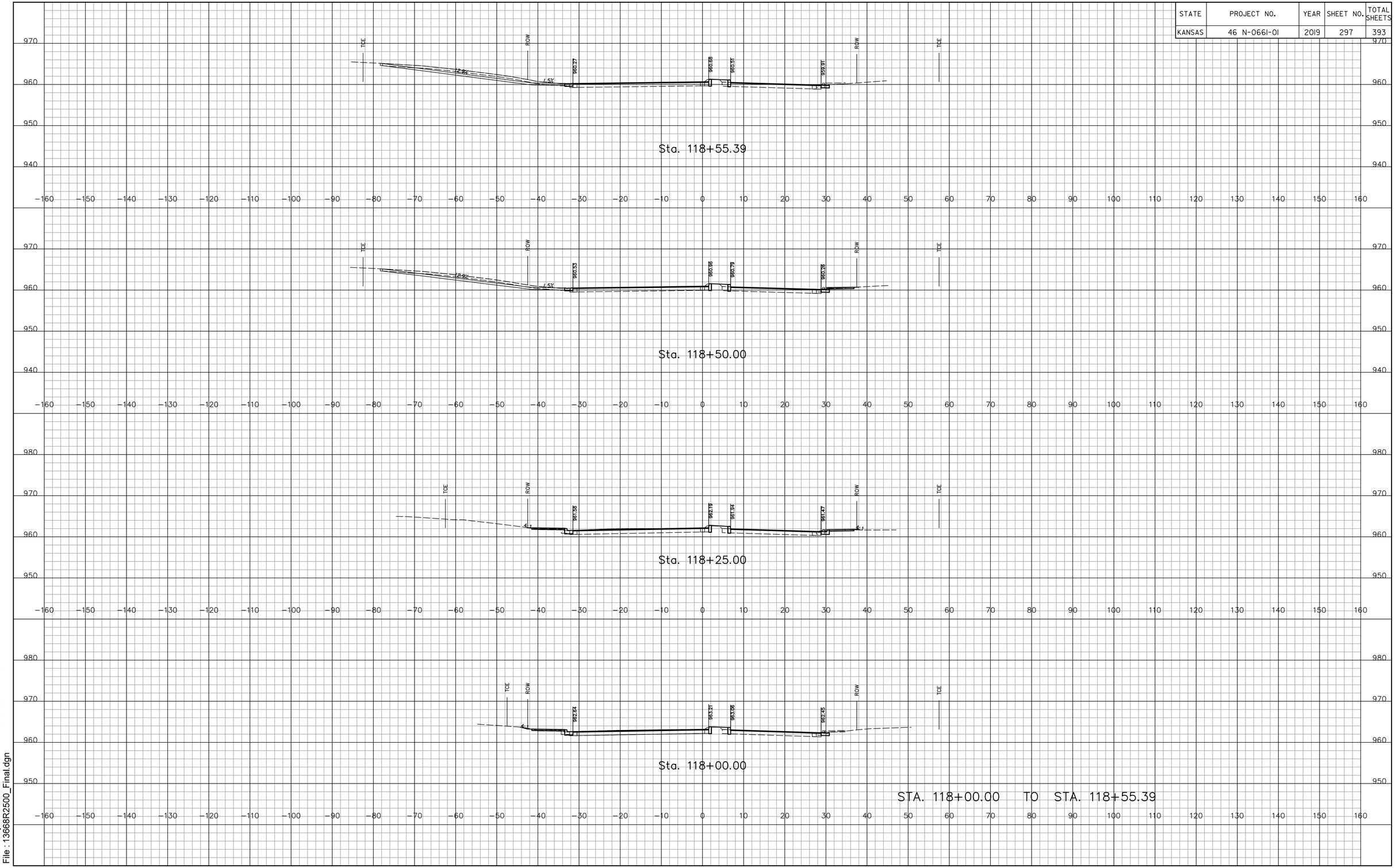

Sta. 117+25.00

STA. 117+25.00 TO STA. 117+87.95

Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 297 | 393 |




Sta. 118+55.39




Sta. 118+50.00




Sta. 118+25.00

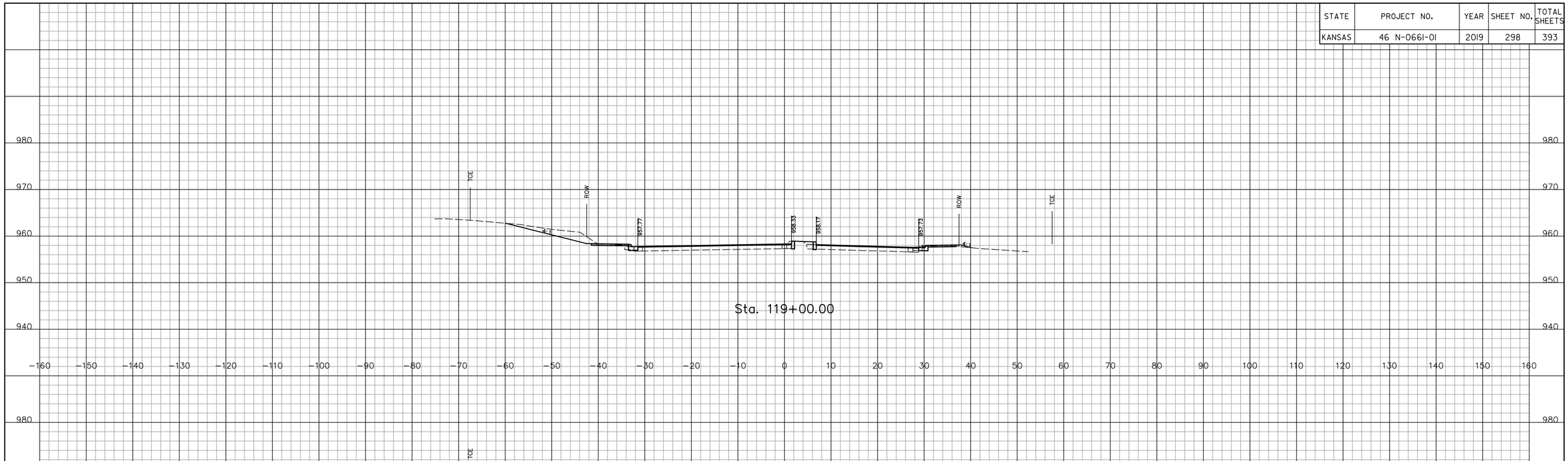



Sta. 118+00.00

STA. 118+00.00 TO STA. 118+55.39

Plotted : 25-APR-2019 14:38
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 298 | 393 |

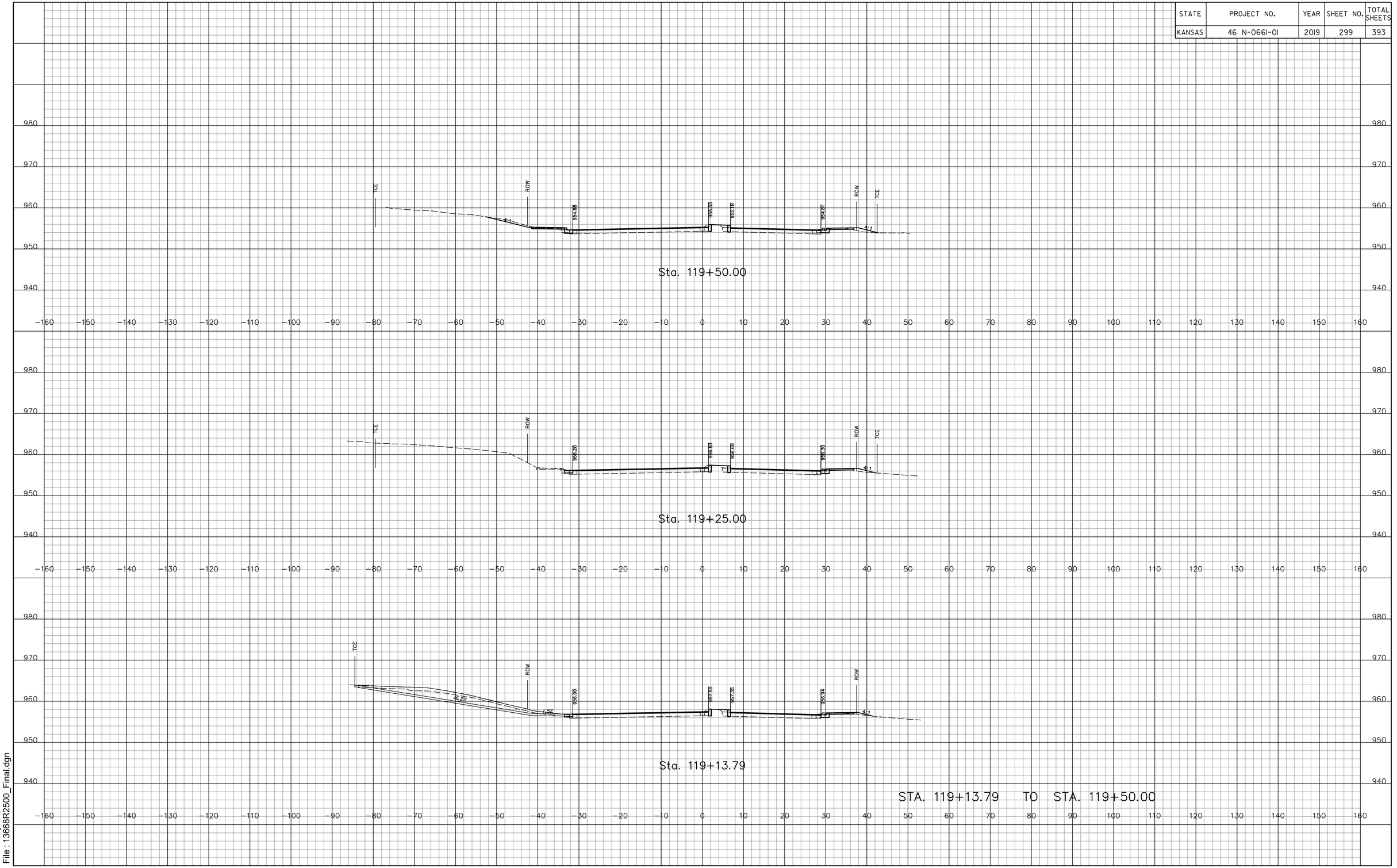



Plotted : 25-APR-2019 14:38

Drawn By : Irosenbaum

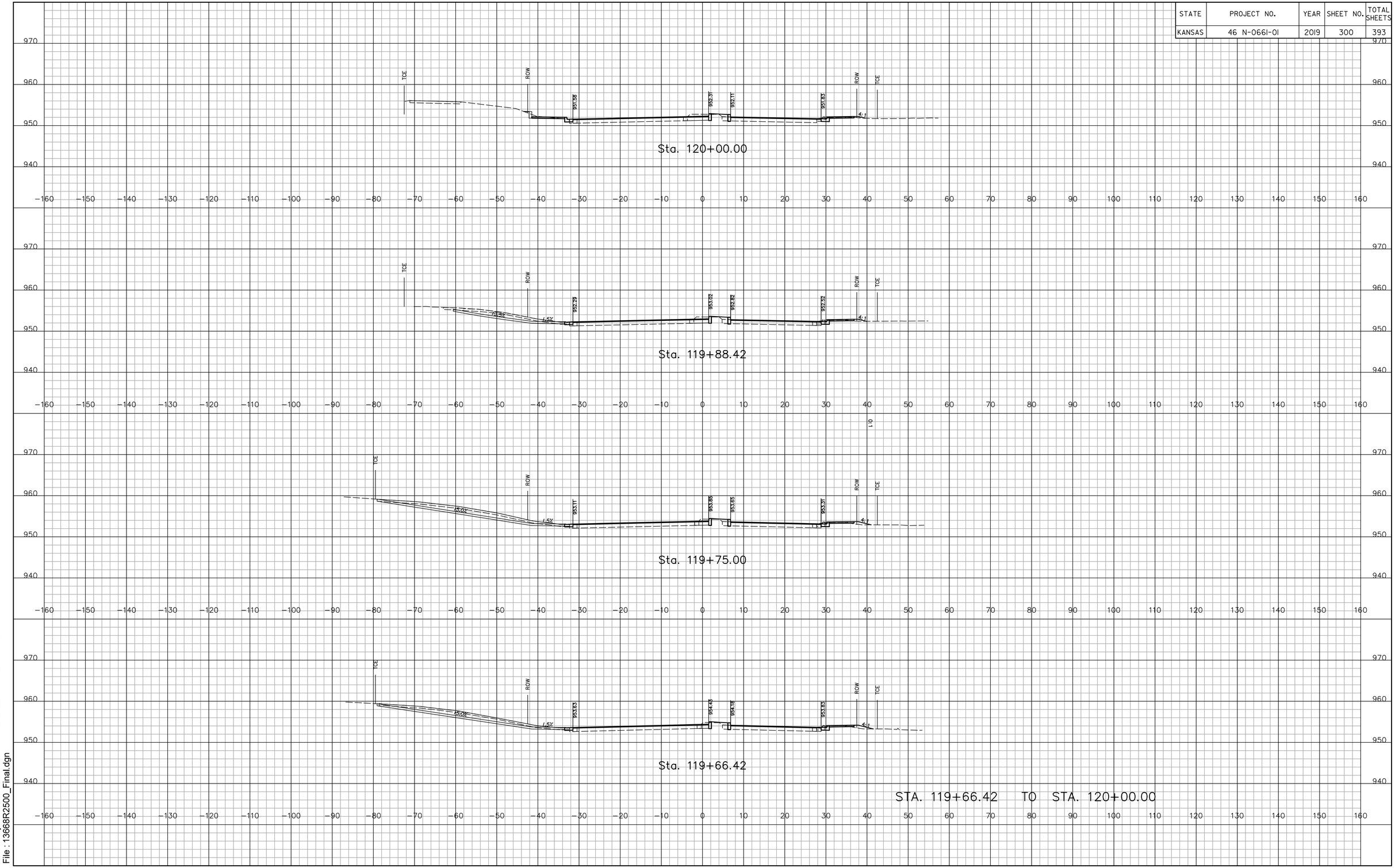
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 299 | 393 |




Plotted :25-APR-2019 14:38
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 300 | 393 |




Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

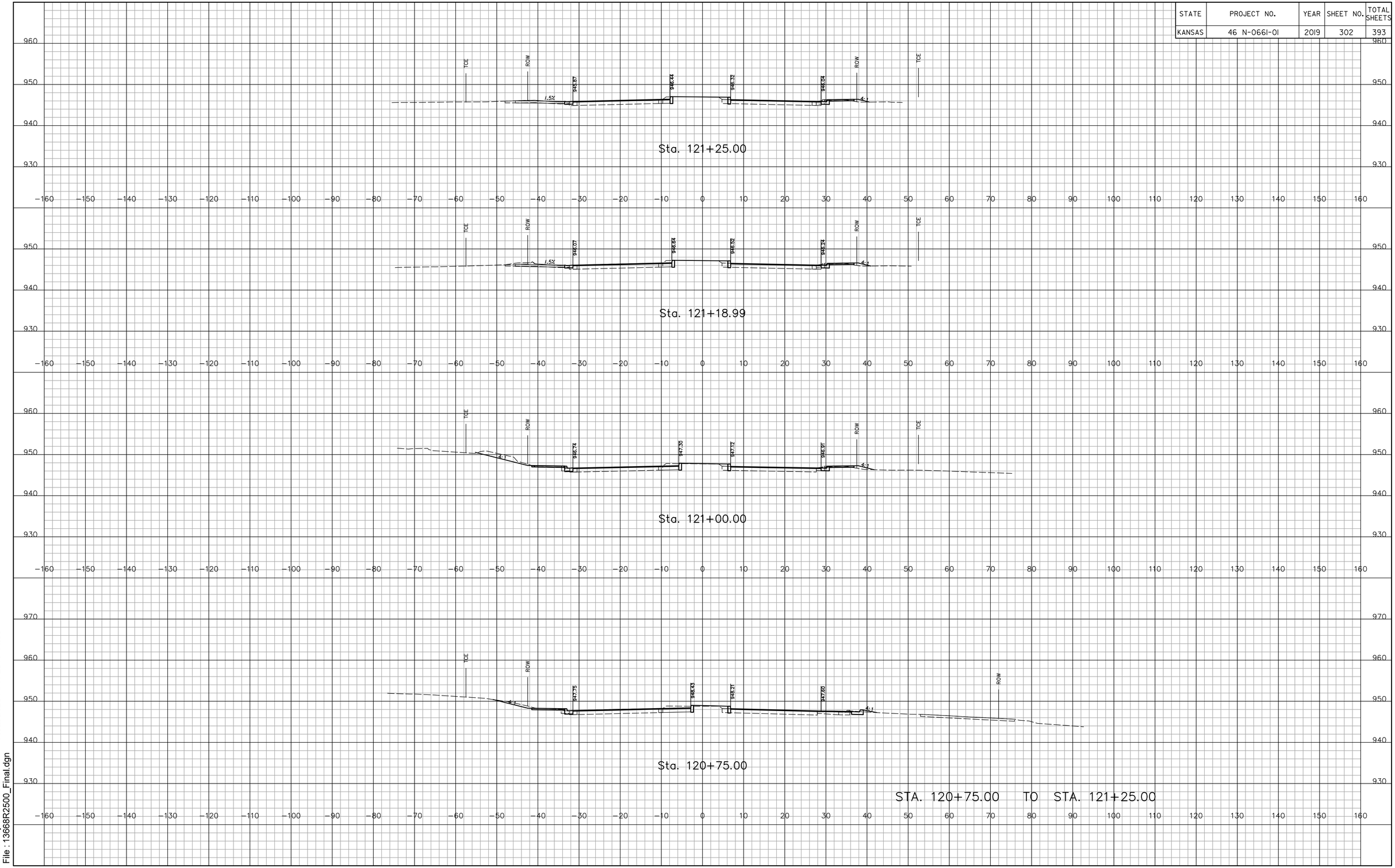
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 301 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 302 | 393 |

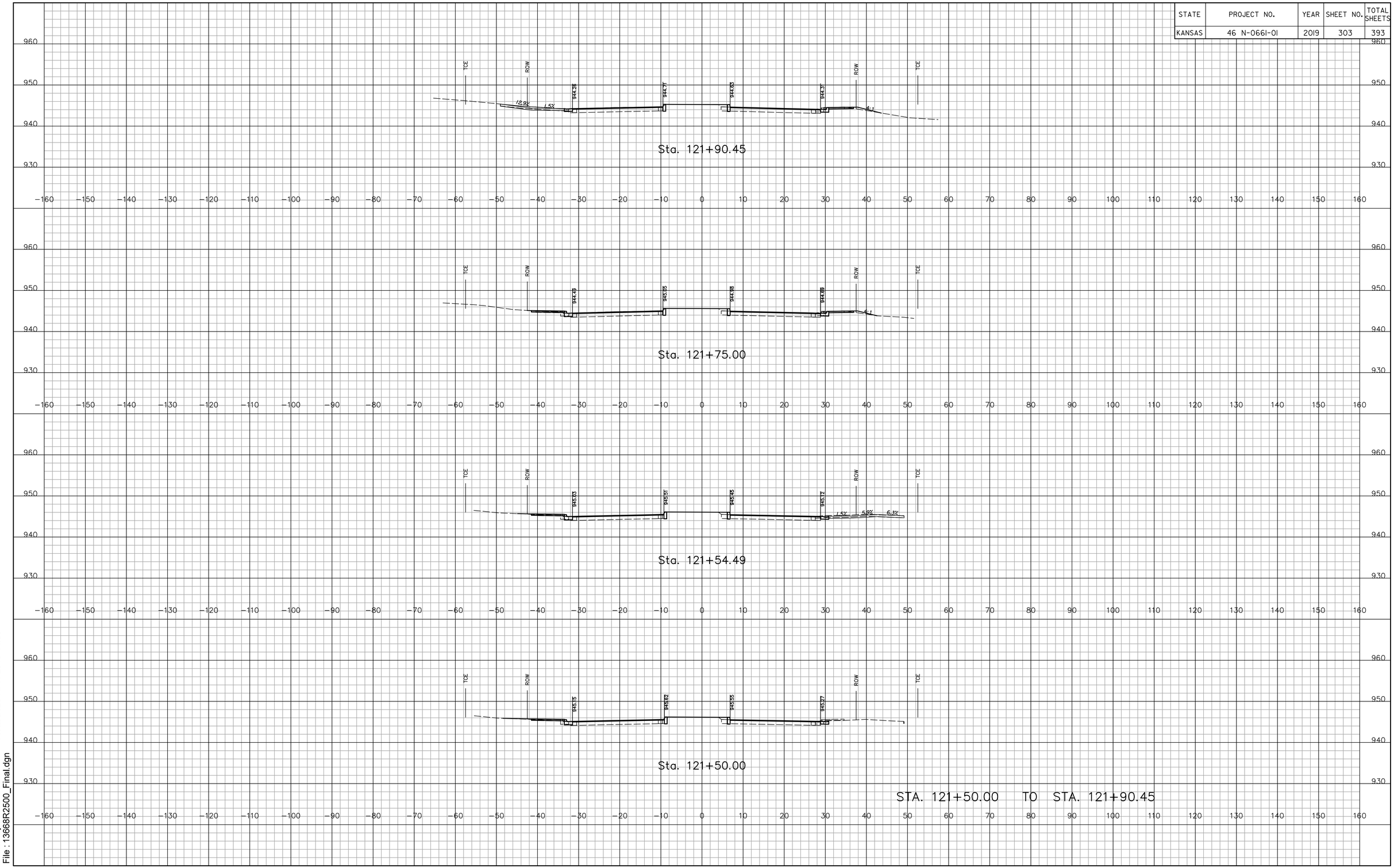



STA. 120+75.00 TO STA. 121+25.00

Plotted : 25-APR-2019 14:38

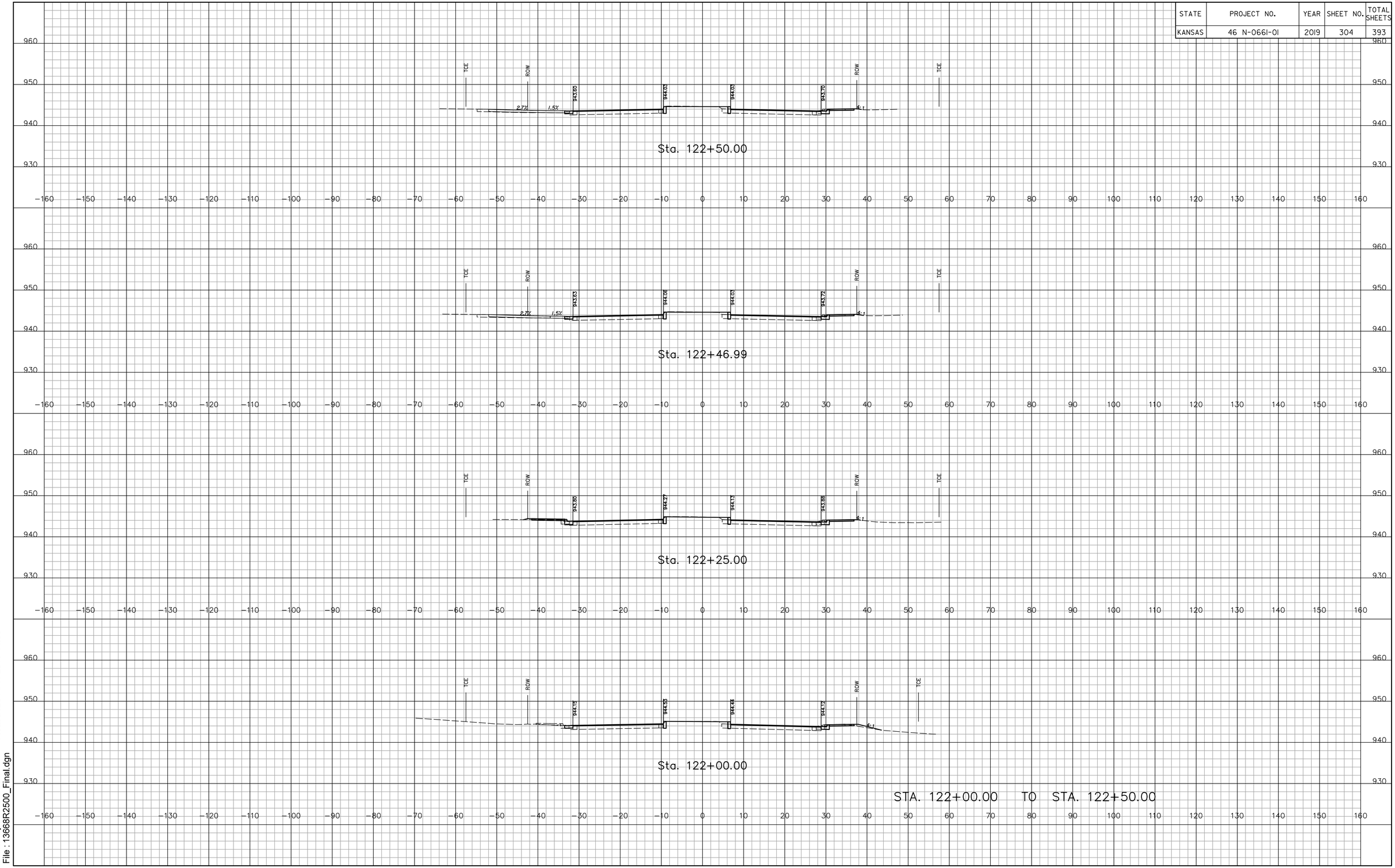
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 303 | 393 |




Plotted : 25-APR-2019 14:38
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

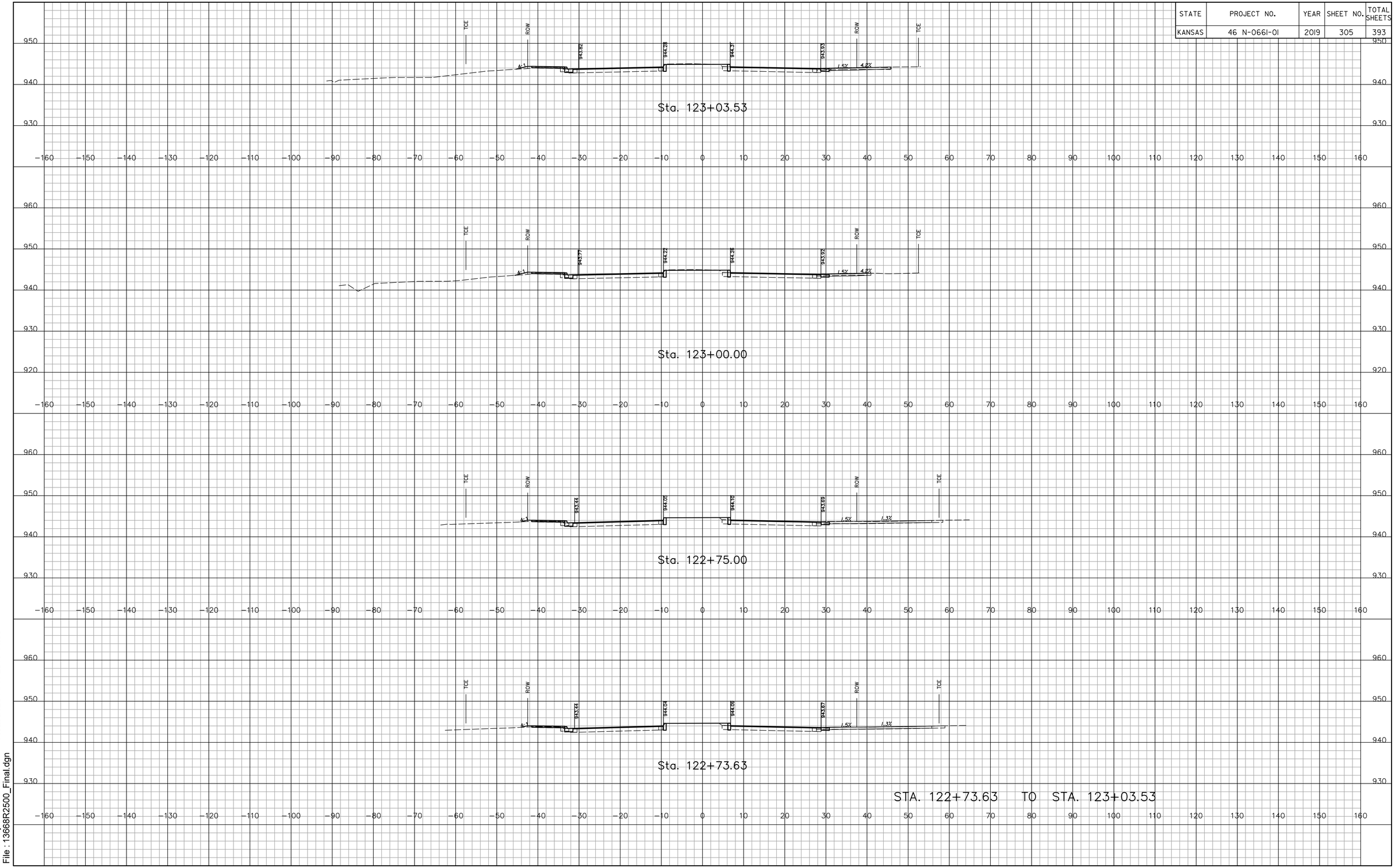
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 304 | 393 |




STA. 122+00.00 TO STA. 122+50.00

Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 305 | 393 |



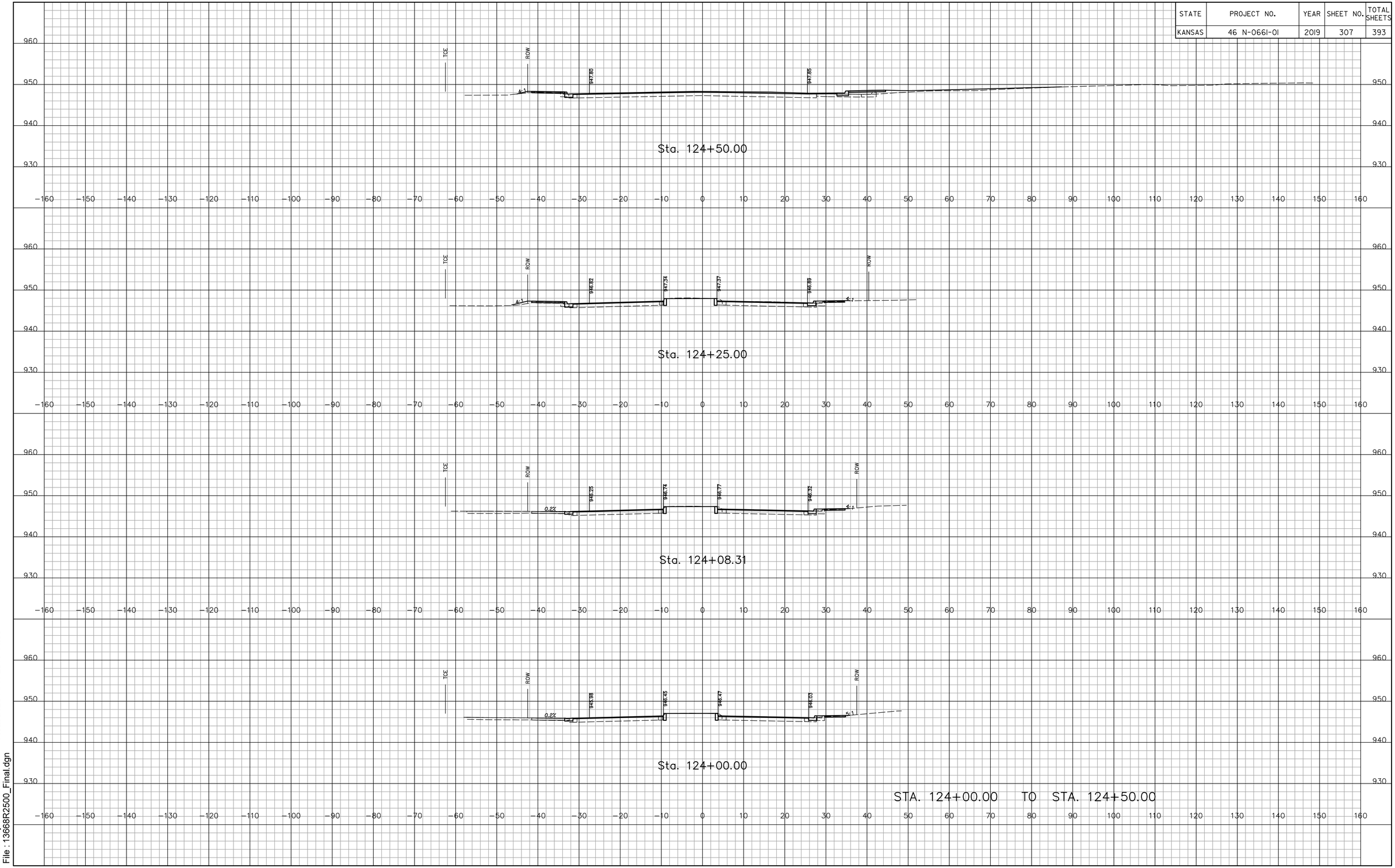

Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 306 | 393 |



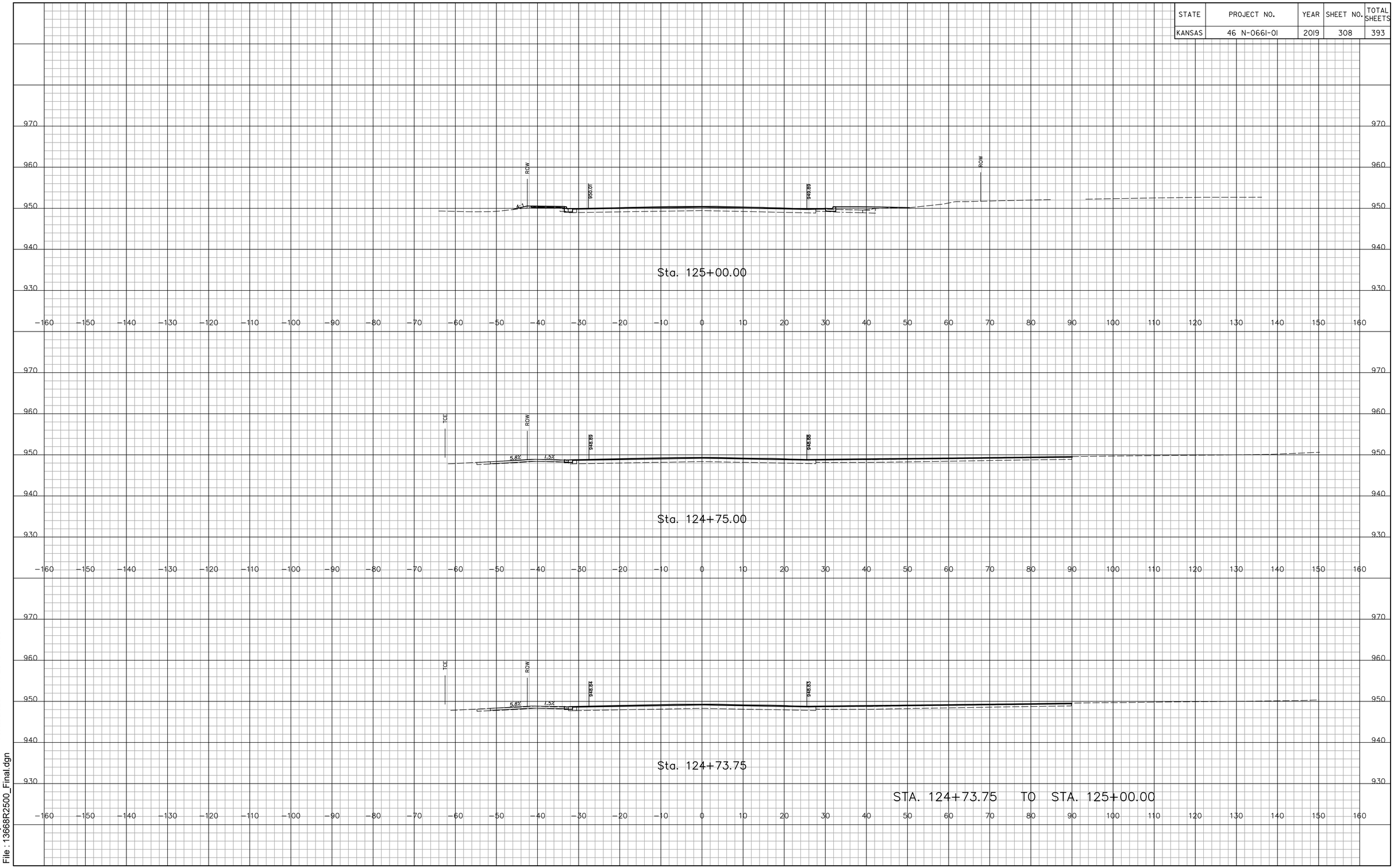

Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 307 | 393 |




Plotted : 25-APR-2019 14:38
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

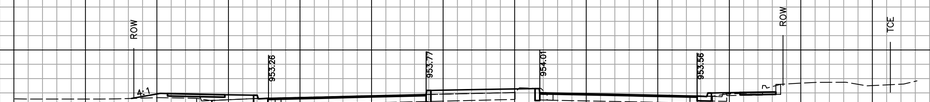
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 308 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 309 | 393 |



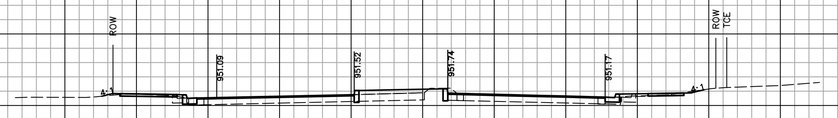

Sta. 125+75.00




Sta. 125+58.81




Sta. 125+50.00




Sta. 125+25.00

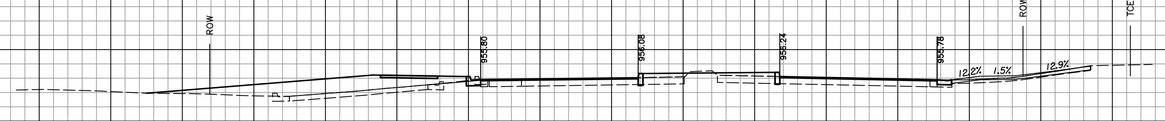
STA. 125+25.00 TO STA. 125+75.00

Plotted : 25-APR-2019 14:38
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

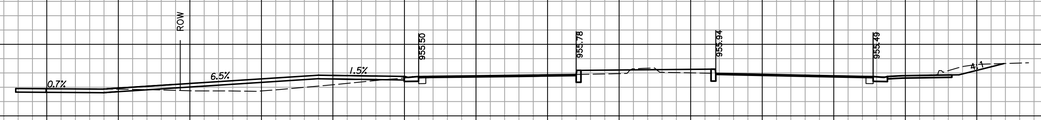
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 310 | 393 |




Sta. 126+26.29




Sta. 126+25.00




Sta. 126+18.34

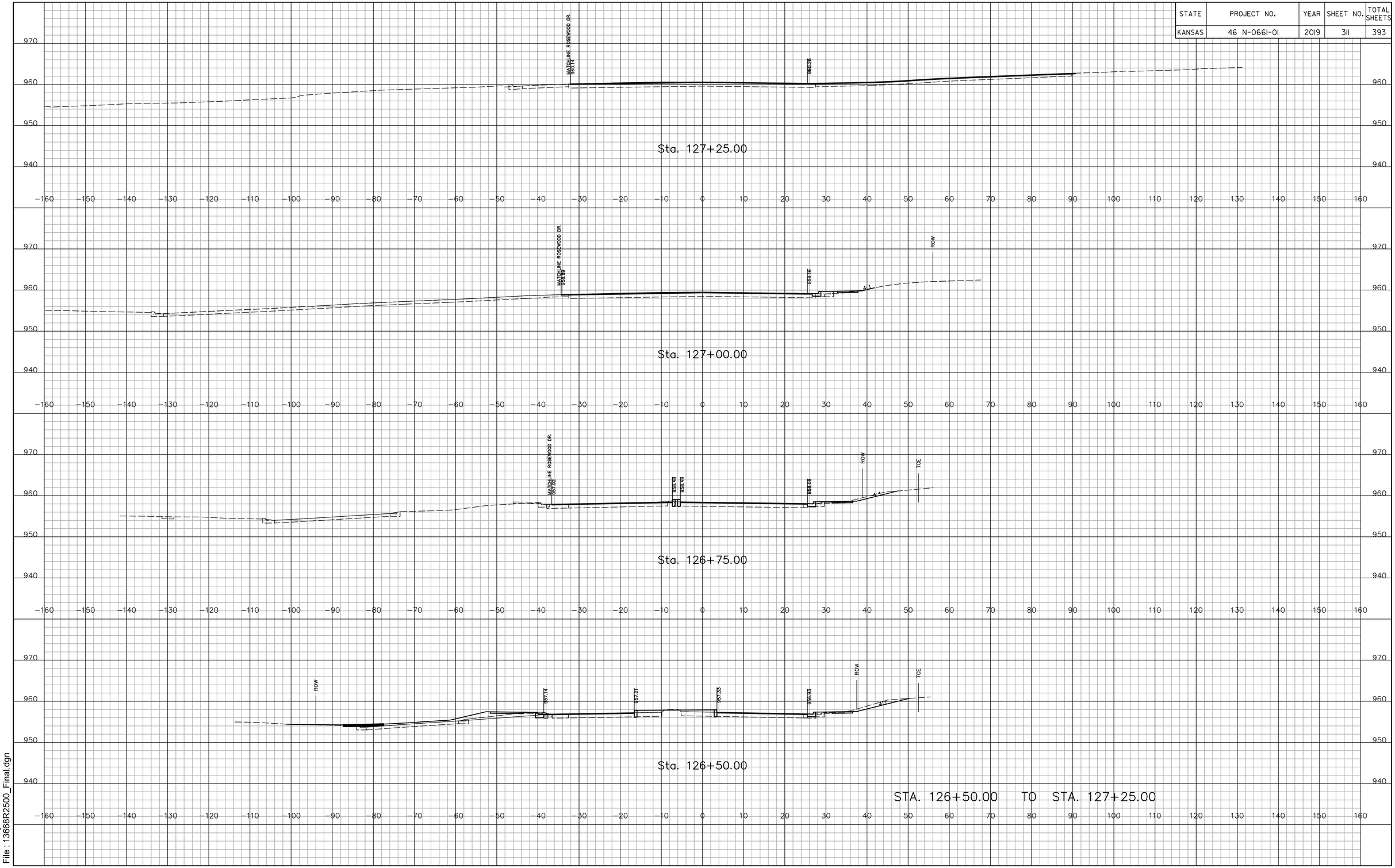



Sta. 126+00.00

STA. 126+00.00 TO STA. 126+26.29

Plotted :25-APR-2019 14:38
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 311 | 393 |




STA. 126+50.00 TO STA. 127+25.00

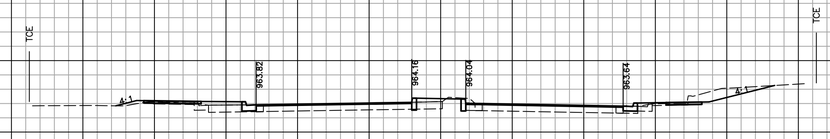
Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 312 | 393 |



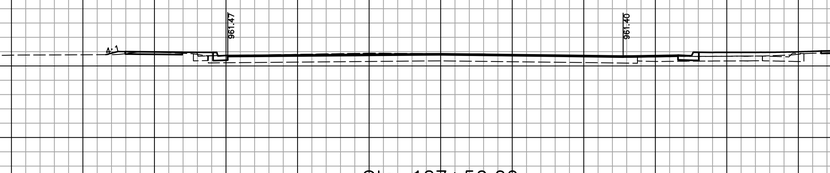

Sta. 128+25.00




Sta. 128+00.00




Sta. 127+75.00



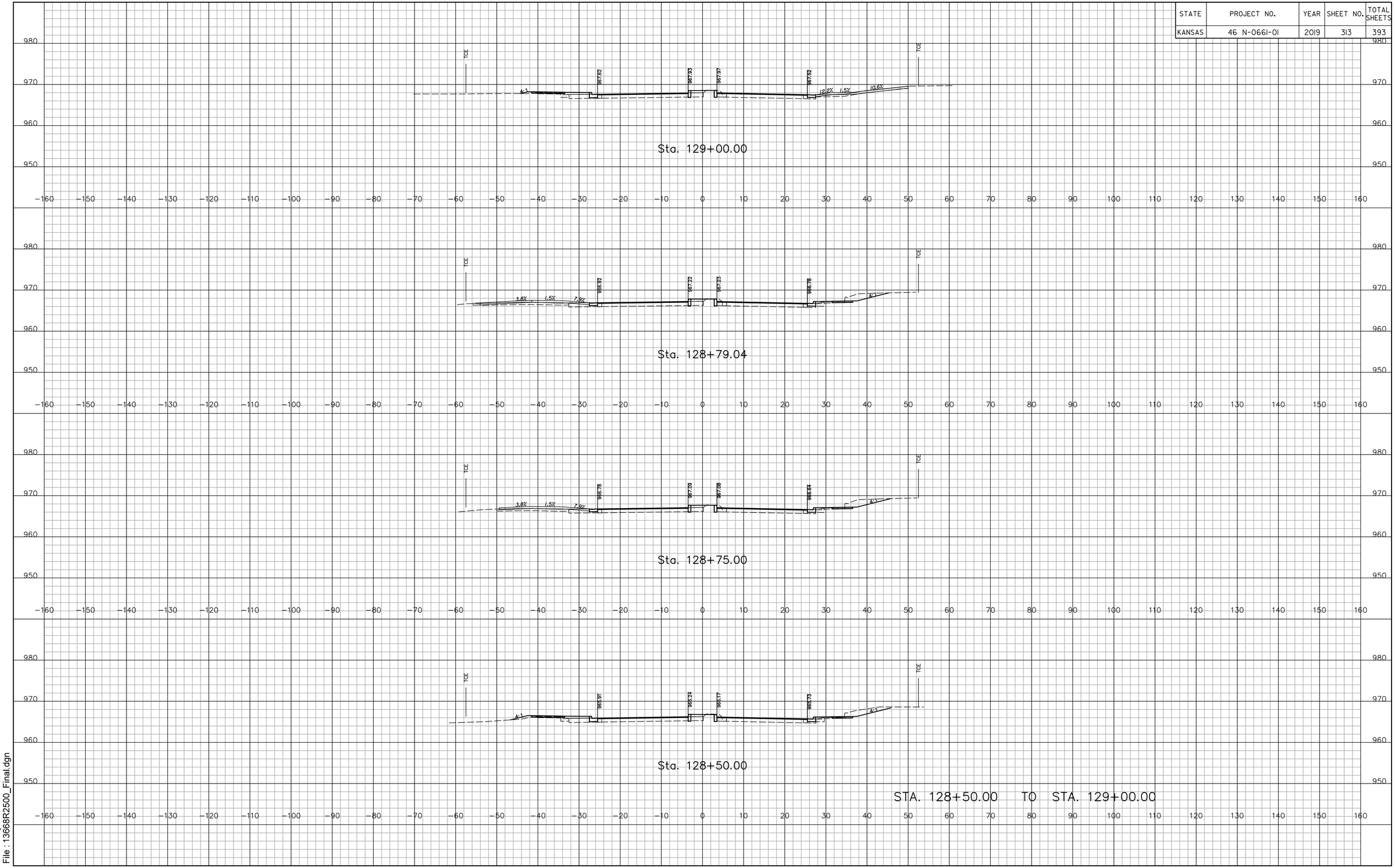

Sta. 127+50.00

STA. 127+50.00 TO STA. 128+25.00

Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 313 | 393 |




STA. 128+50.00 TO STA. 129+00.00

Plotted : 25-APR-2019 14:38

Drawn By: : Irosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 314 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

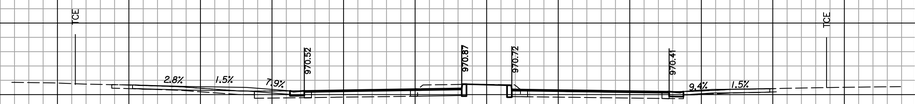
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 315 | 393 |



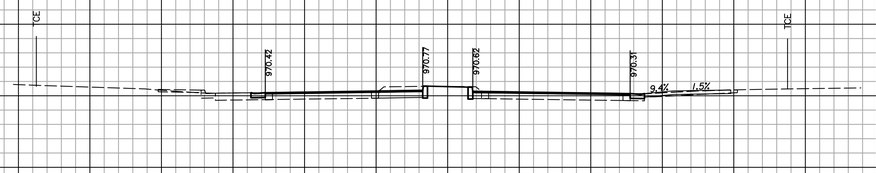

Plotted : 25-APR-2019 14:38

Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

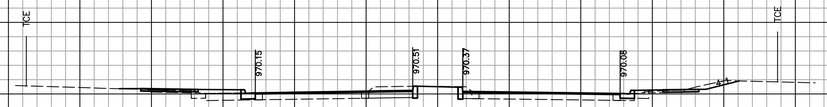
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 316 | 393 |




Sta. 130+20.57




Sta. 130+14.80

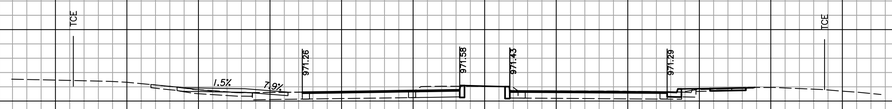



Sta. 130+00.00

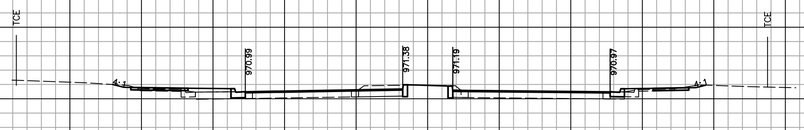
STA. 130+00.00 TO STA. 130+20.57

Plotted : 25-APR-2019 14:38
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

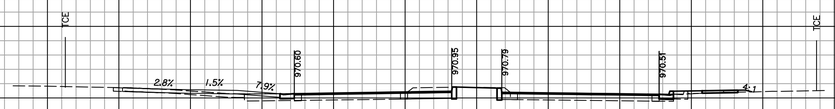
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 317 | 393 |




Sta. 130+75.00




Sta. 130+50.00

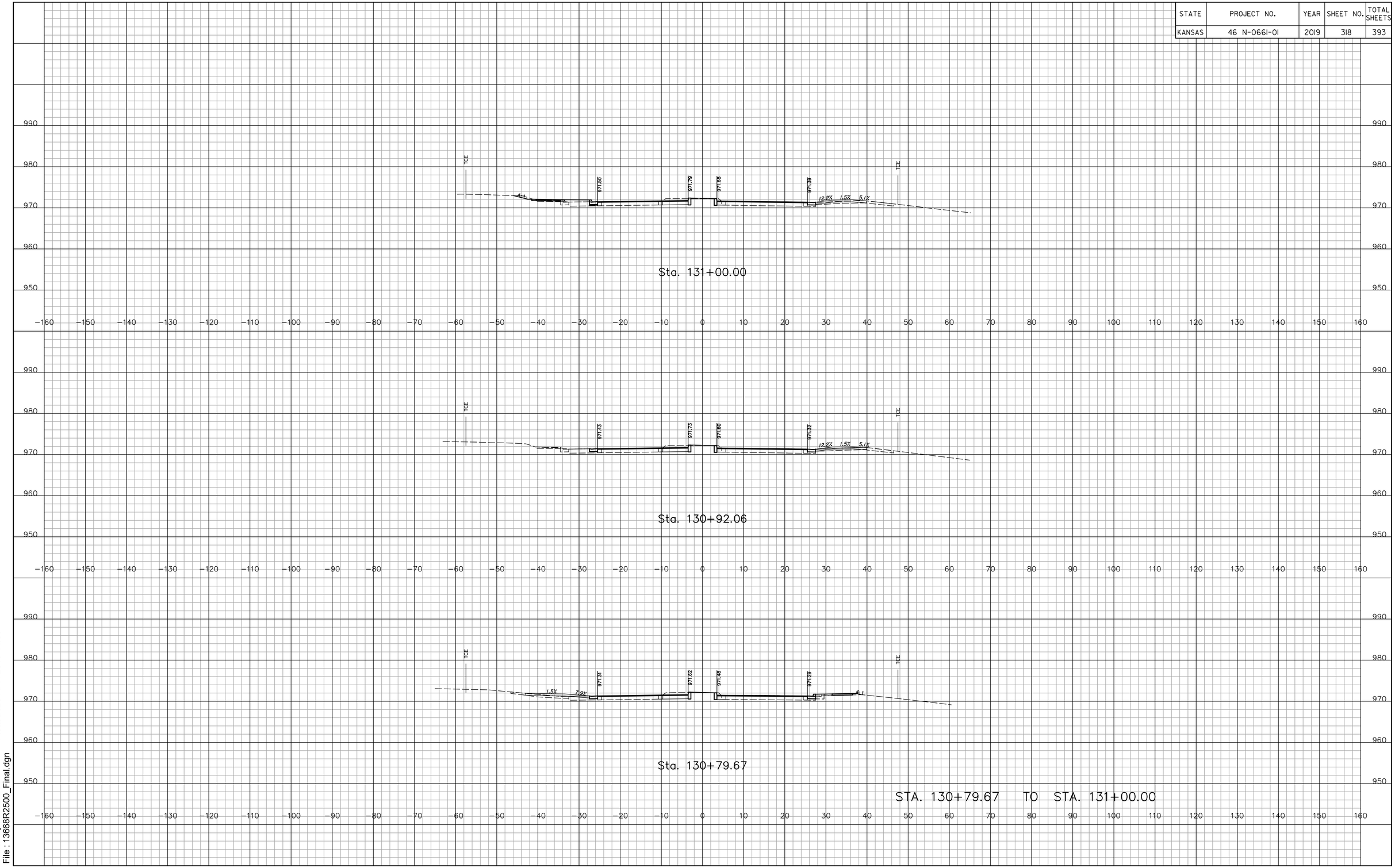



Sta. 130+25.00

STA. 130+25.00 TO STA. 130+75.00

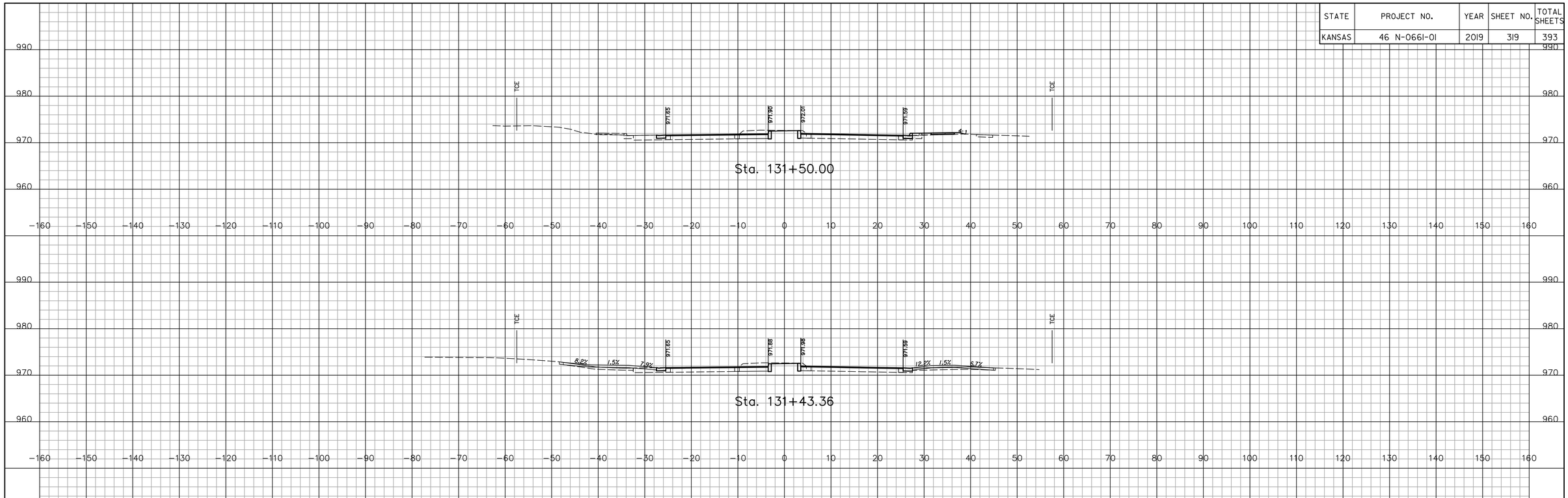
Plotted : 25-APR-2019 14:38
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 318 | 393 |



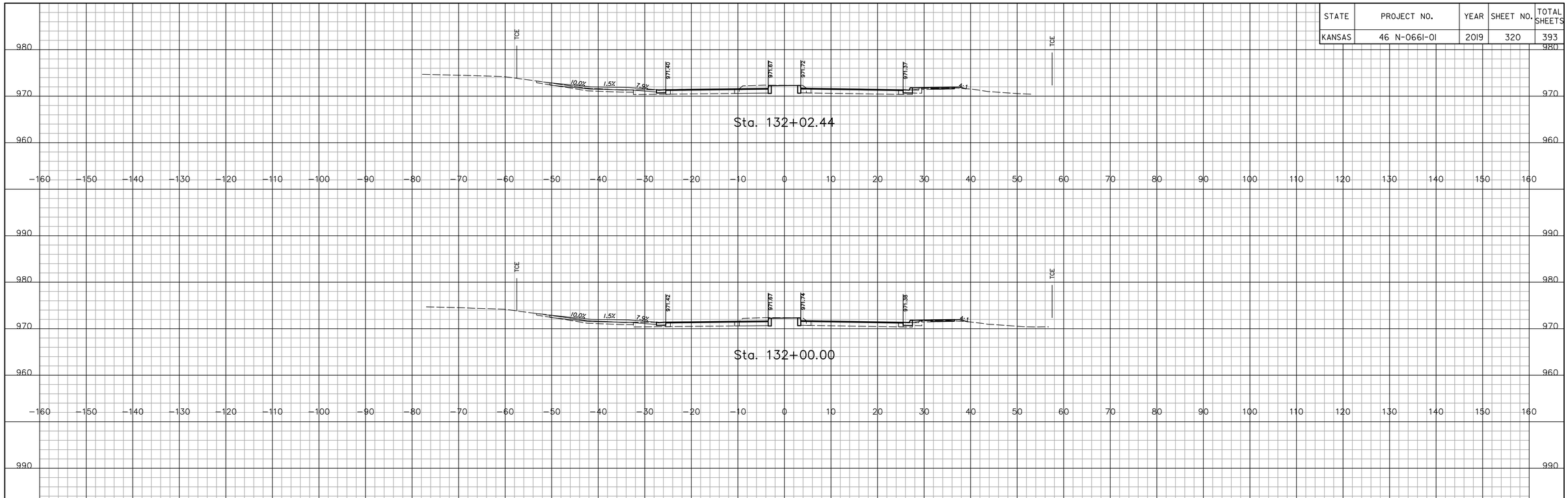

Plotted : 25-APR-2019 14:38
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 319 | 393 |



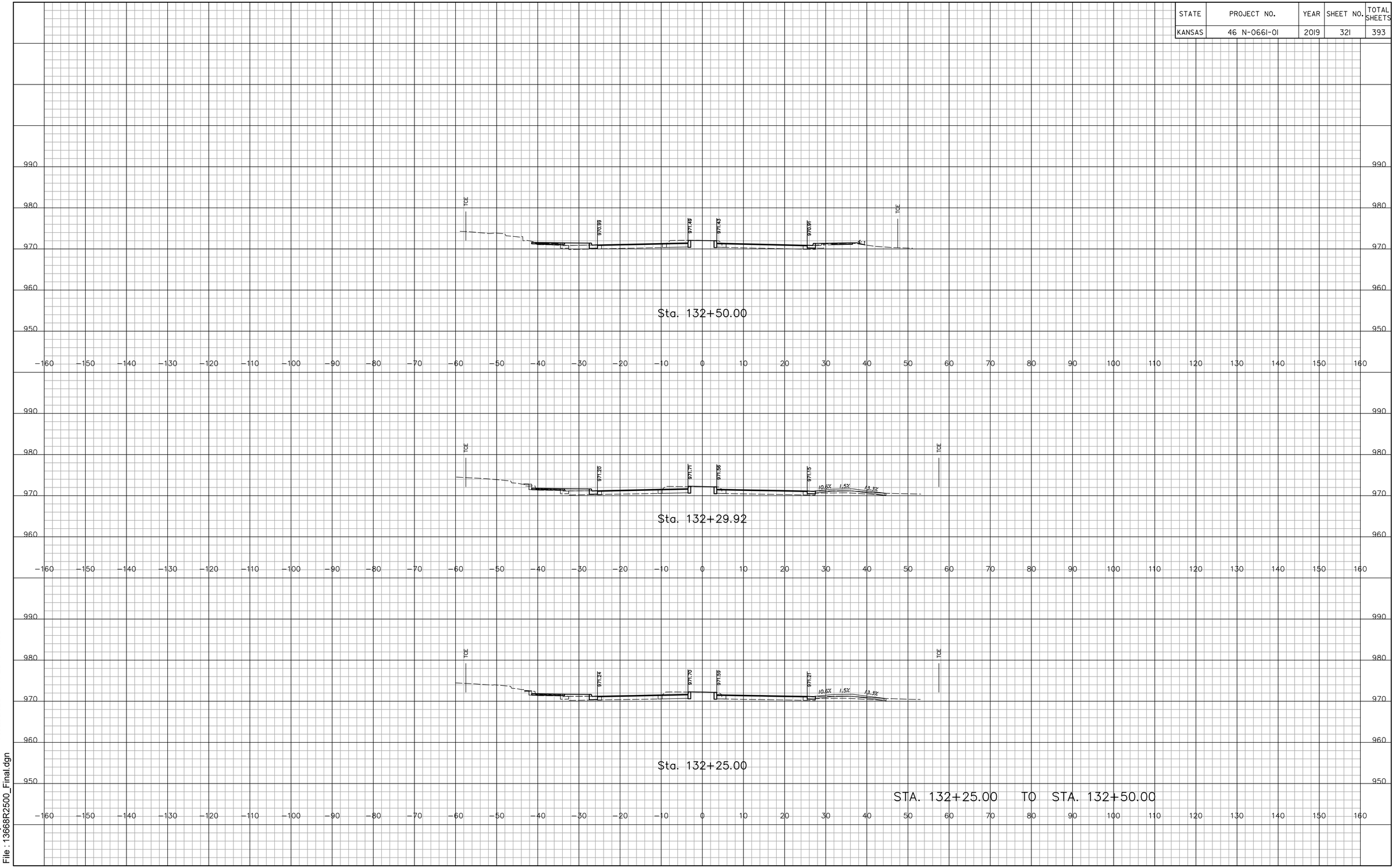

Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 320 | 393 |



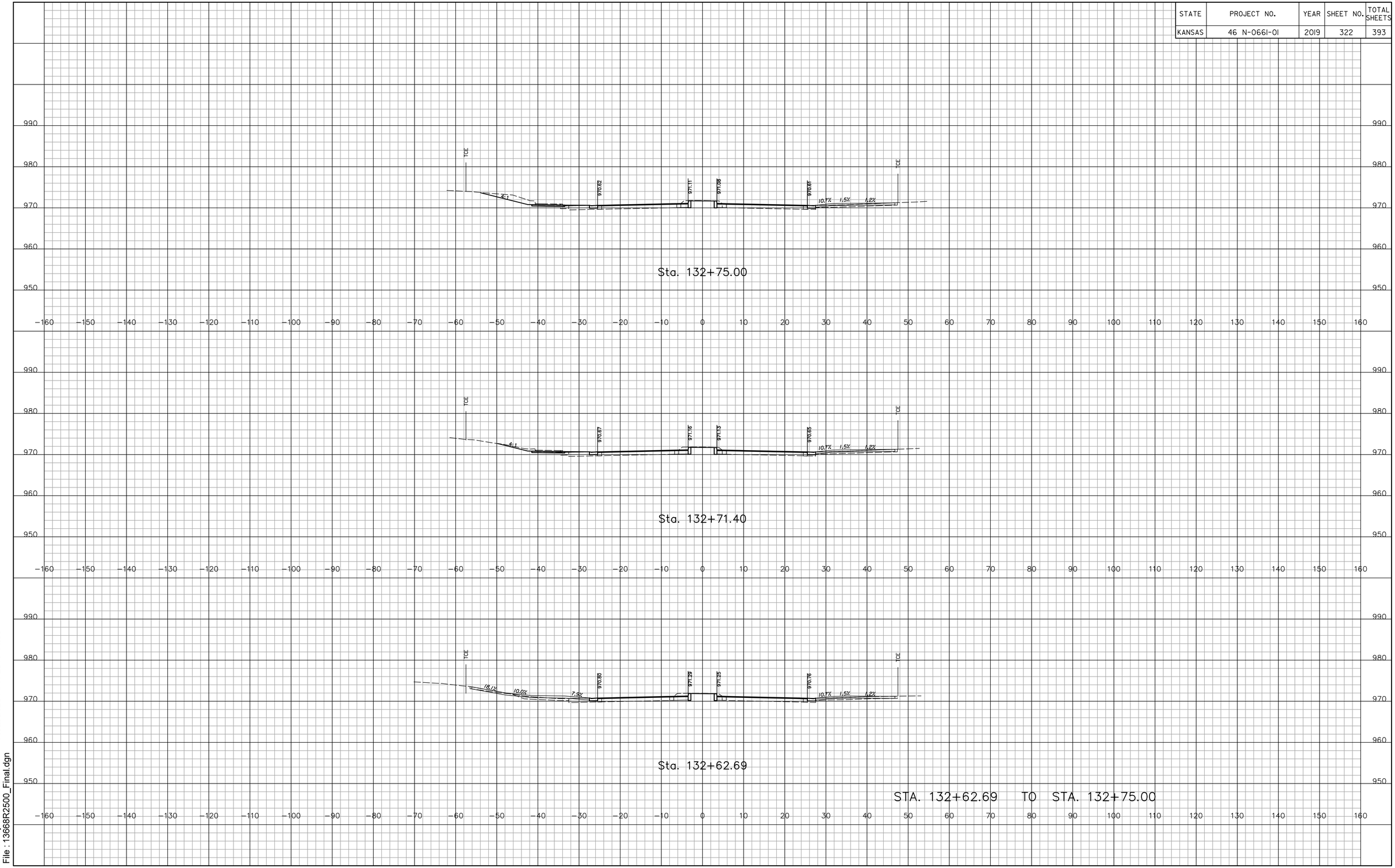

Plotted : 25-APR-2019 14:38
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 321 | 393 |



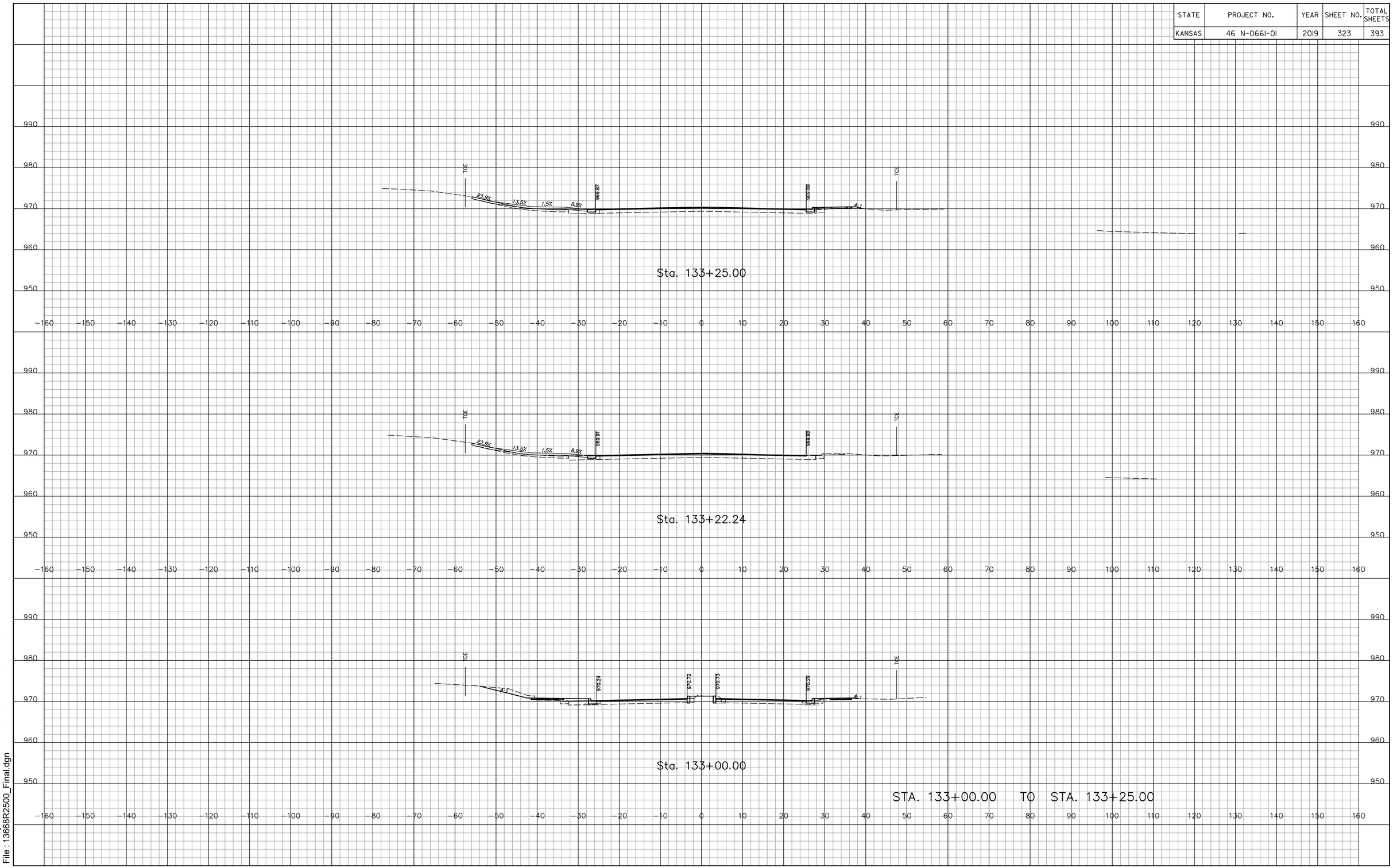

Plotted : 25-APR-2019 14:38
Drawn By: . Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 322 | 393 |




Plotted : 25-APR-2019 14:38
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 323 | 393 |

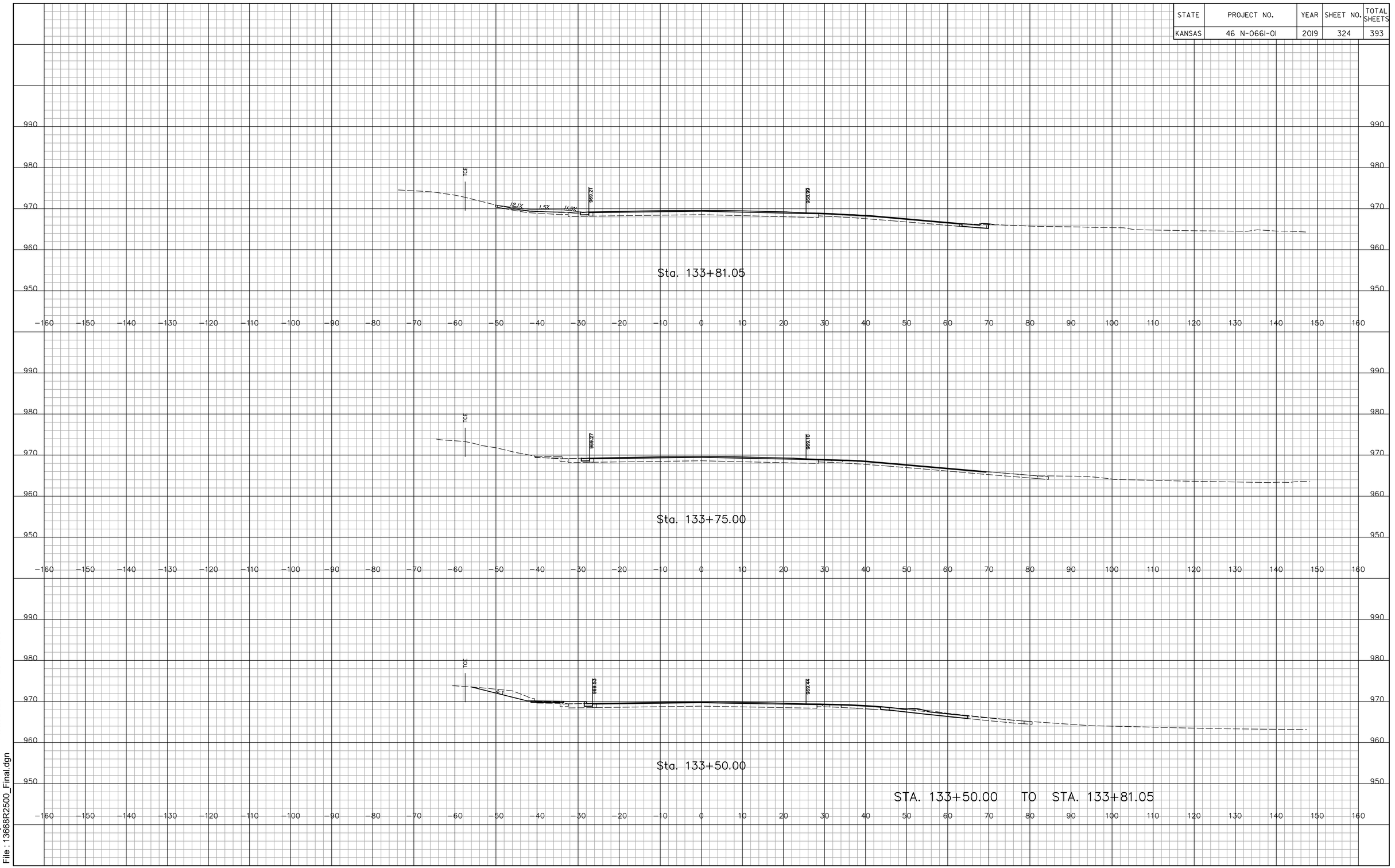



STA. 133+00.00 TO STA. 133+25.00

Plotted : 25-APR-2019 14:38

Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 324 | 393 |




STA. 133+50.00 TO STA. 133+81.05

Plotted : 25-APR-2019 14:38

Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

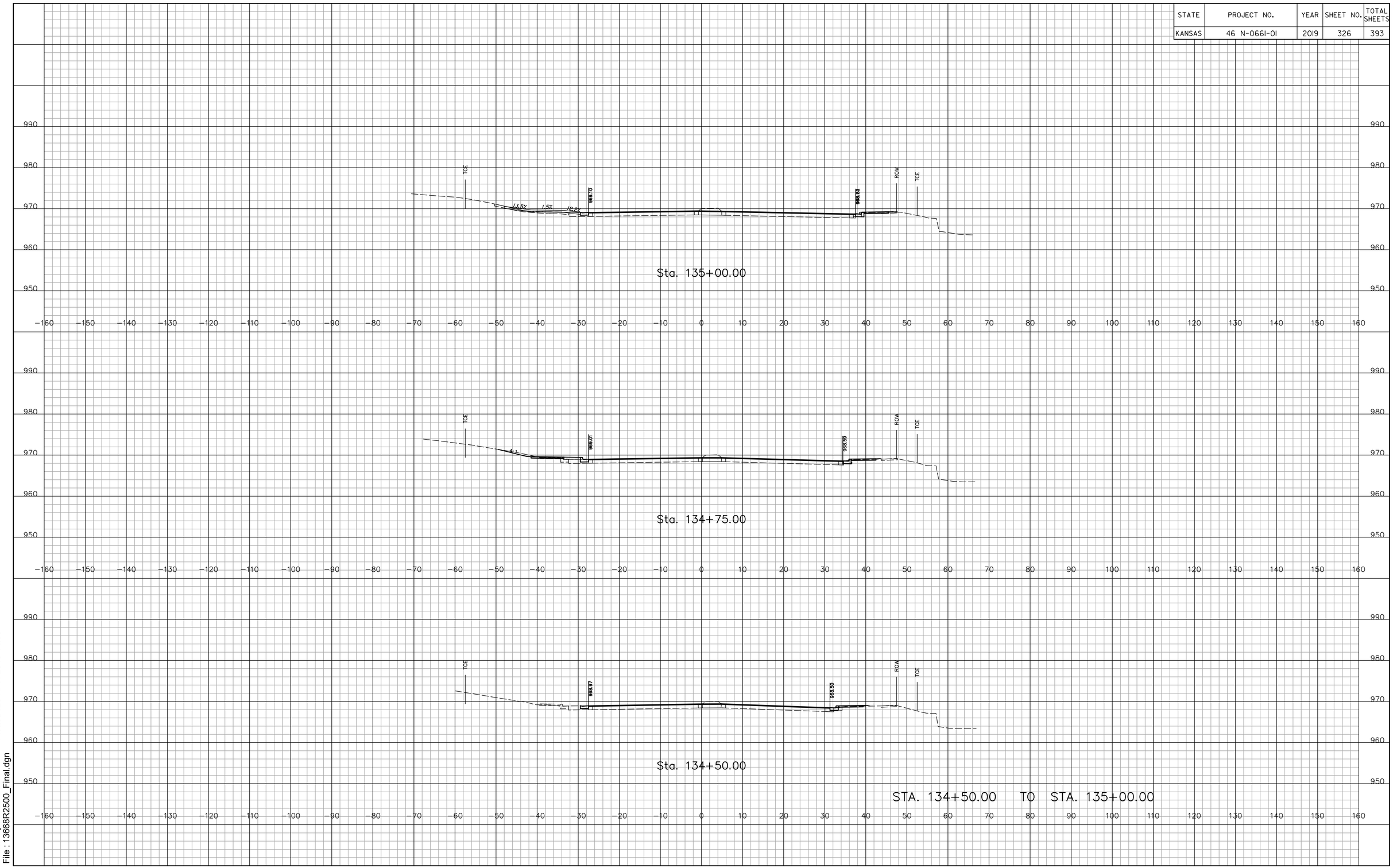
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 325 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 326 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

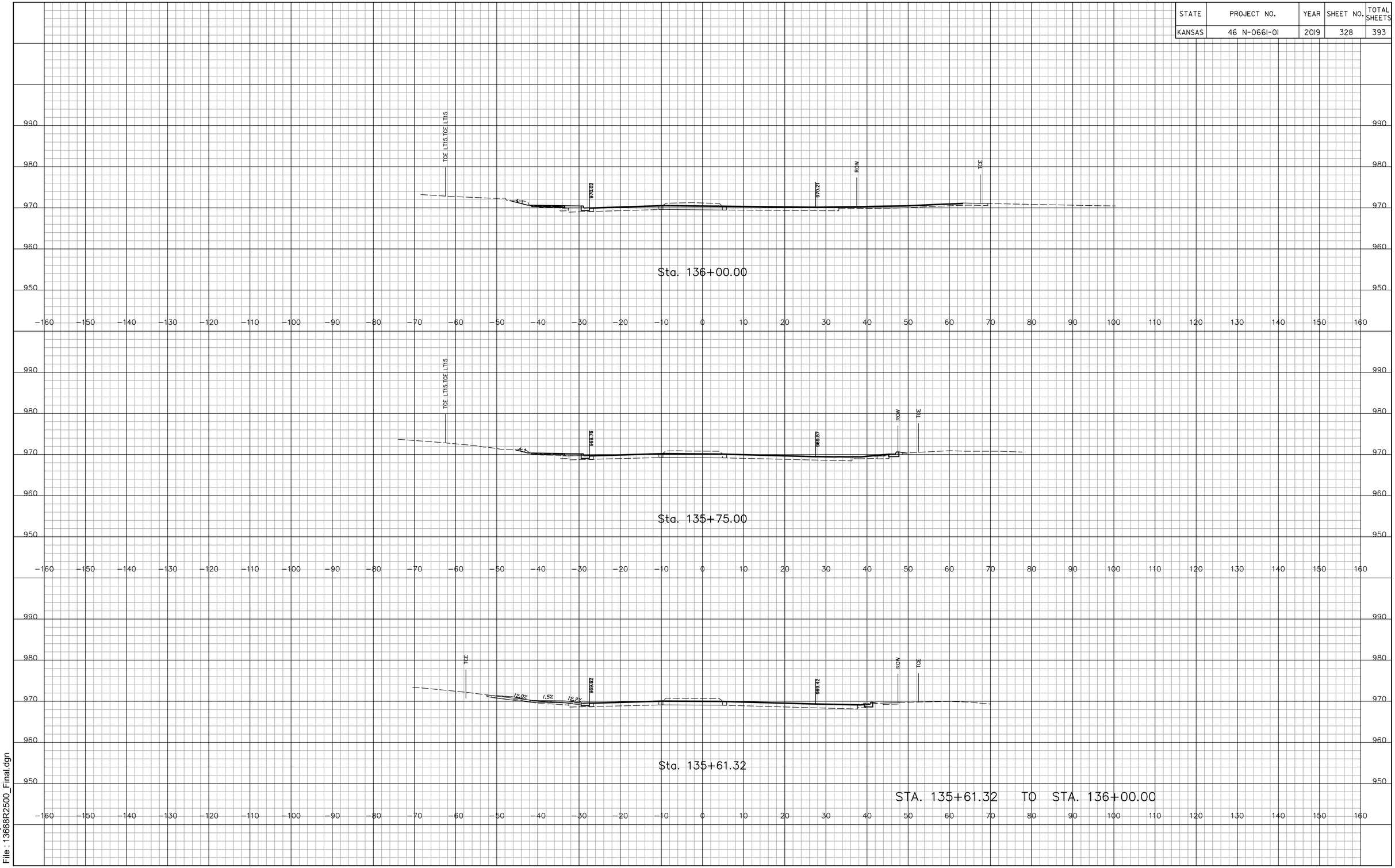
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 327 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 328 | 393 |

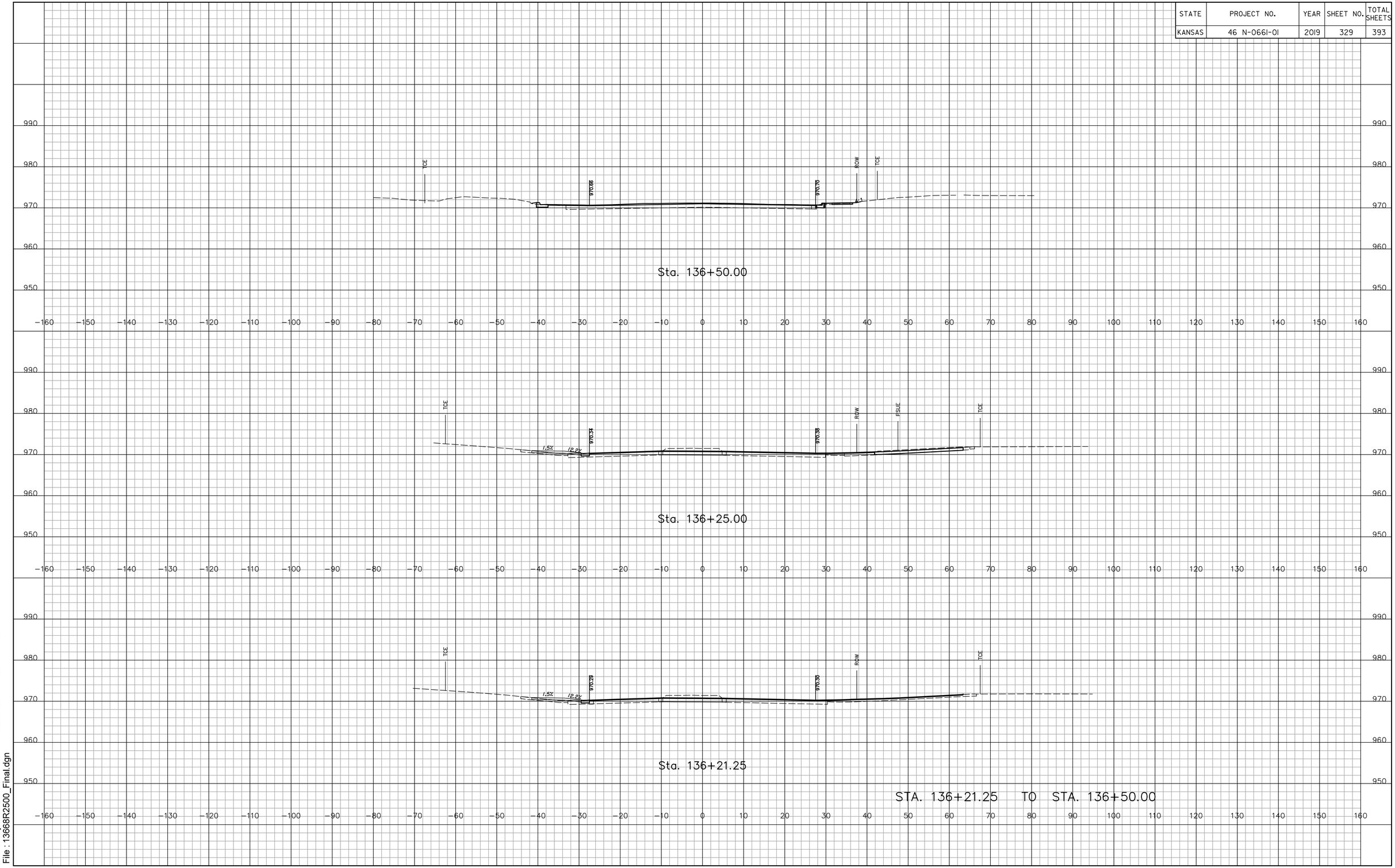



Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 329 | 393 |




Plotted : 25-APR-2019 14:38

Drawn By : lrosenbaum

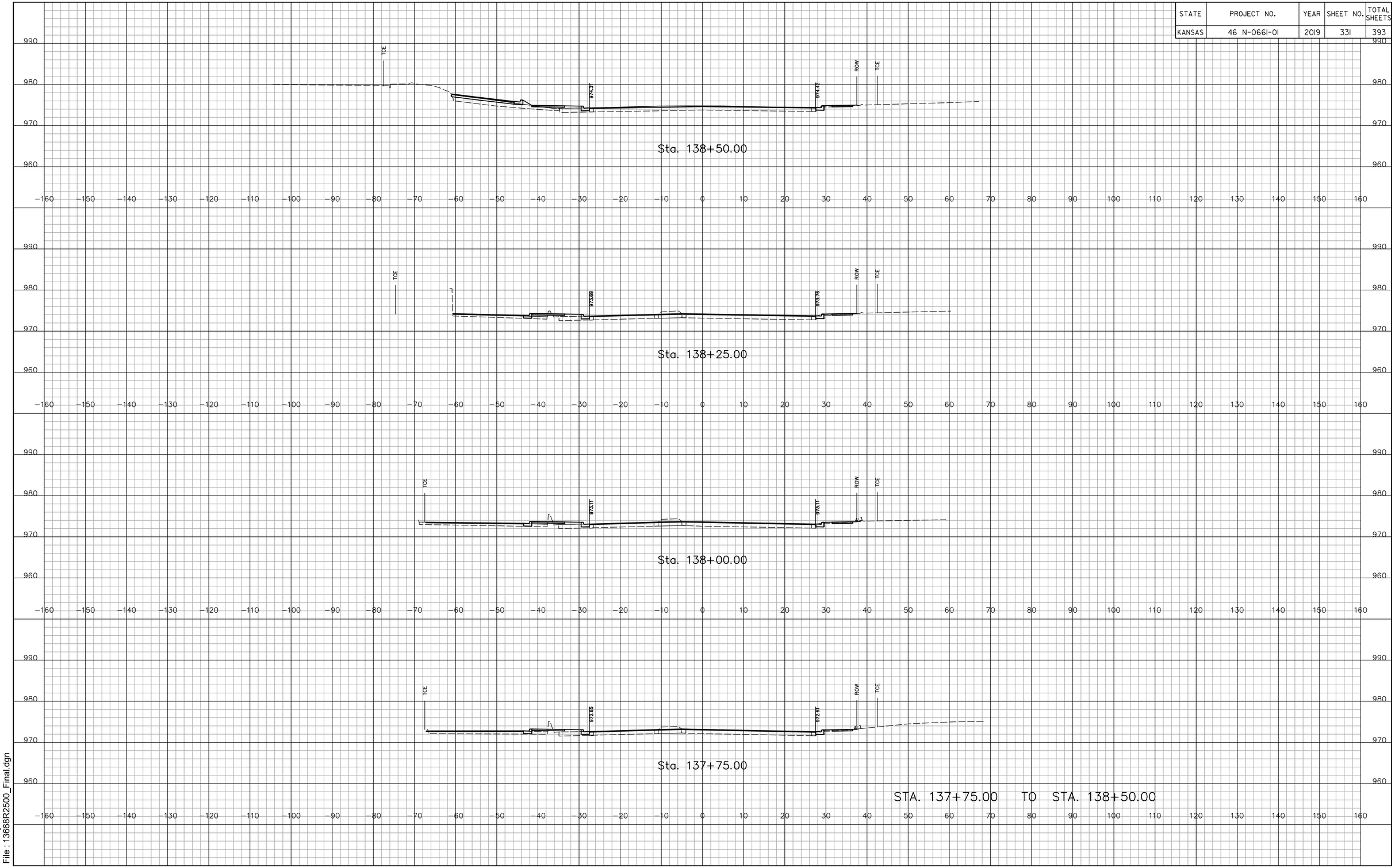
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 330 | 393 |




Plotted : 25-APR-2019 14:39
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 331 | 393 |




Plotted : 25-APR-2019 14:39

Drawn By: : Irosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 332 | 393 |




Plotted :25-APR-2019 14:39
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 333 | 393 |




Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 334 | 393 |



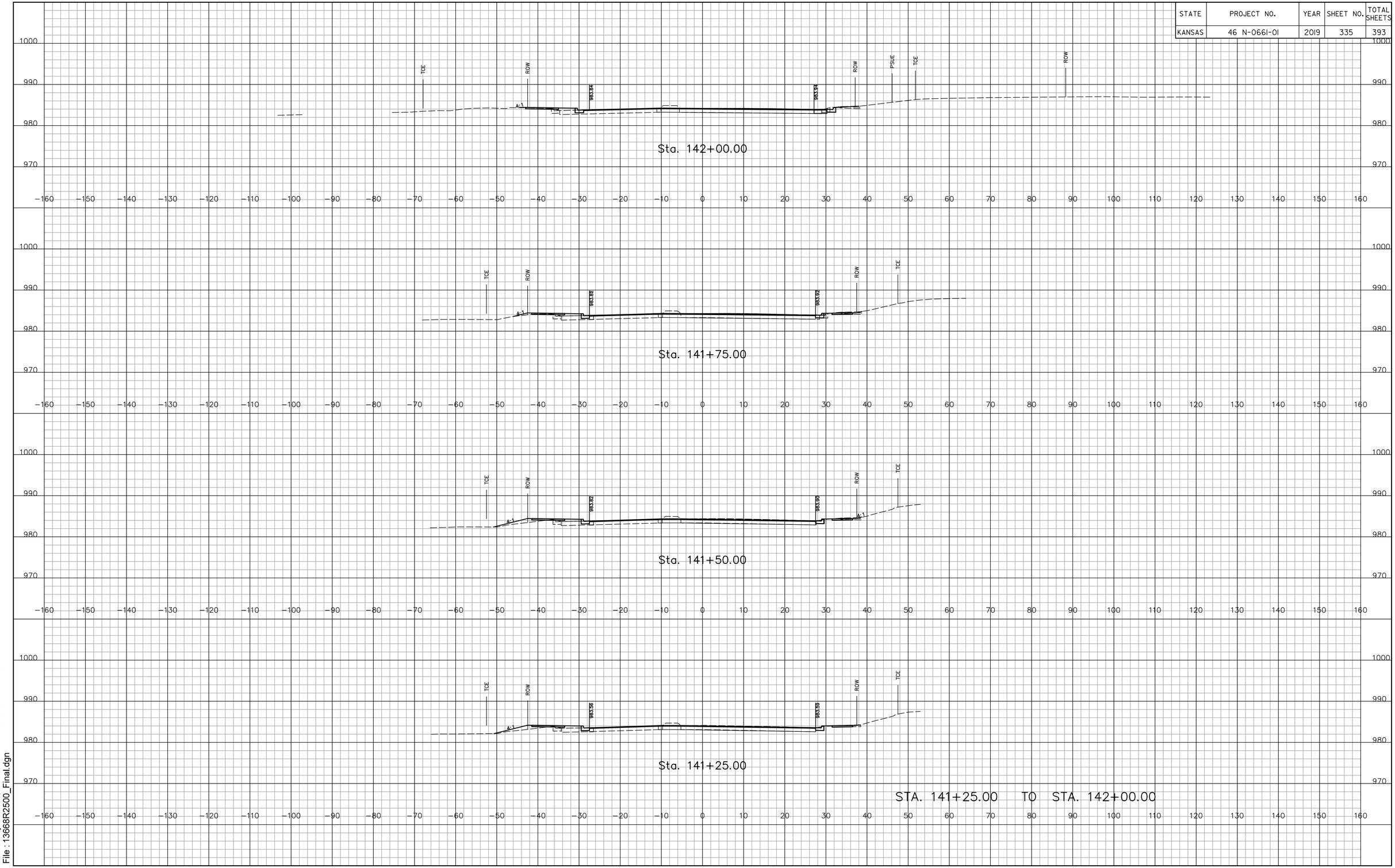

STA. 140+25.00 TO STA. 141+00.00

Plotted : 25-APR-2019 14:39

Drawn By: : Irosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 335 | 393 |




Sta. 142+00.00




Sta. 141+75.00




Sta. 141+50.00

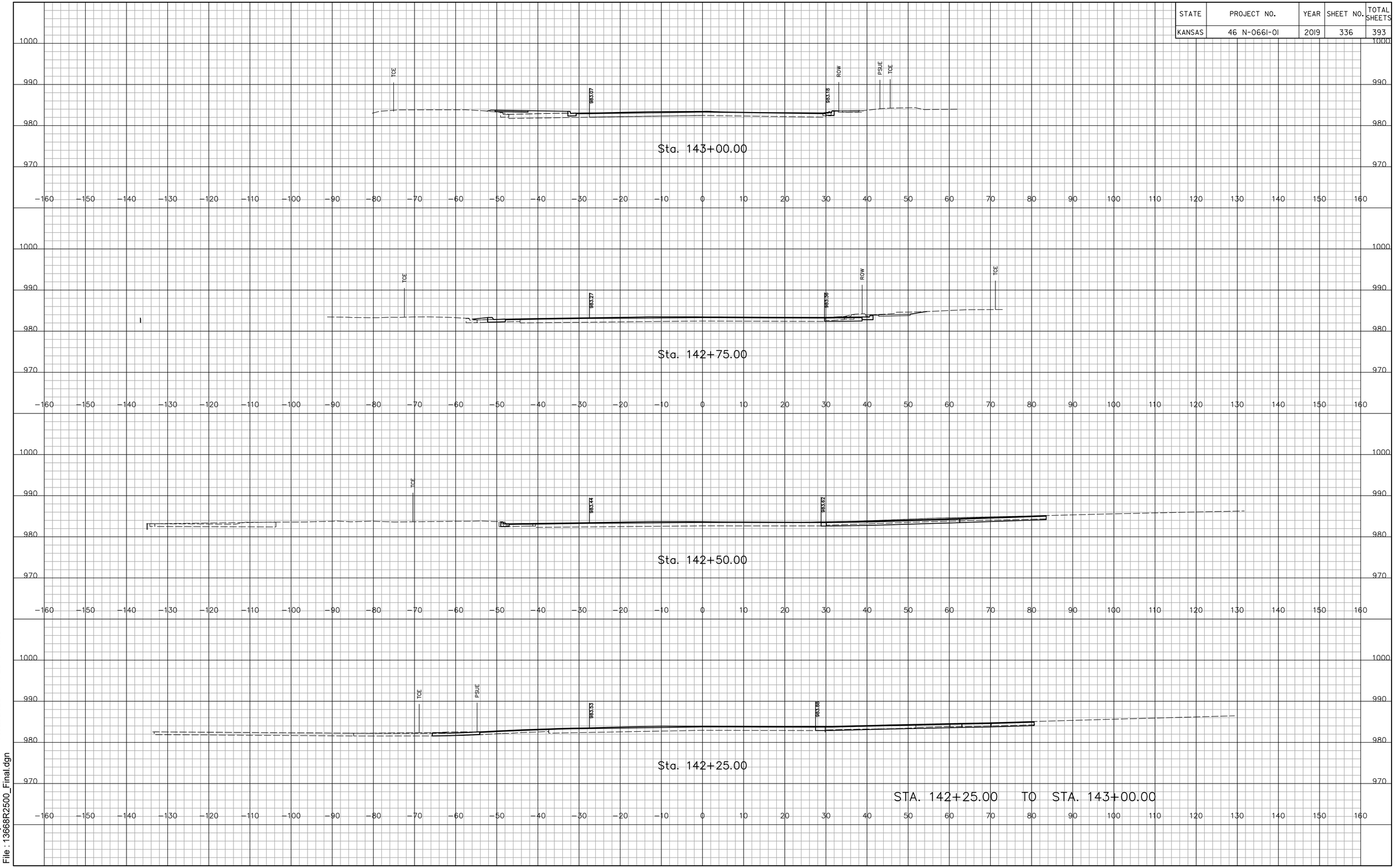



Sta. 141+25.00

STA. 141+25.00 TO STA. 142+00.00

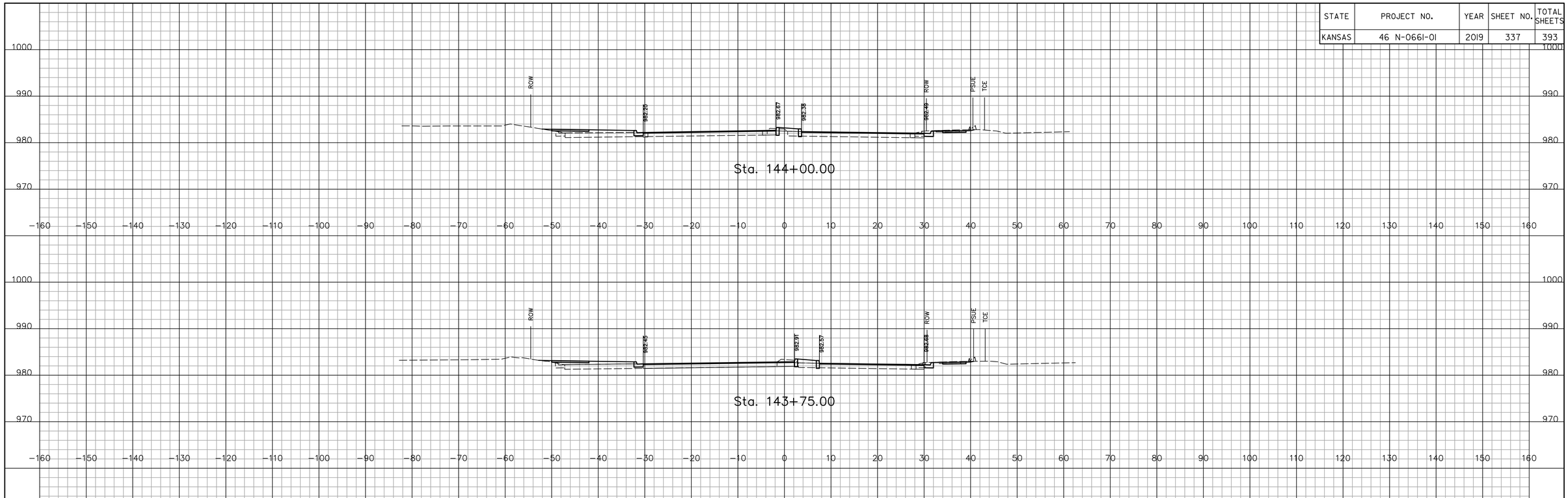
Plotted : 25-APR-2019 14:39
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 336 | 393 |




Plotted :25-APR-2019 14:39
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

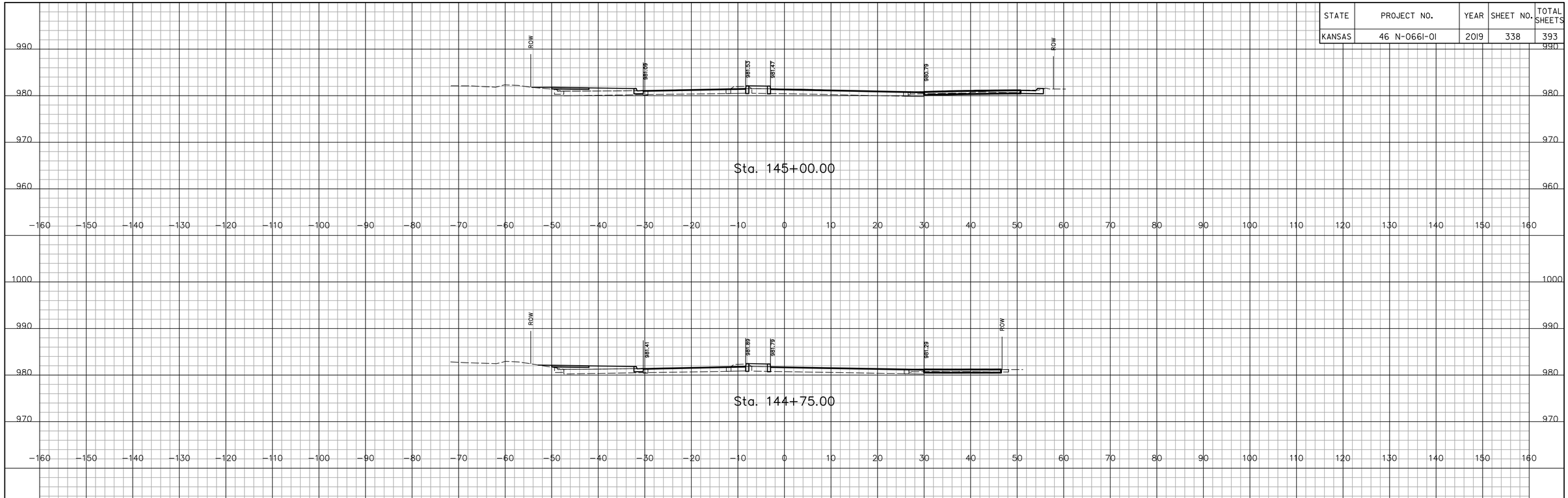
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 337 | 393 |




Plotted : 25-APR-2019 14:39
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

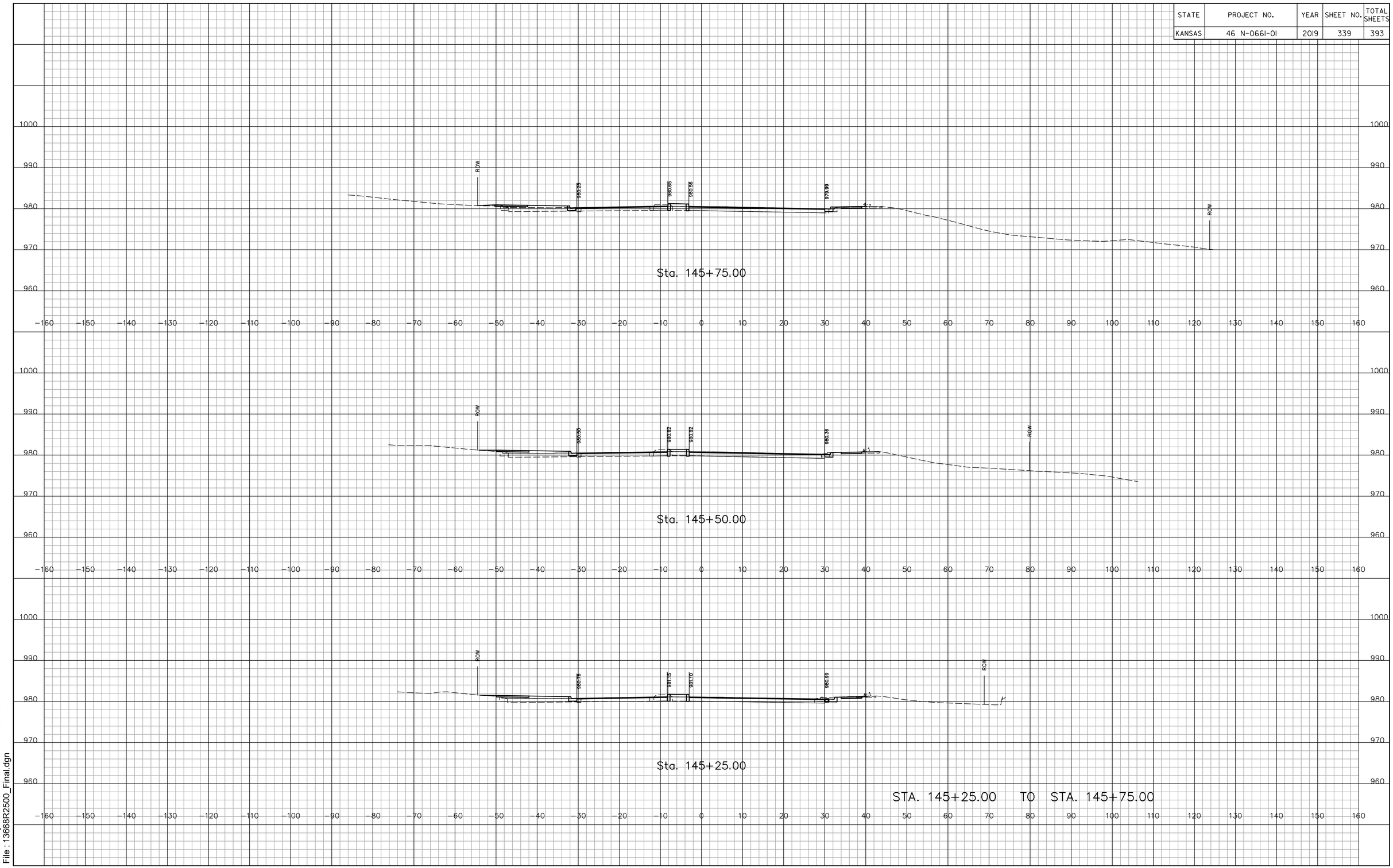
0:1 1:1

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 338 | 393 |



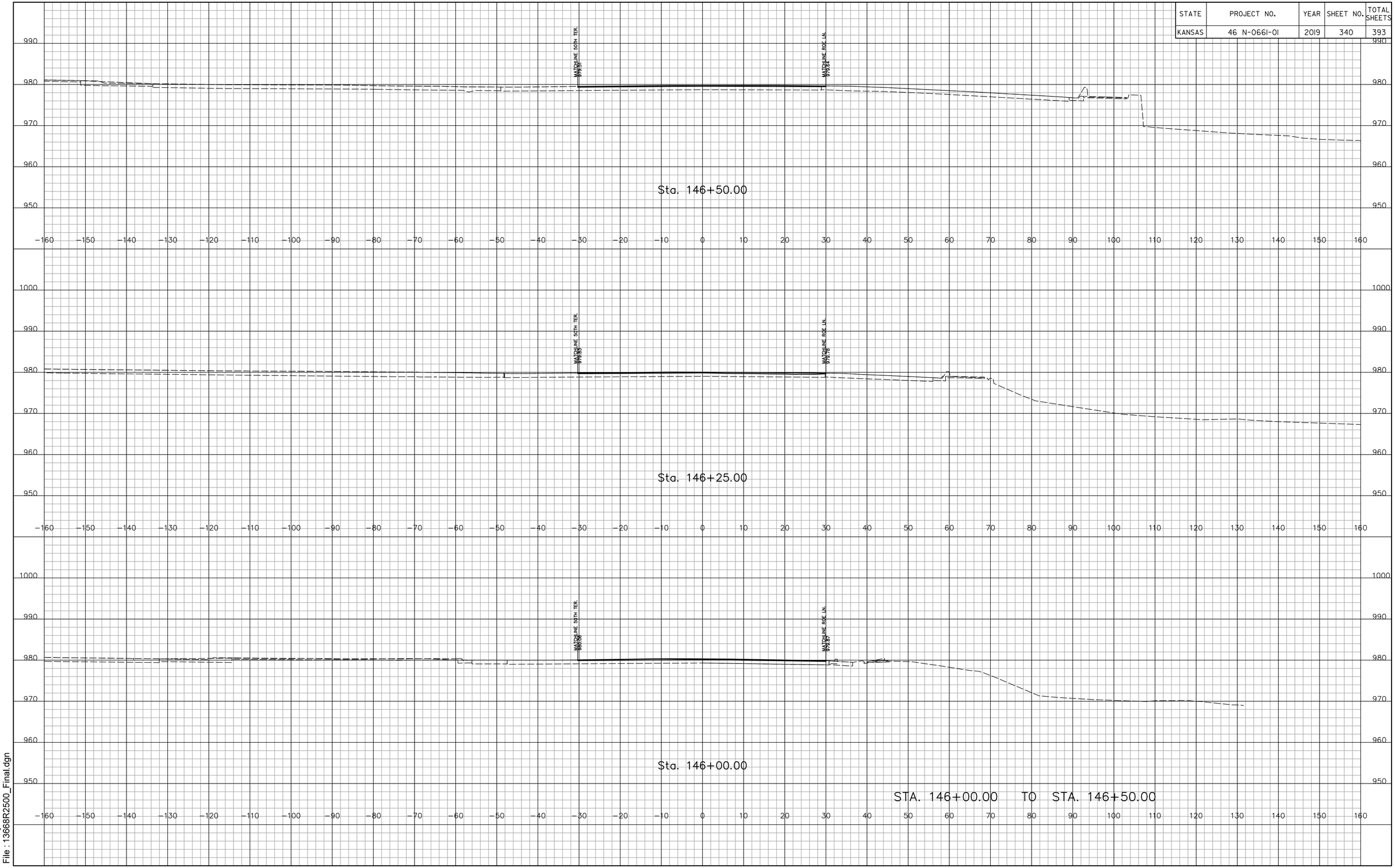

Plotted :25-APR-2019 14:39
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 339 | 393 |



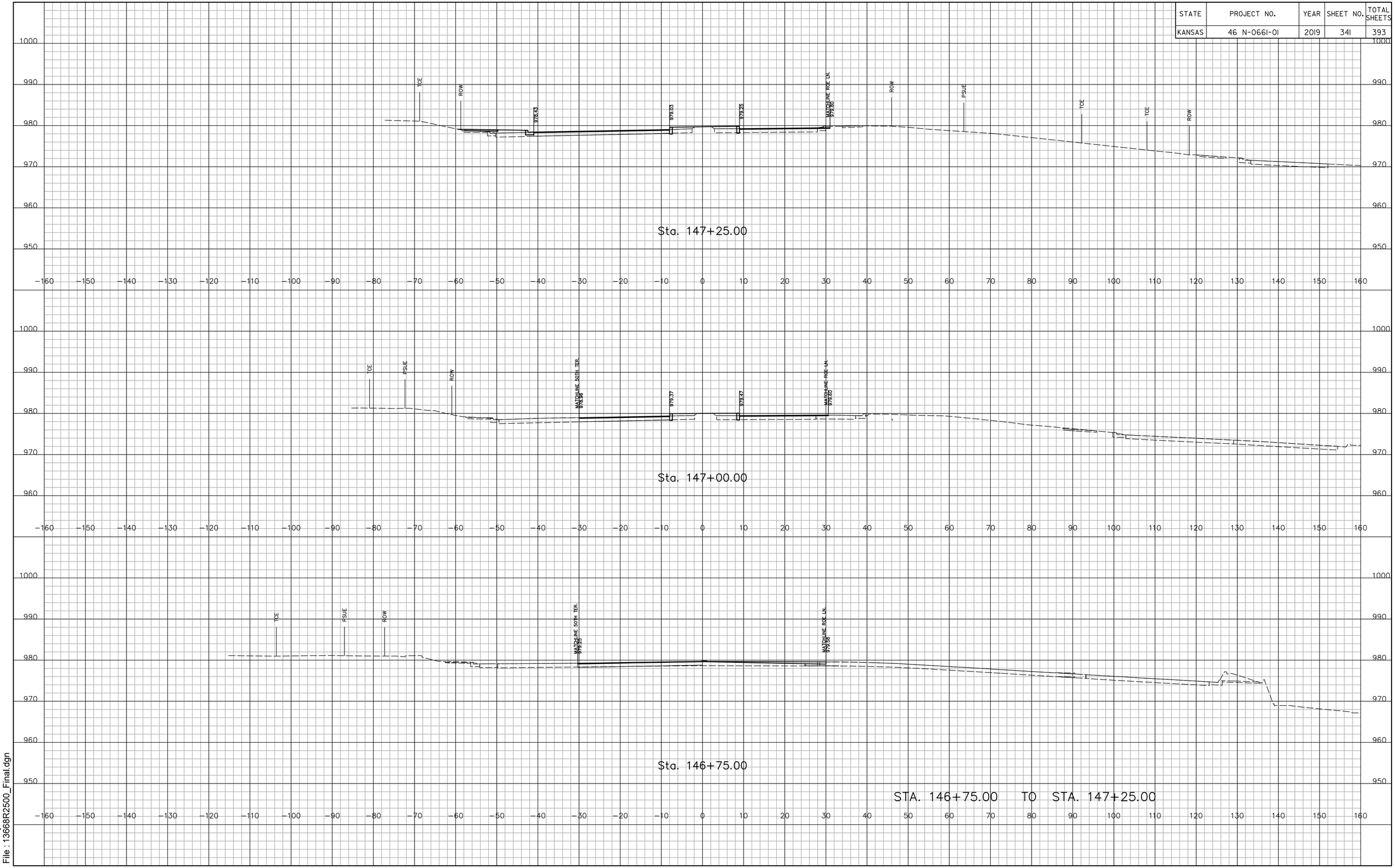

Plotted : 25-APR-2019 14:39
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 340 | 393 |




Plotted :25-APR-2019 14:39
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

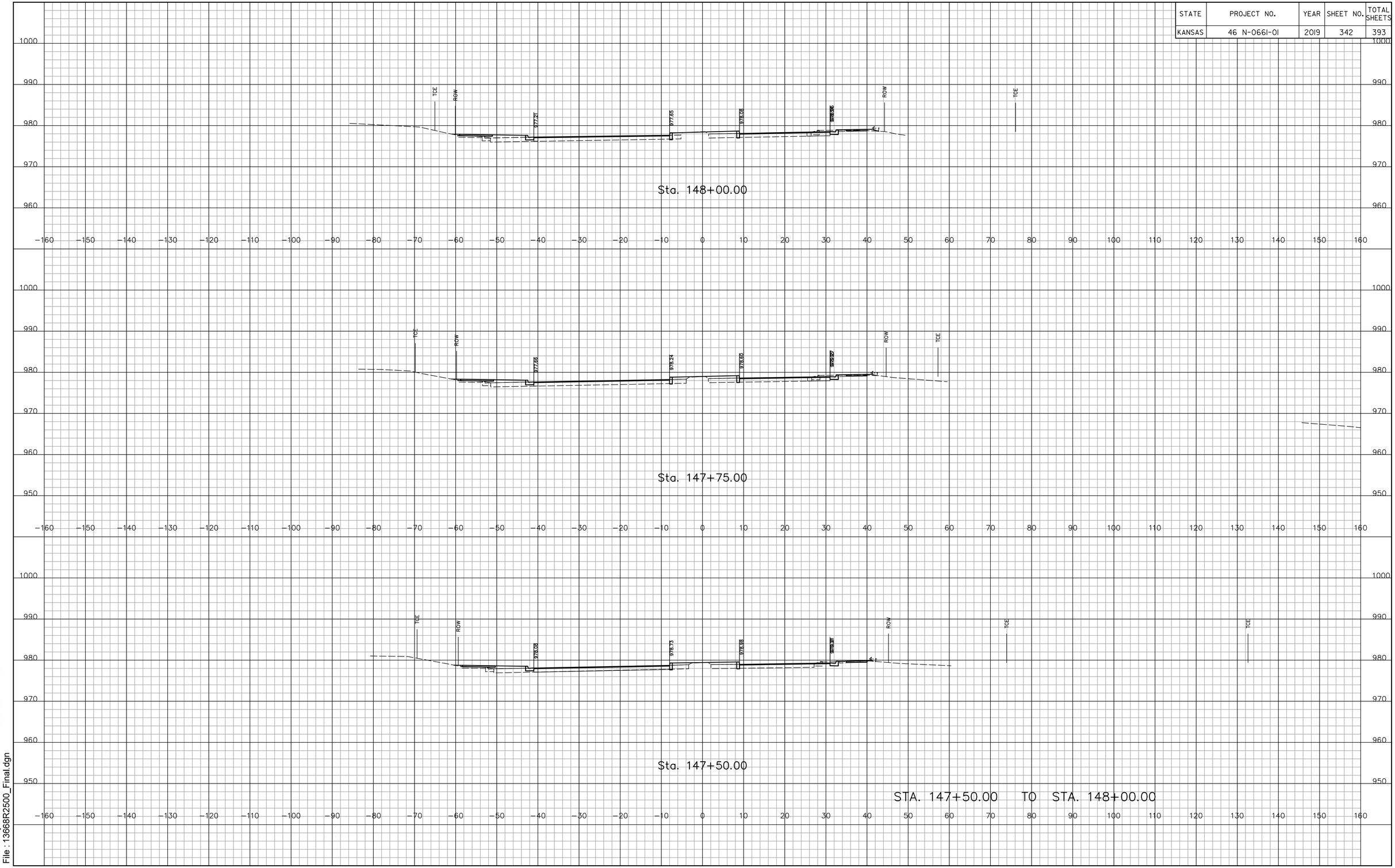
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 341 | 393 |




Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

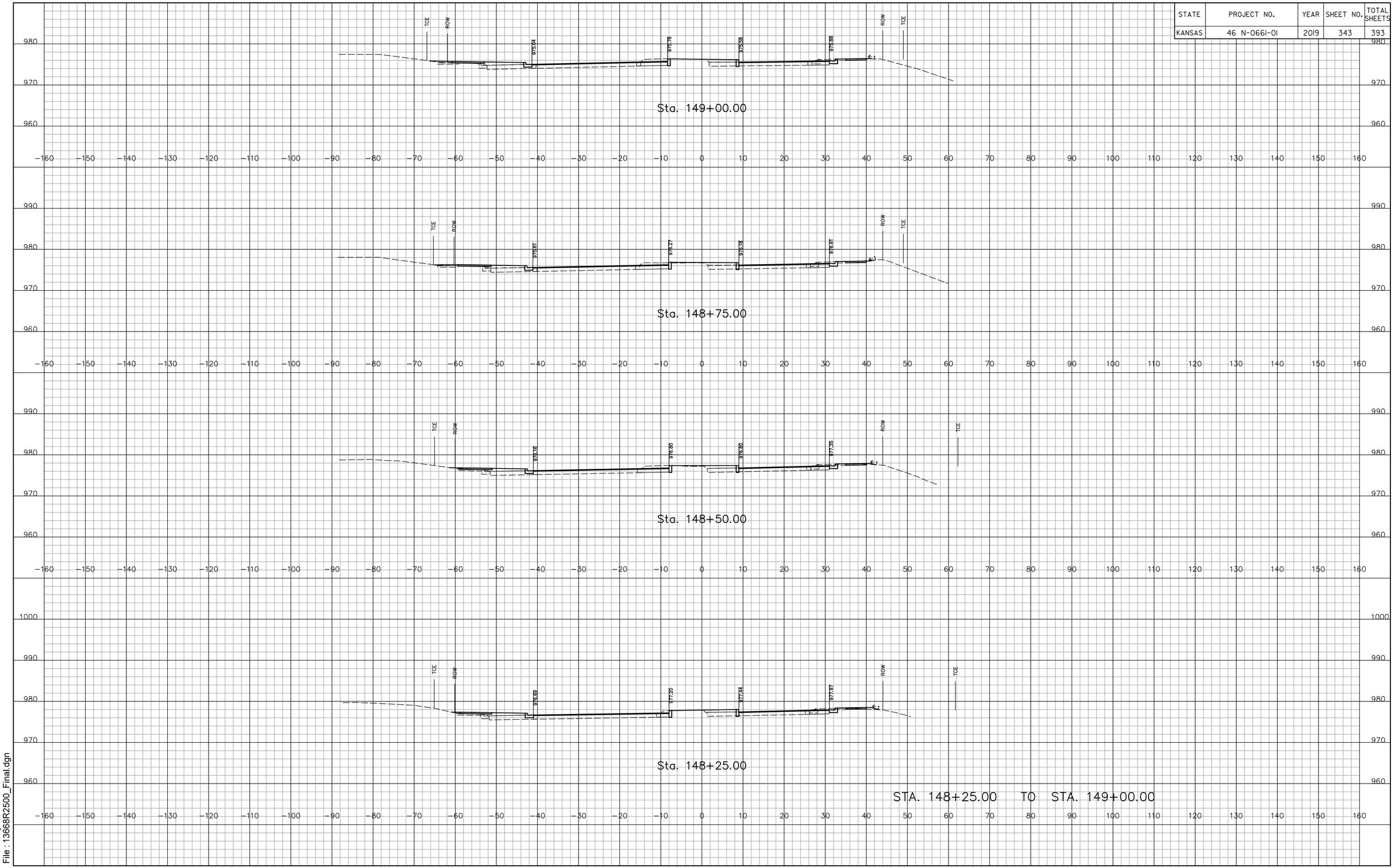
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 342 | 393 |




Plotted : 25-APR-2019 14:39

Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

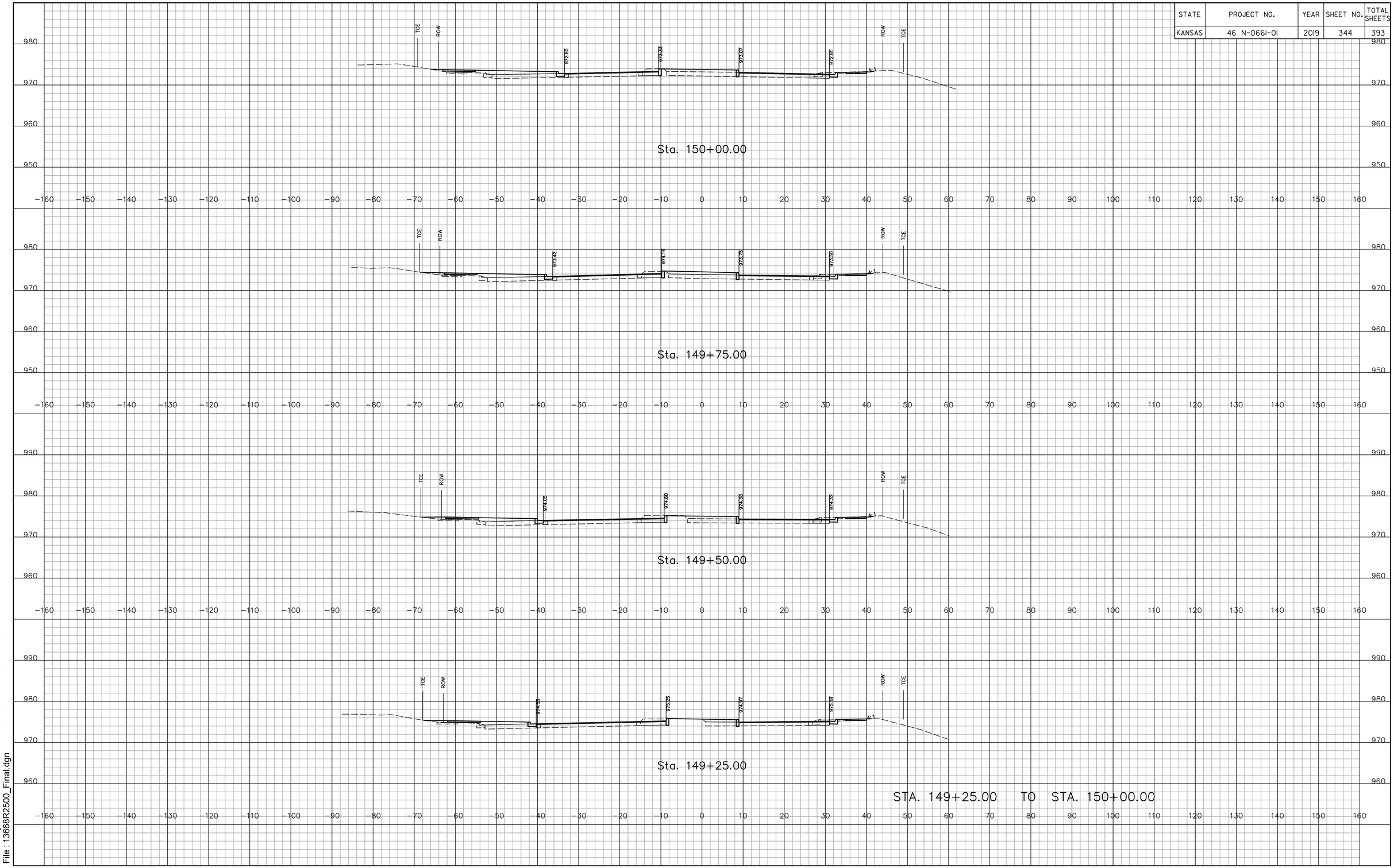
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 343 | 393 |




Plotted : 25-APR-2019 14:39

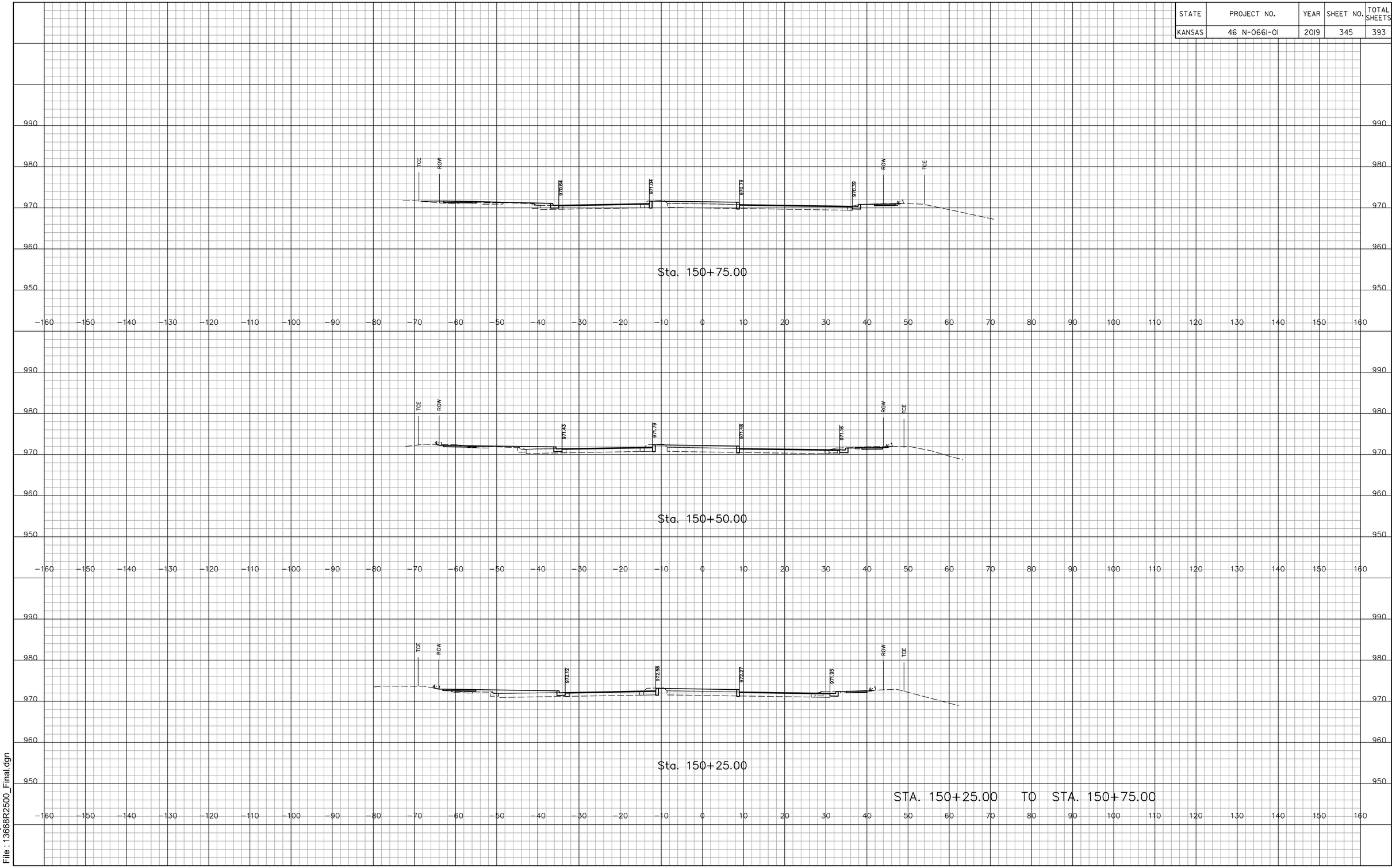
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 344 | 393 |




Plotted : 25-APR-2019 14:39
Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 345 | 393 |




Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 346 | 393 |

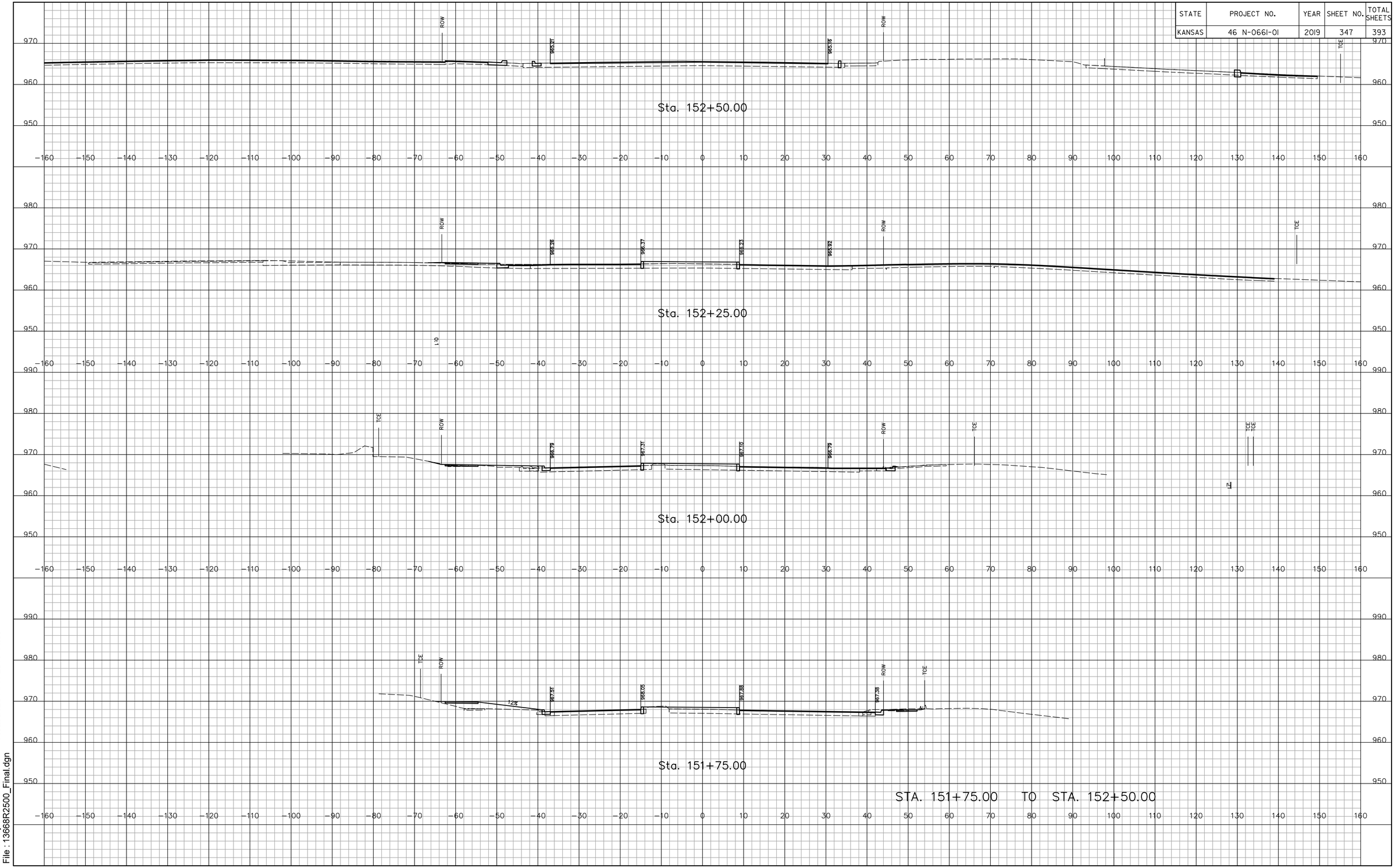



STA. 151+00.00 TO STA. 151+50.00

Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

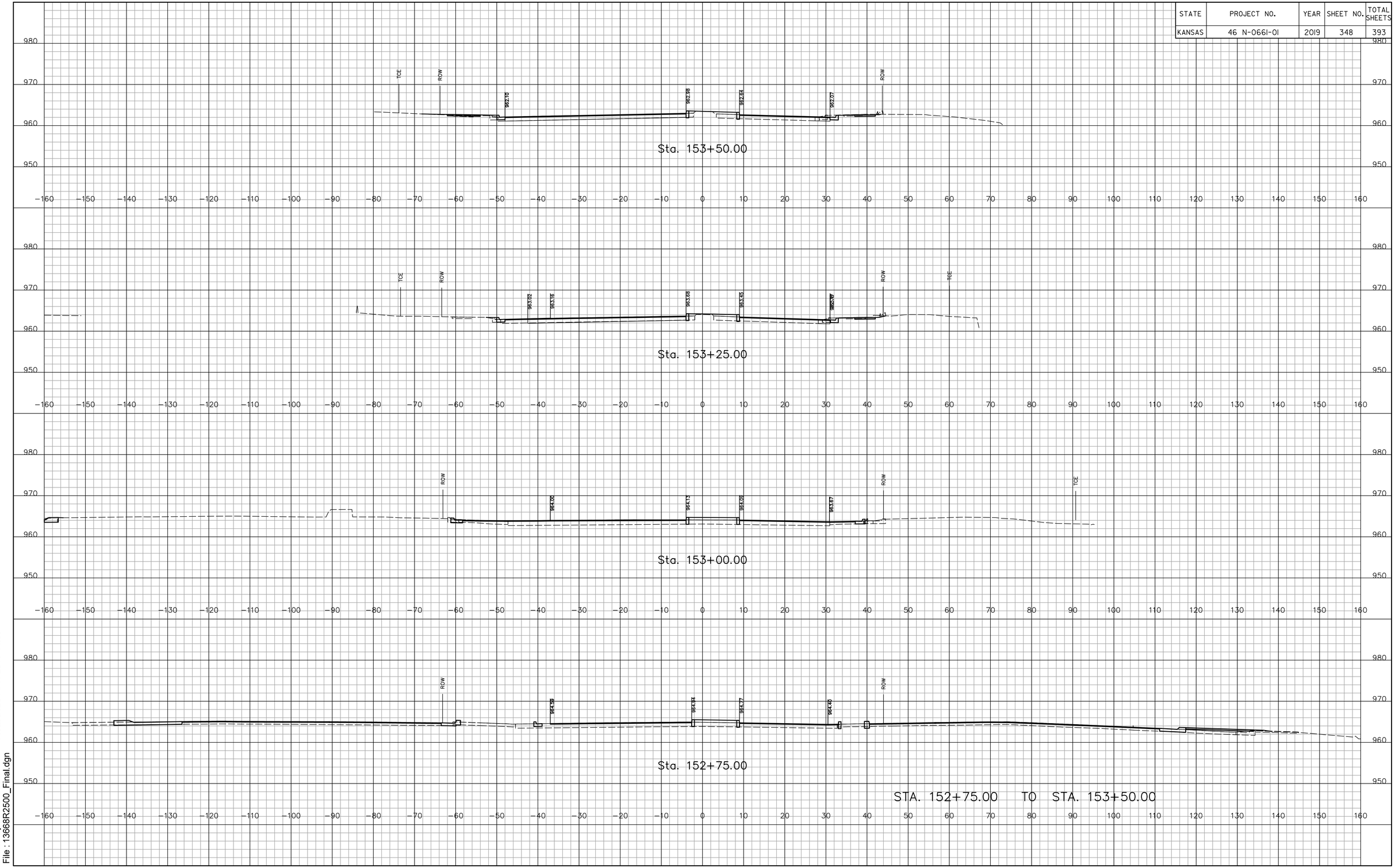
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 347 | 393 |




Plotted : 25-APR-2019 14:39

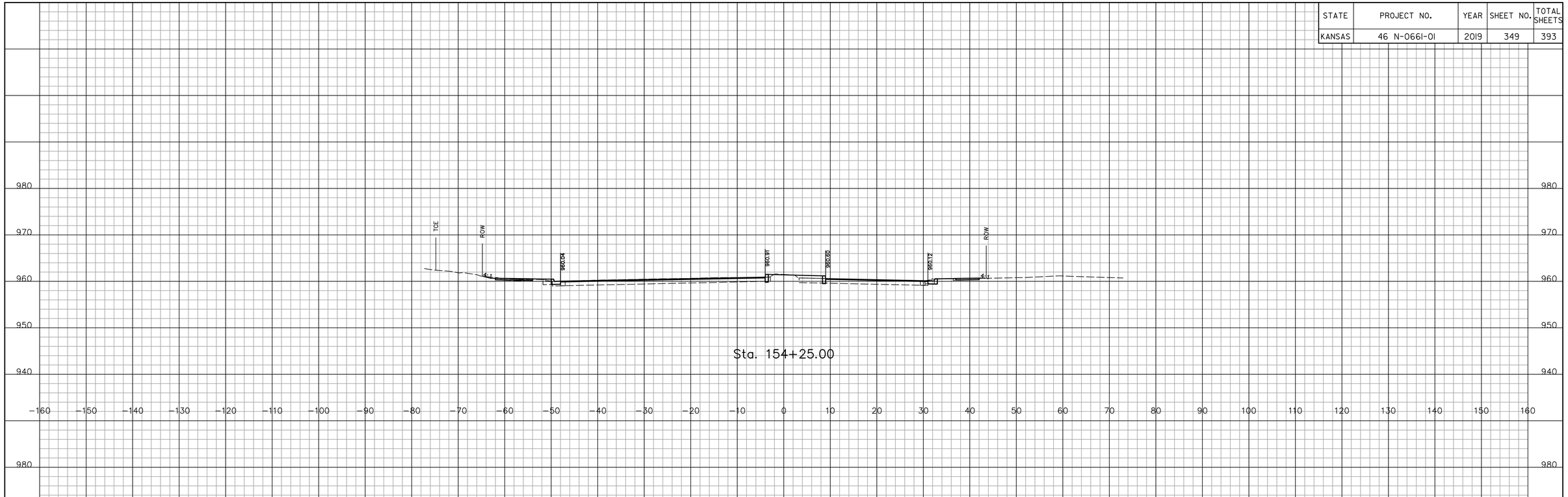
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 348 | 393 |




Plotted :25-APR-2019 14:39
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 349 | 393 |

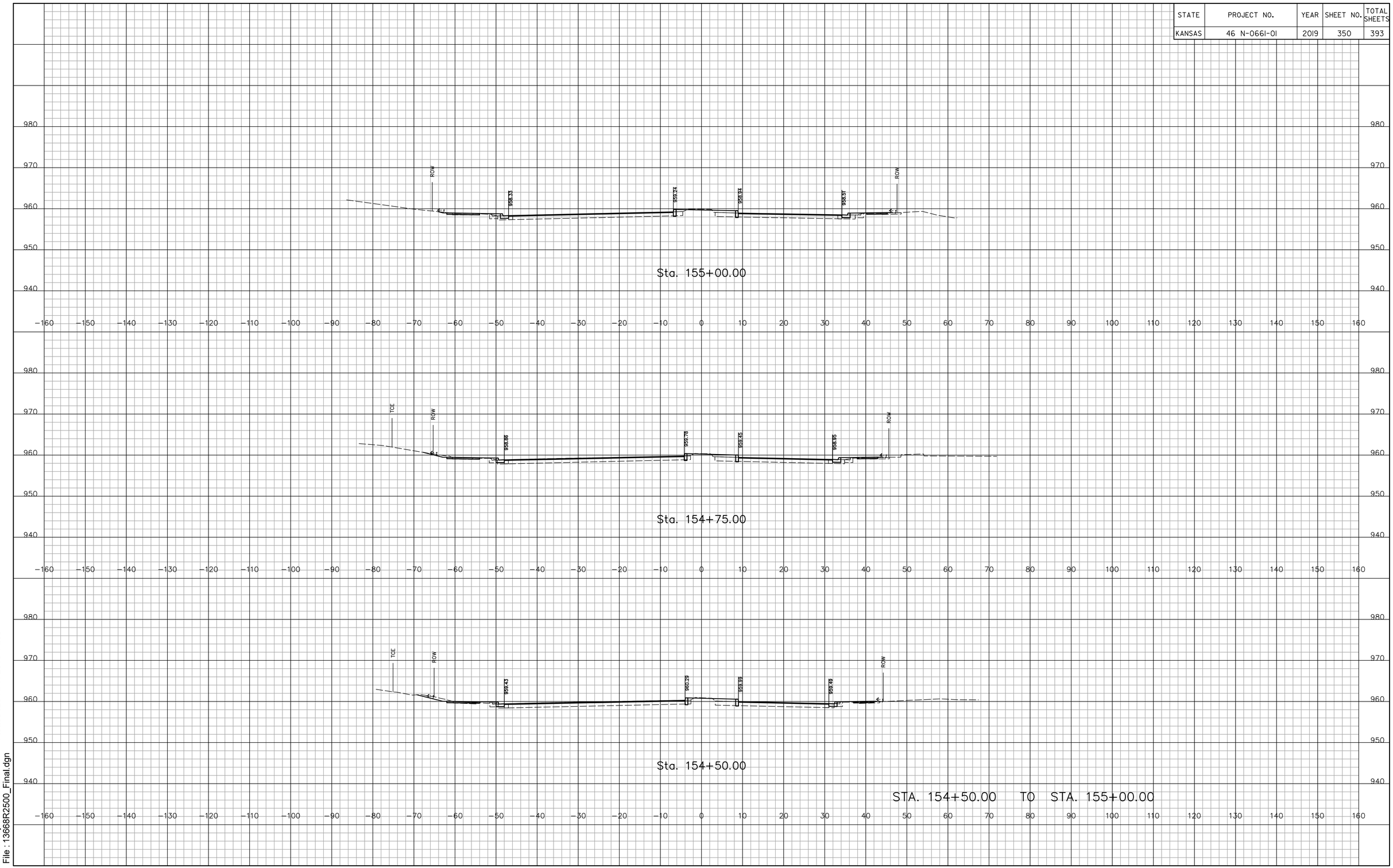



Plotted : 25-APR-2019 14:39

Drawn By: : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 350 | 393 |



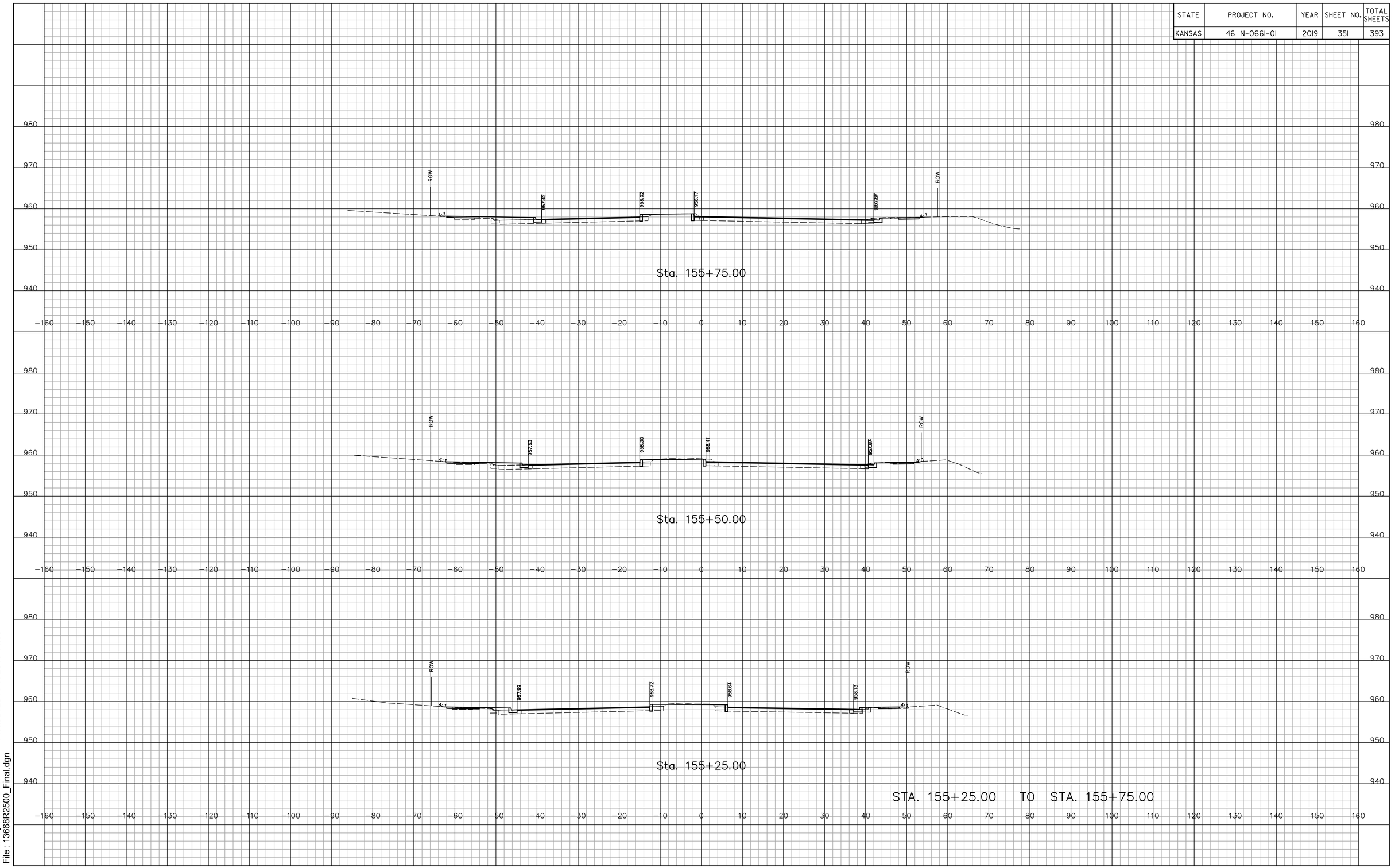

STA. 154+50.00 TO STA. 155+00.00

Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 351 | 393 |

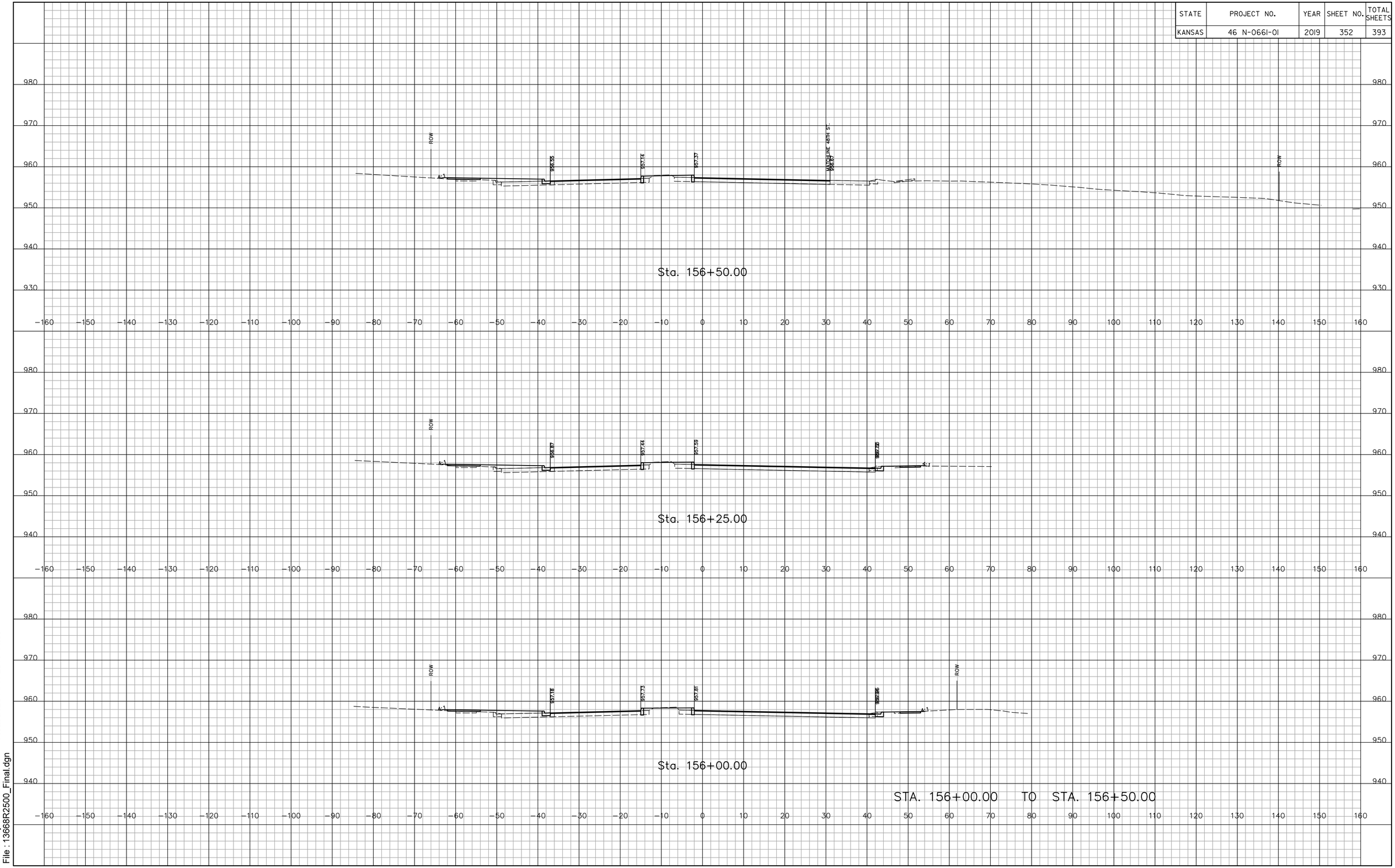



STA. 155+25.00 TO STA. 155+75.00

Plotted : 25-APR-2019 14:39

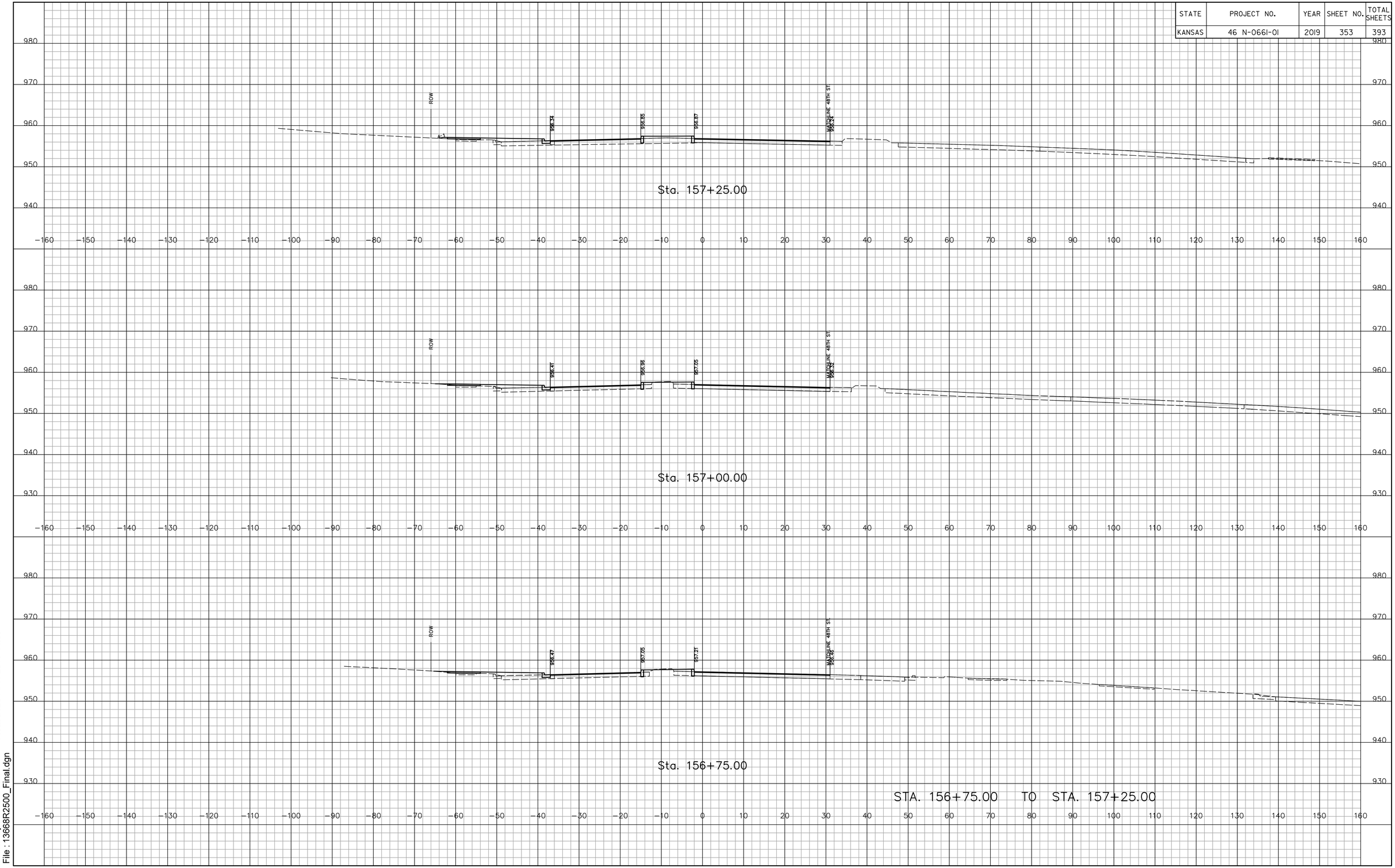
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 352 | 393 |



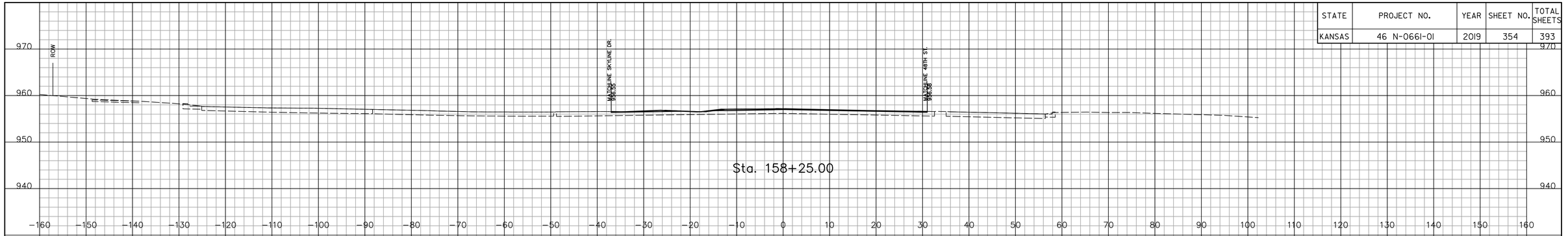

Plotted :25-APR-2019 14:39
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 353 | 393 |

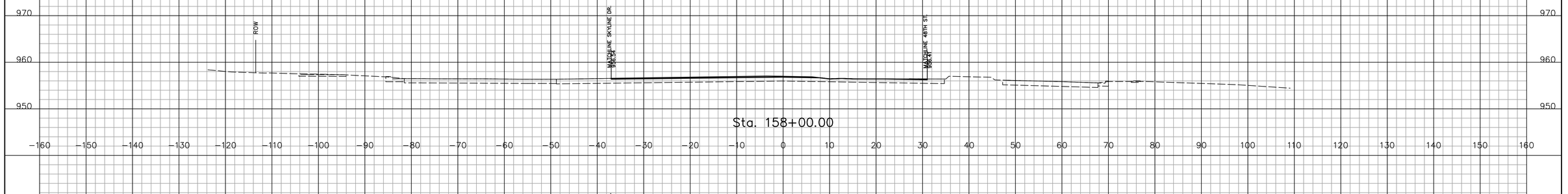



Plotted : 25-APR-2019 14:39
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 354 | 393 |



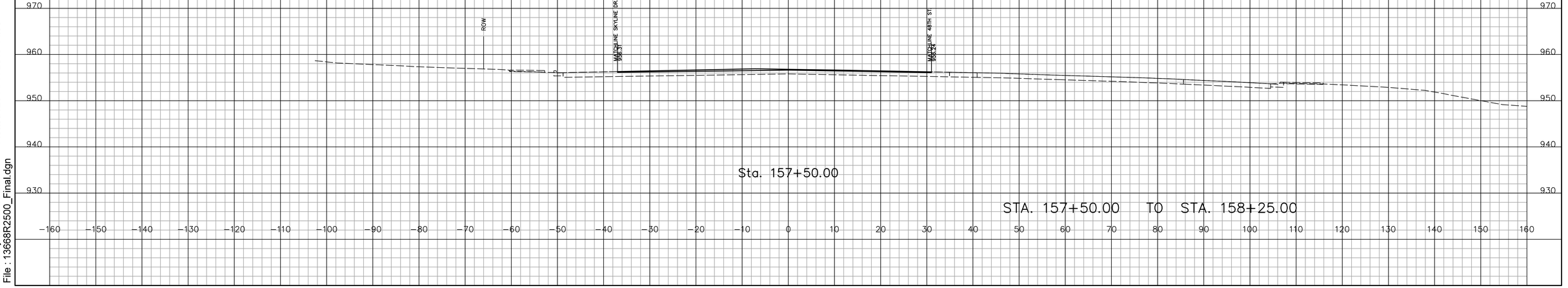

Sta. 158+25.00




Sta. 158+00.00




Sta. 157+75.00




Sta. 157+50.00

STA. 157+50.00 TO STA. 158+25.00

Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

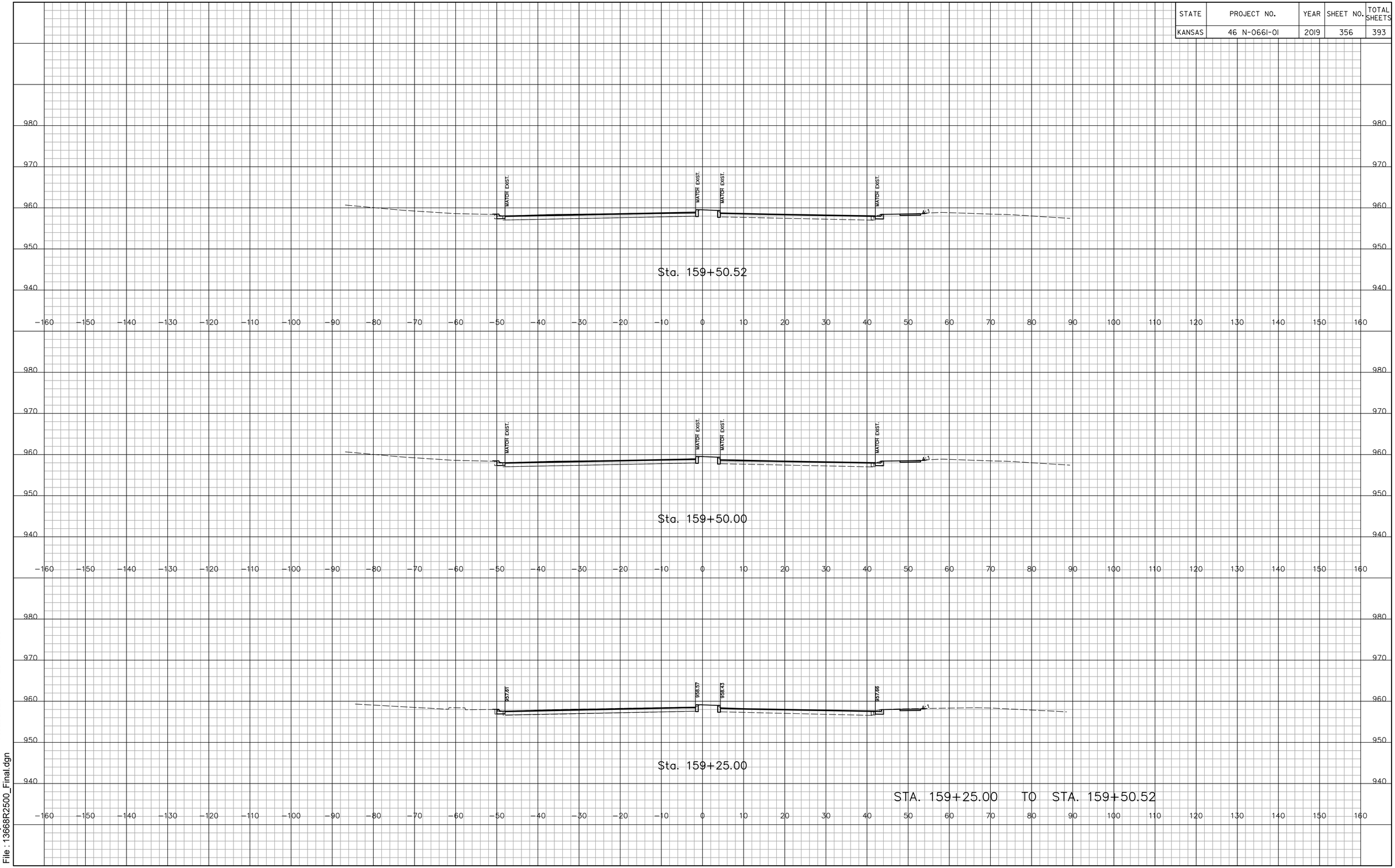
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 355 | 393 |




Plotted :25-APR-2019 14:39

Drawn By: : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 356 | 393 |




STA. 159+25.00 TO STA. 159+50.52

Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 357 | 393 |




STA. 159+75.00 TO STA. 160+25.00

Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 358 | 393 |



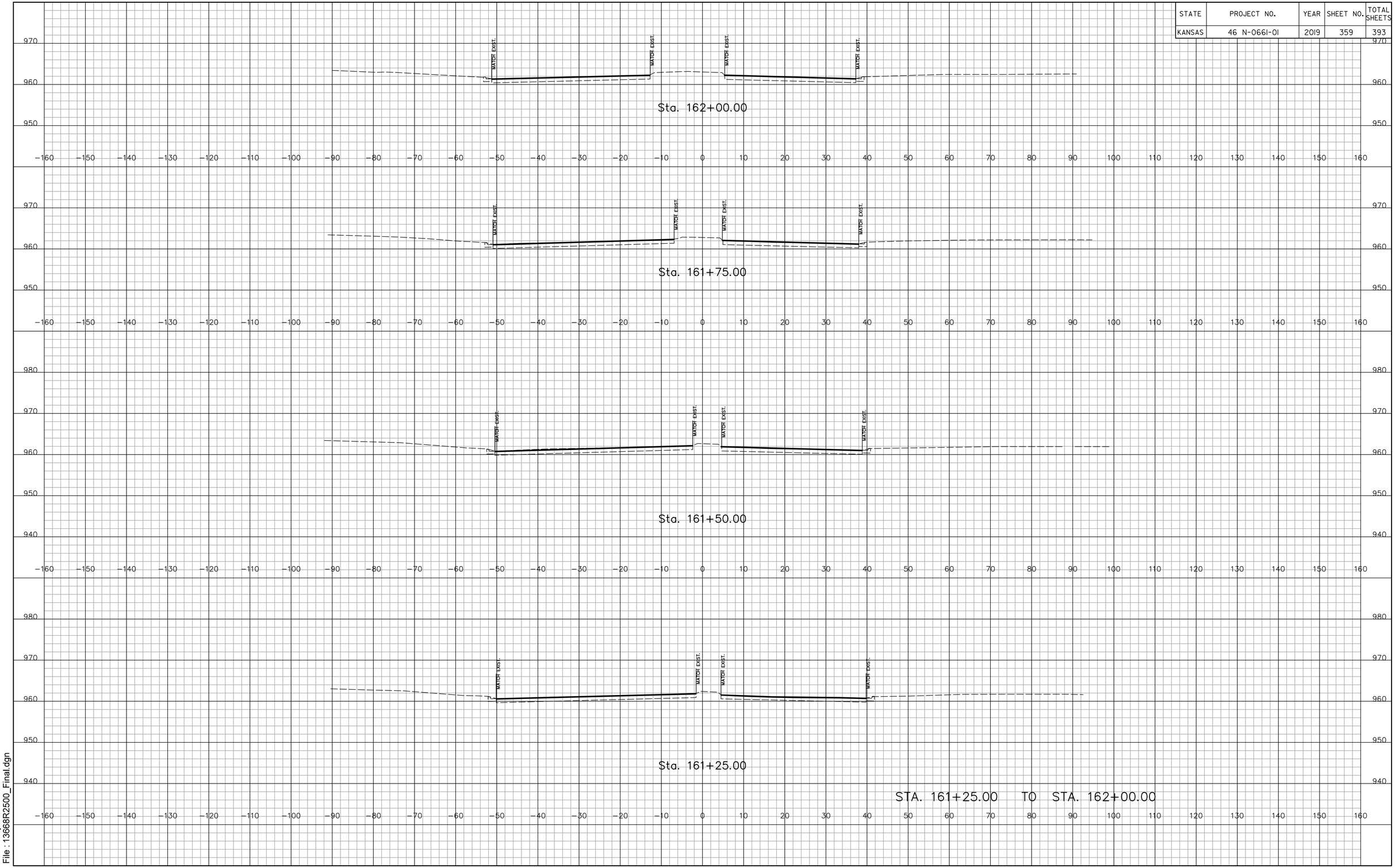

STA. 160+50.00 TO STA. 161+00.00

Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 359 | 393 |

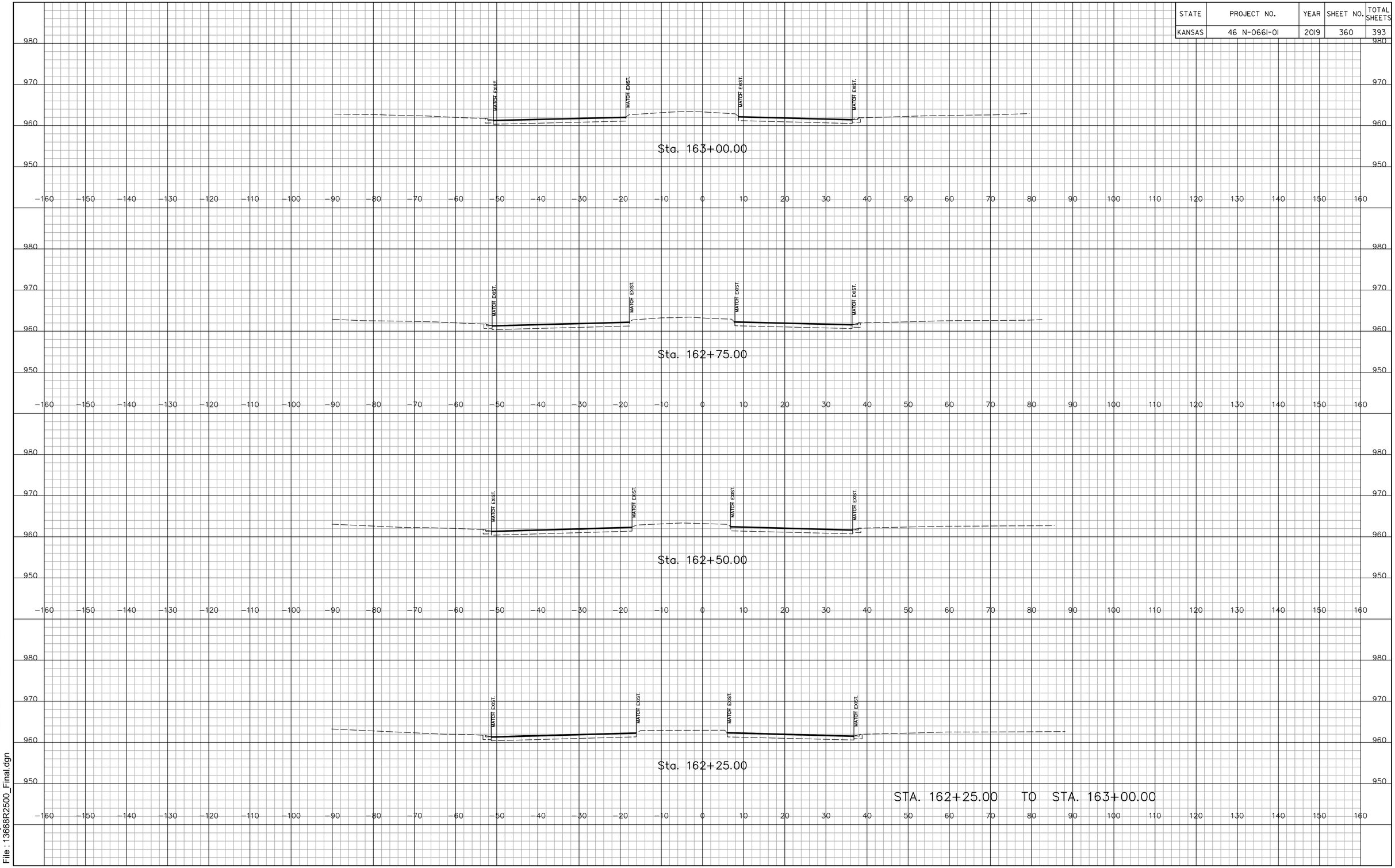



Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 360 | 393 |



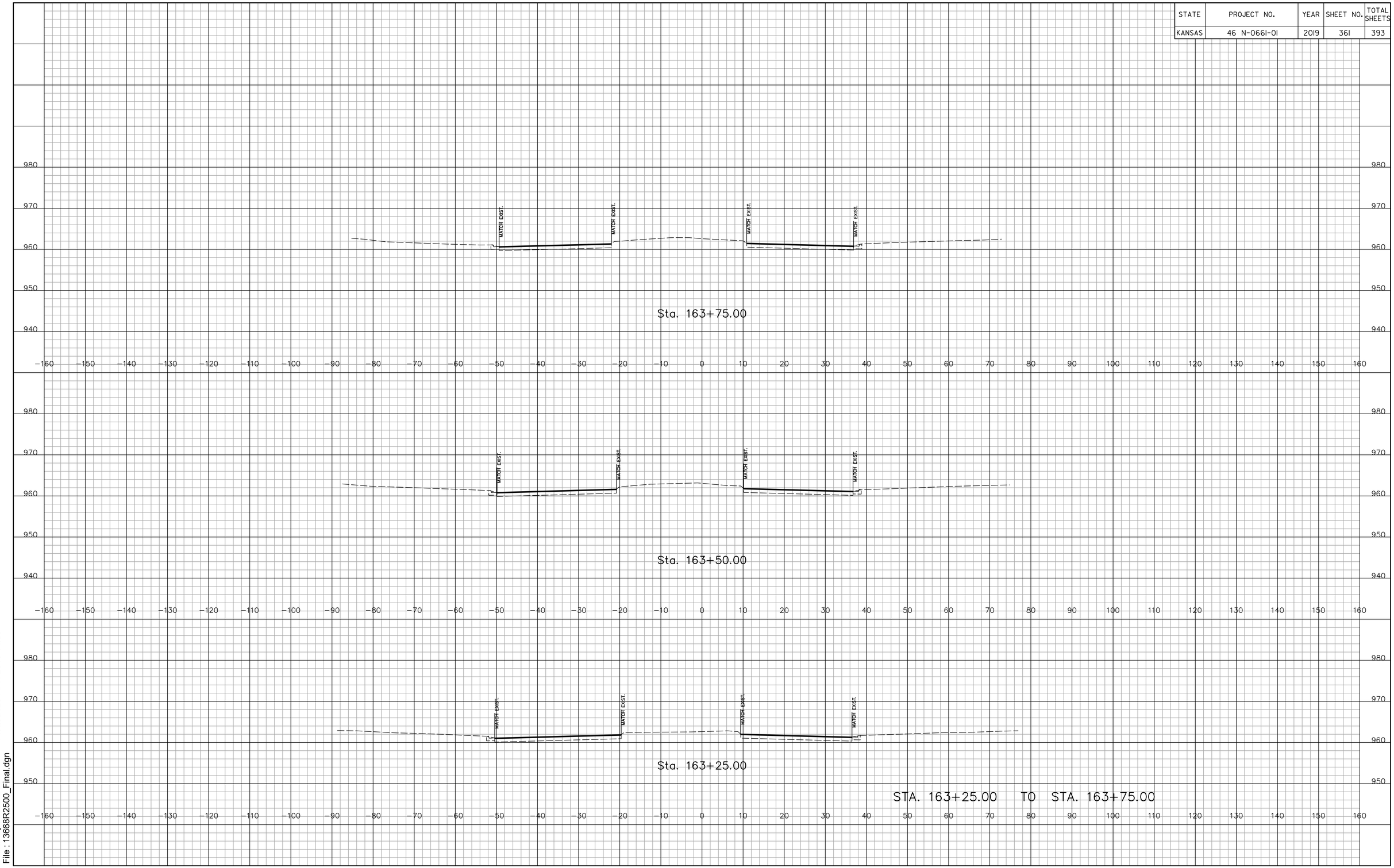

STA. 162+25.00 TO STA. 163+00.00

Plotted :25-APR-2019 14:39

Drawn By: : lrosenbaum

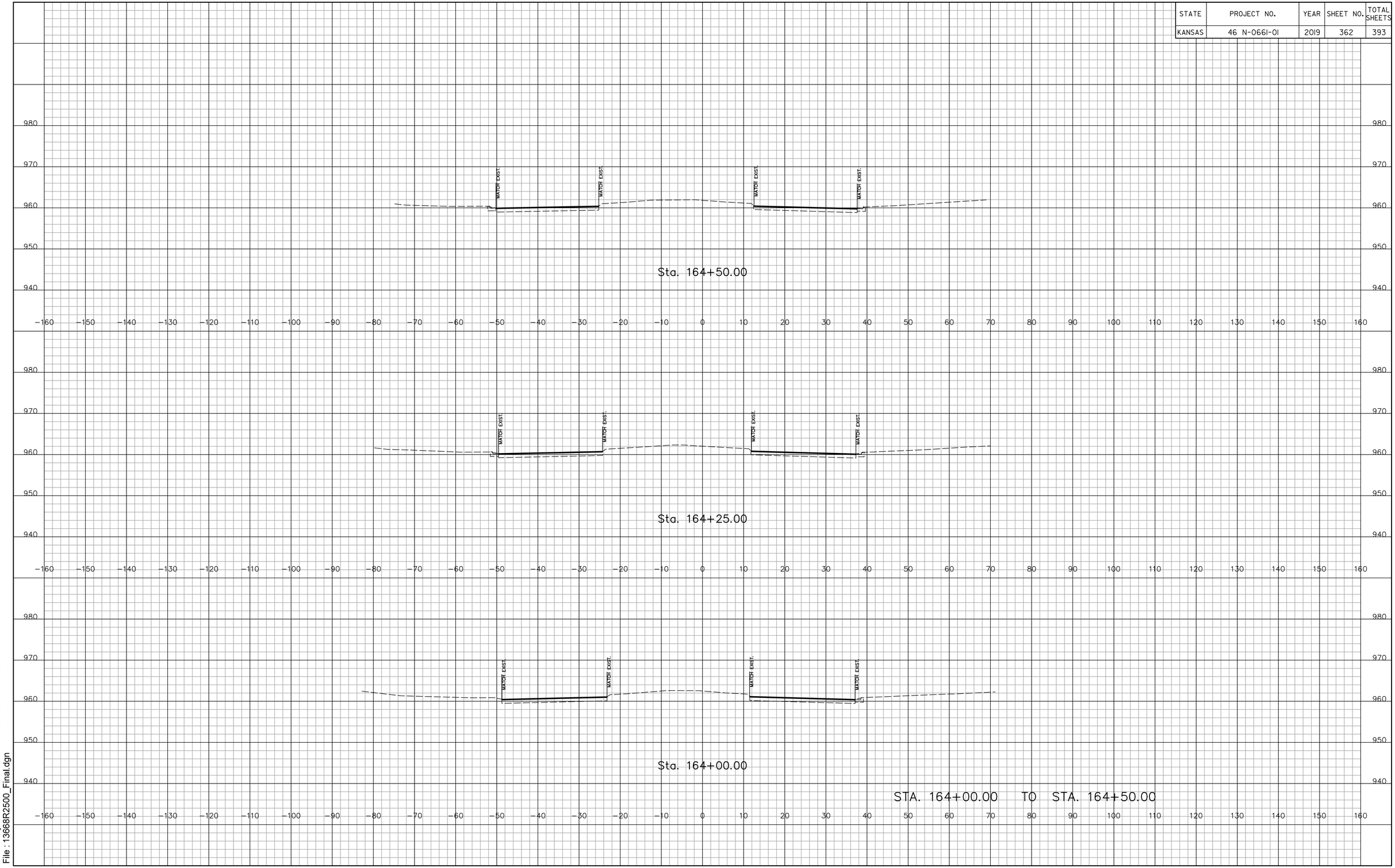
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 361 | 393 |




Plotted : 25-APR-2019 14:39
Drawn By: Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 362 | 393 |

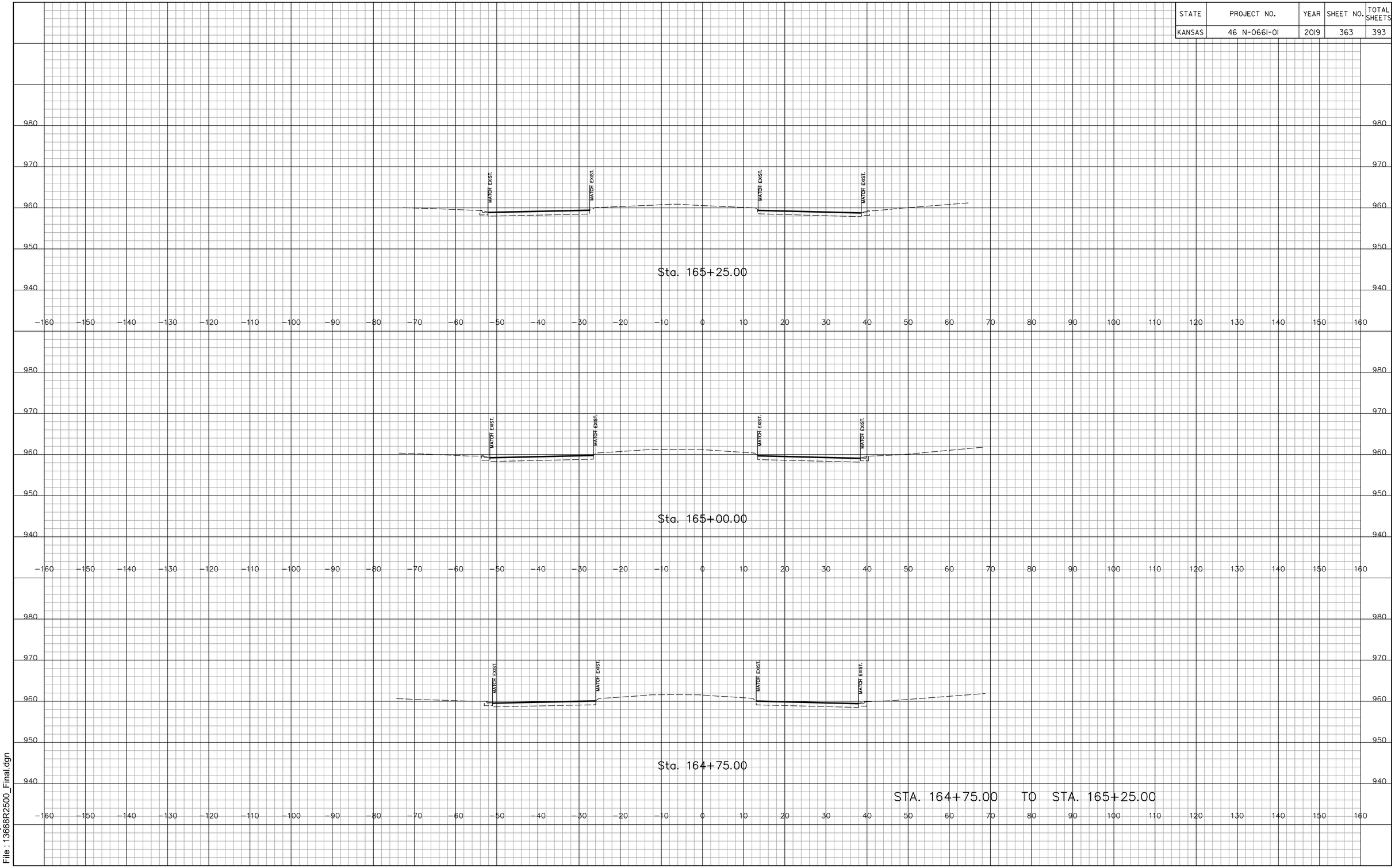



Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 363 | 393 |

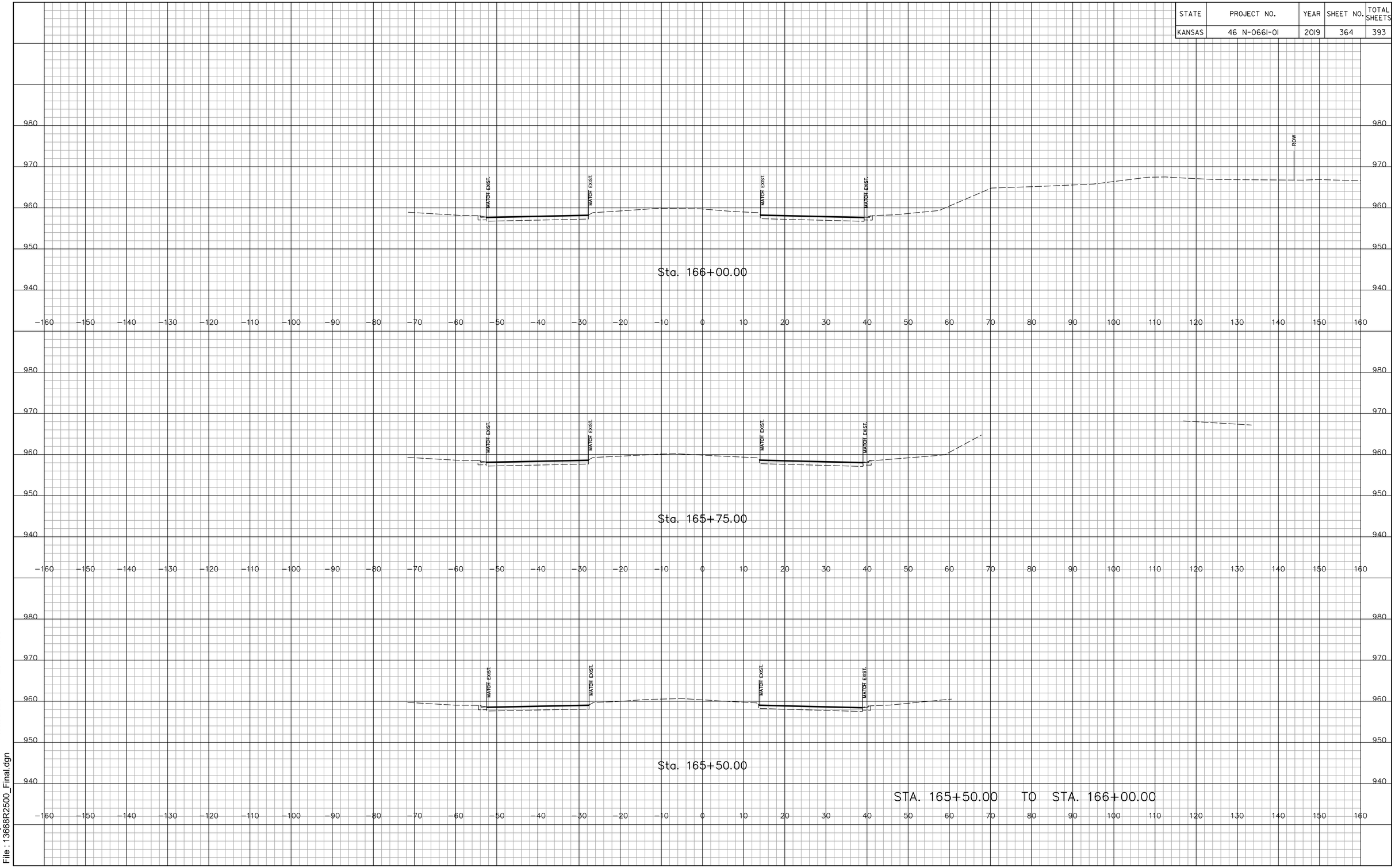



Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 364 | 393 |



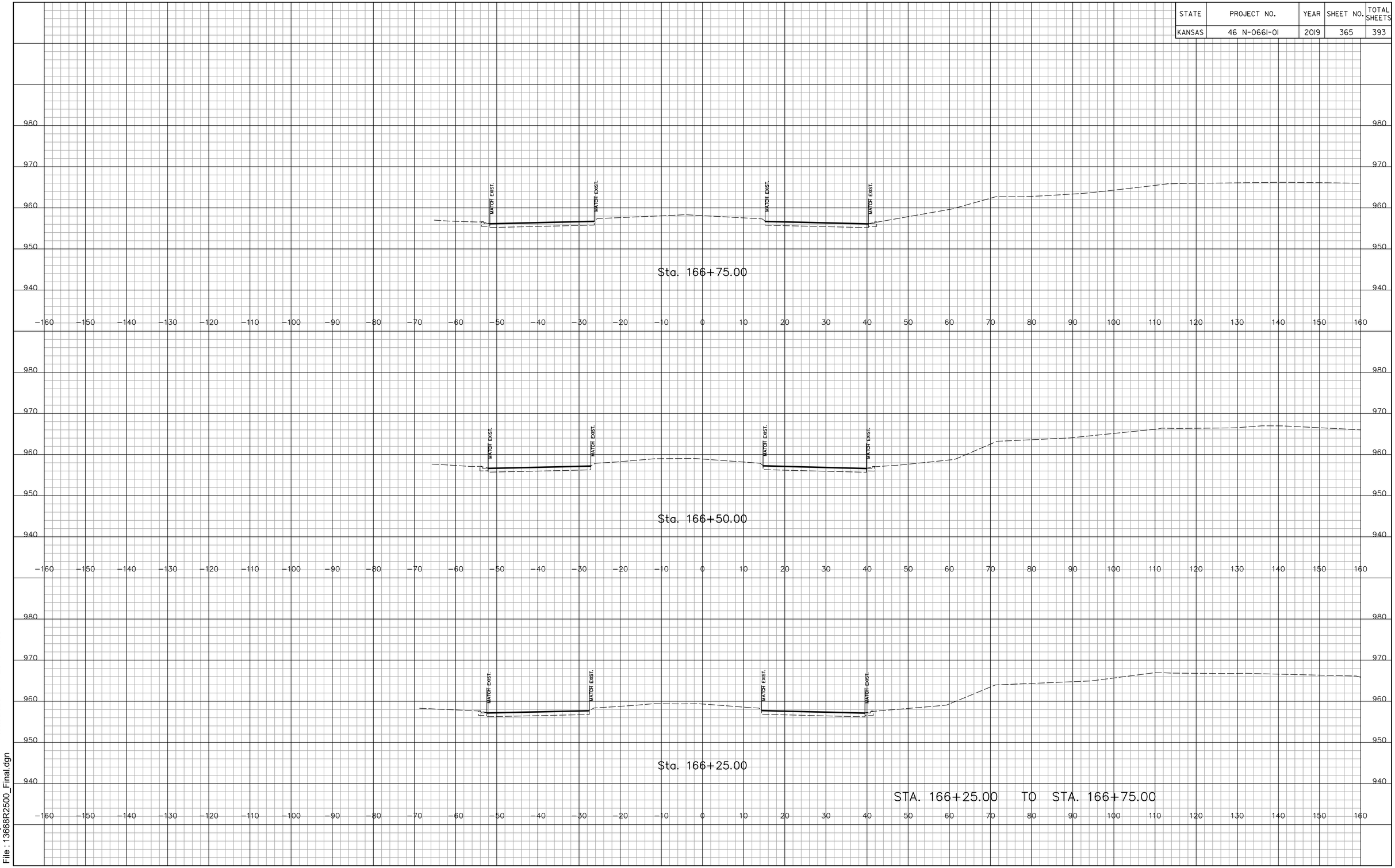

STA. 165+50.00 TO STA. 166+00.00

Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 365 | 393 |

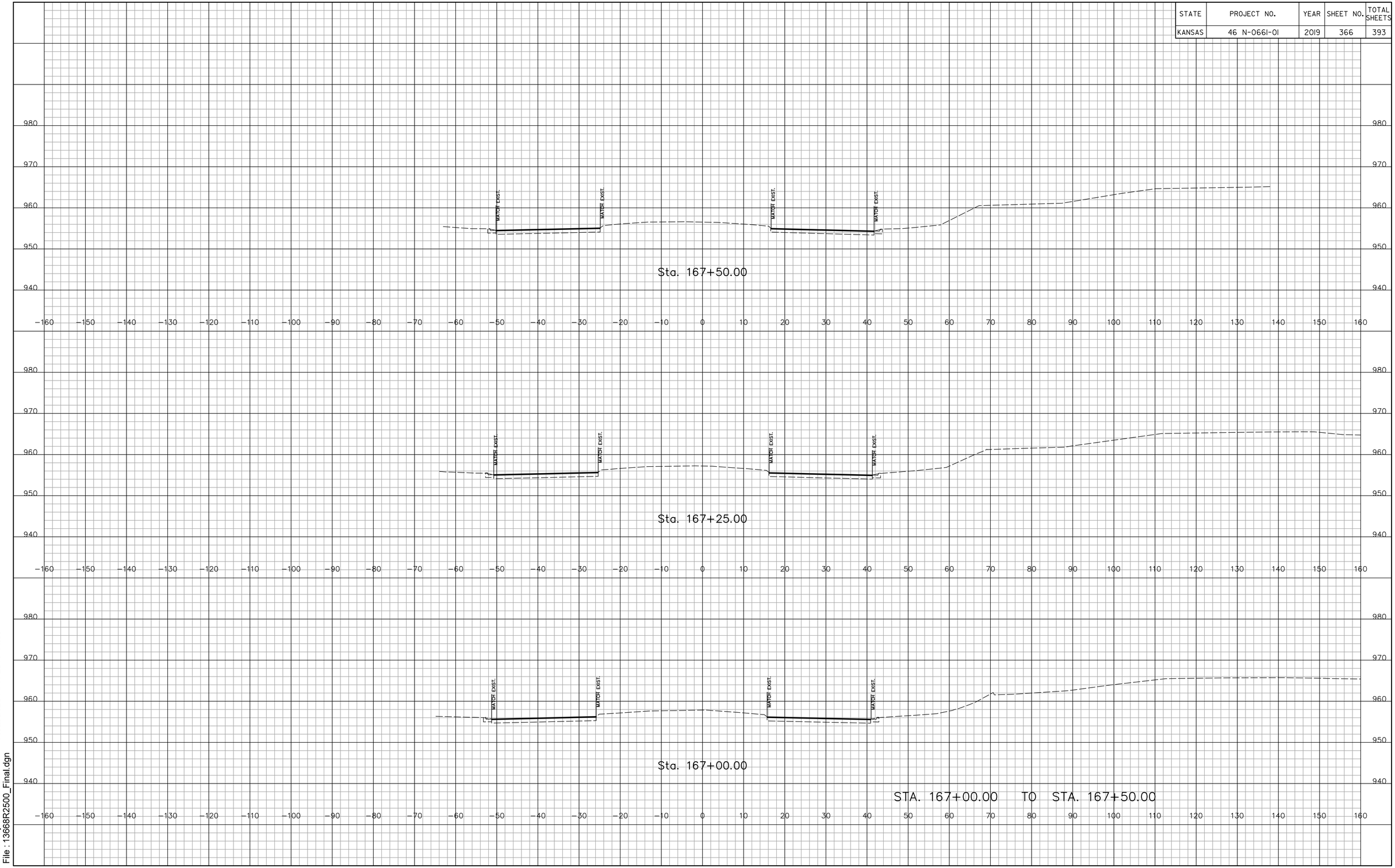



Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 366 | 393 |

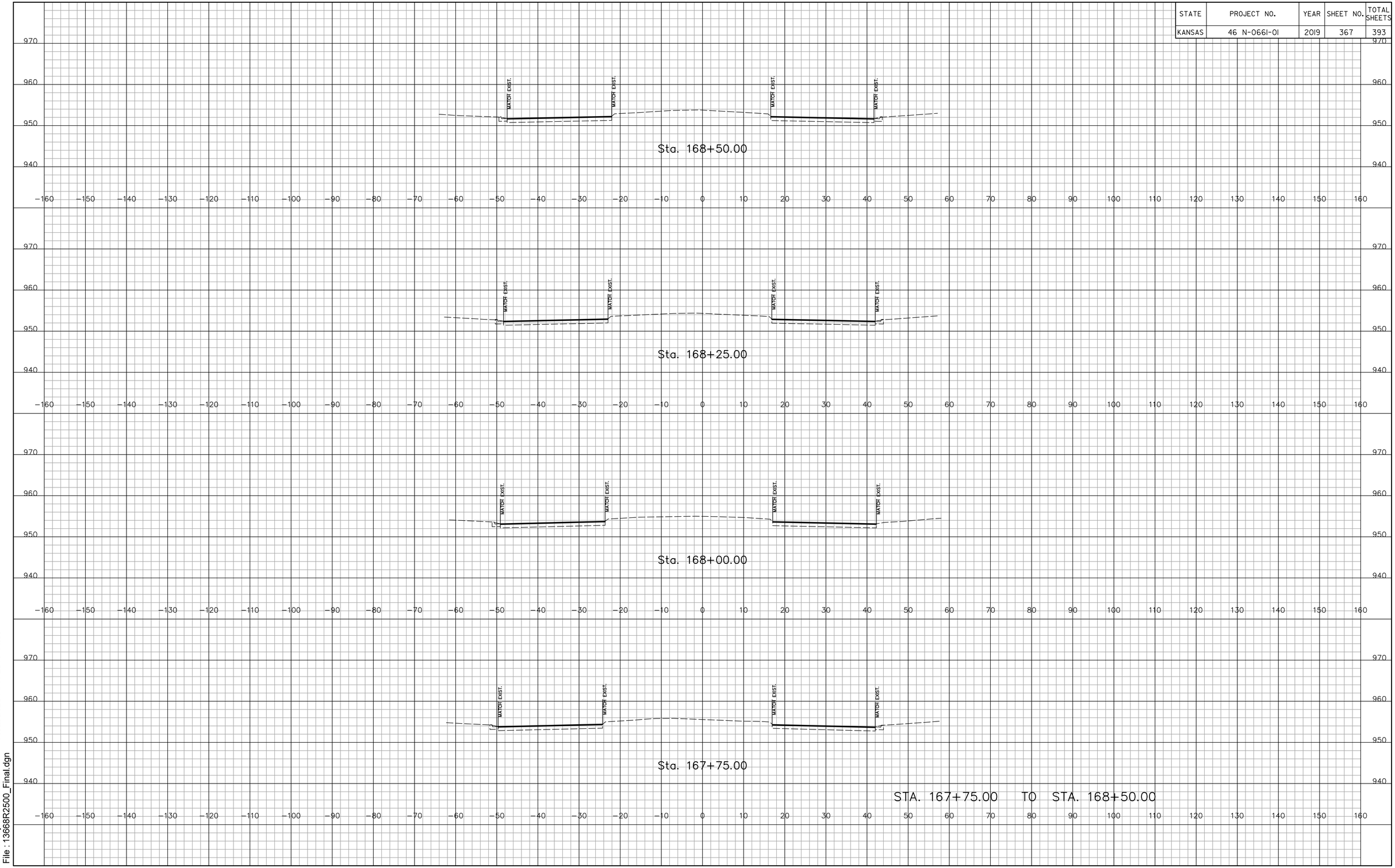



STA. 167+00.00 TO STA. 167+50.00

Plotted : 25-APR-2019 14:39

Drawn By: lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 367 | 393 |



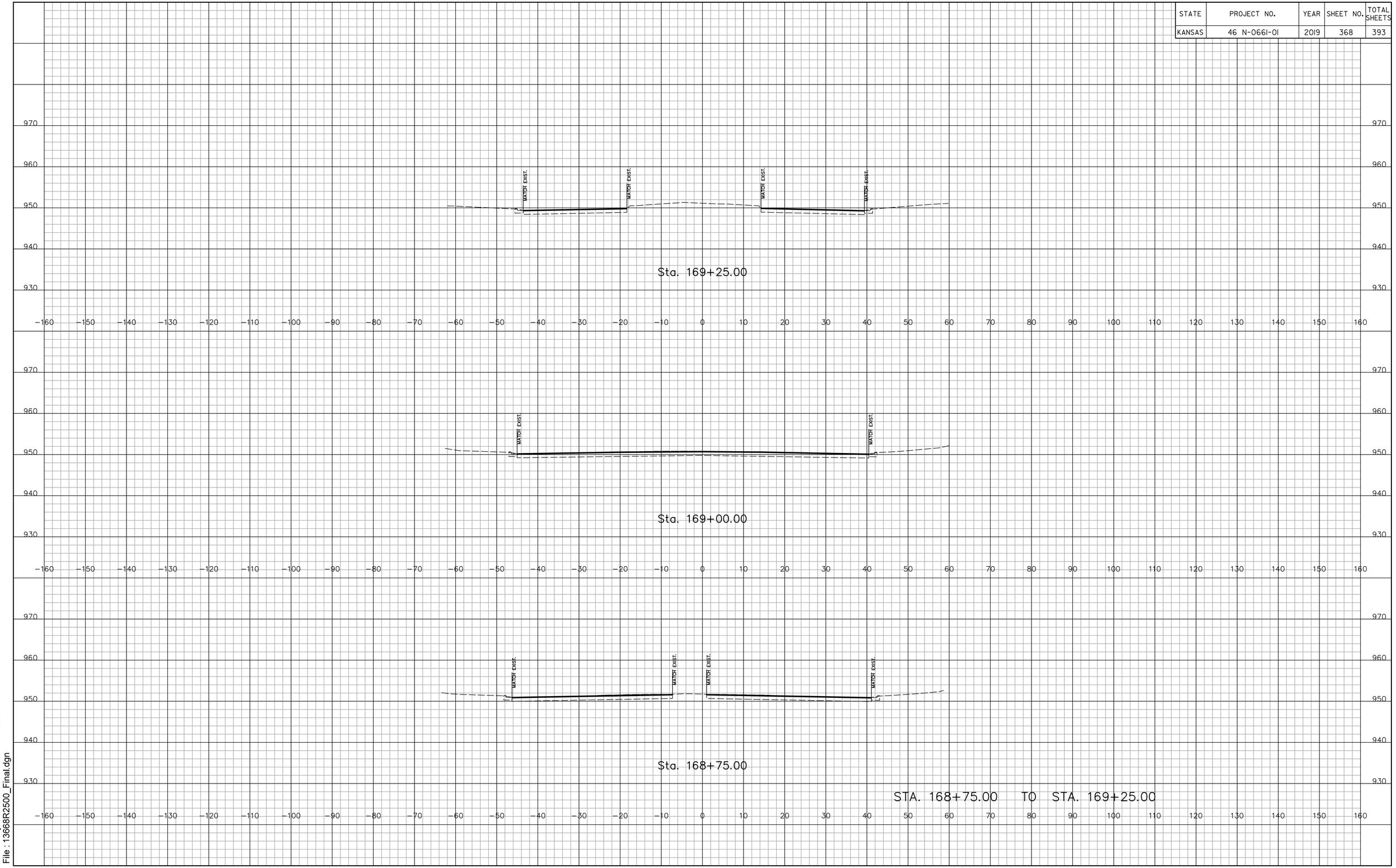

STA. 167+75.00 TO STA. 168+50.00

Plotted : 25-APR-2019 14:39

Drawn By: : Irosenbaum

File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 368 | 393 |



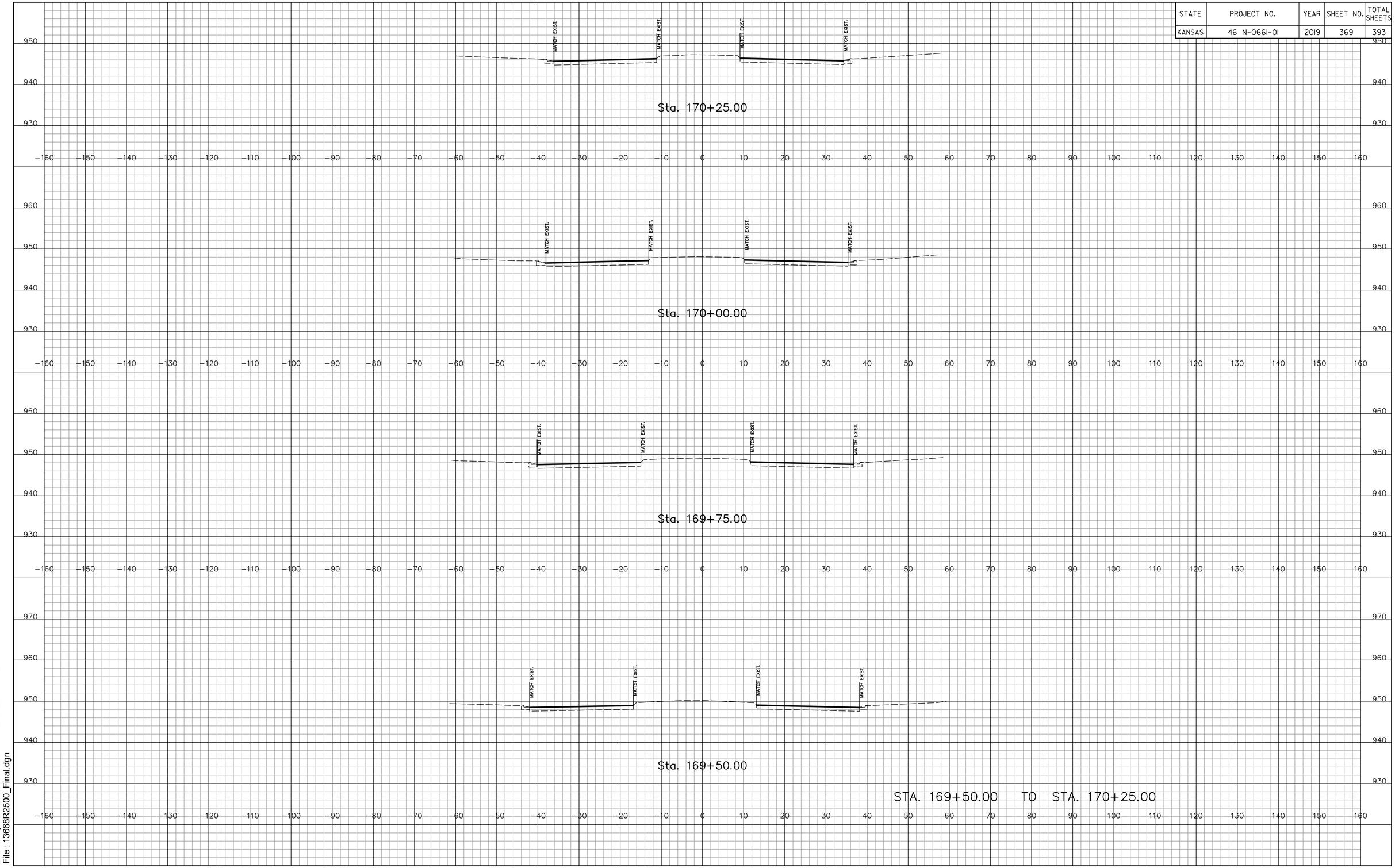

STA. 168+75.00 TO STA. 169+25.00

Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

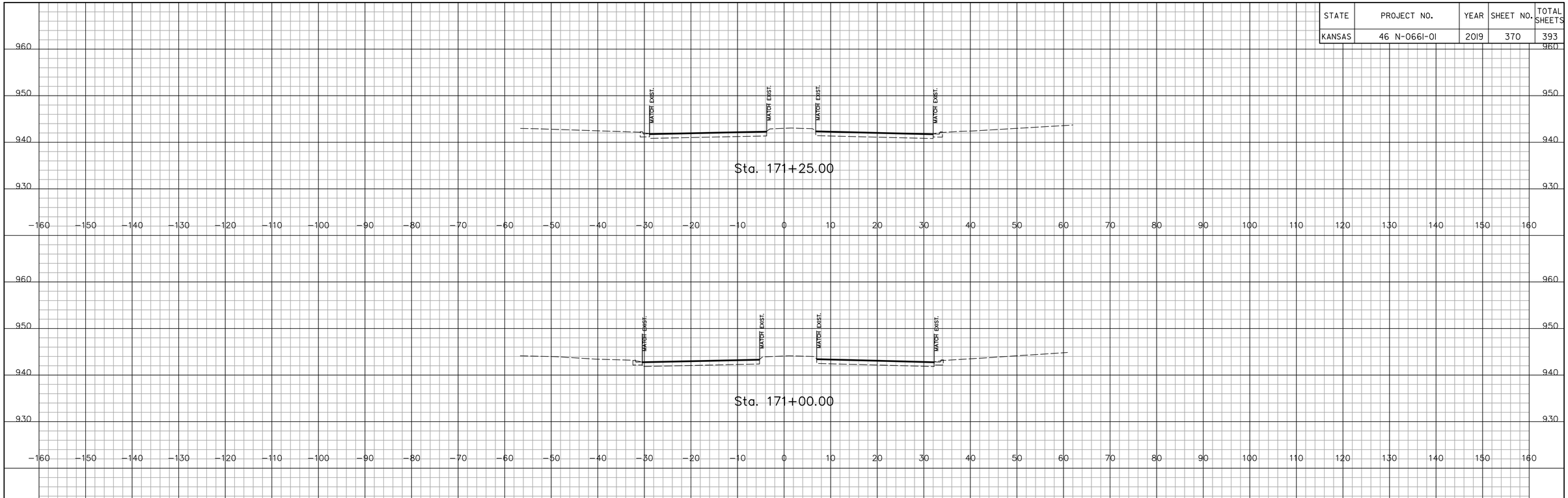
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 369 | 393 |




Plotted : 25-APR-2019 14:39

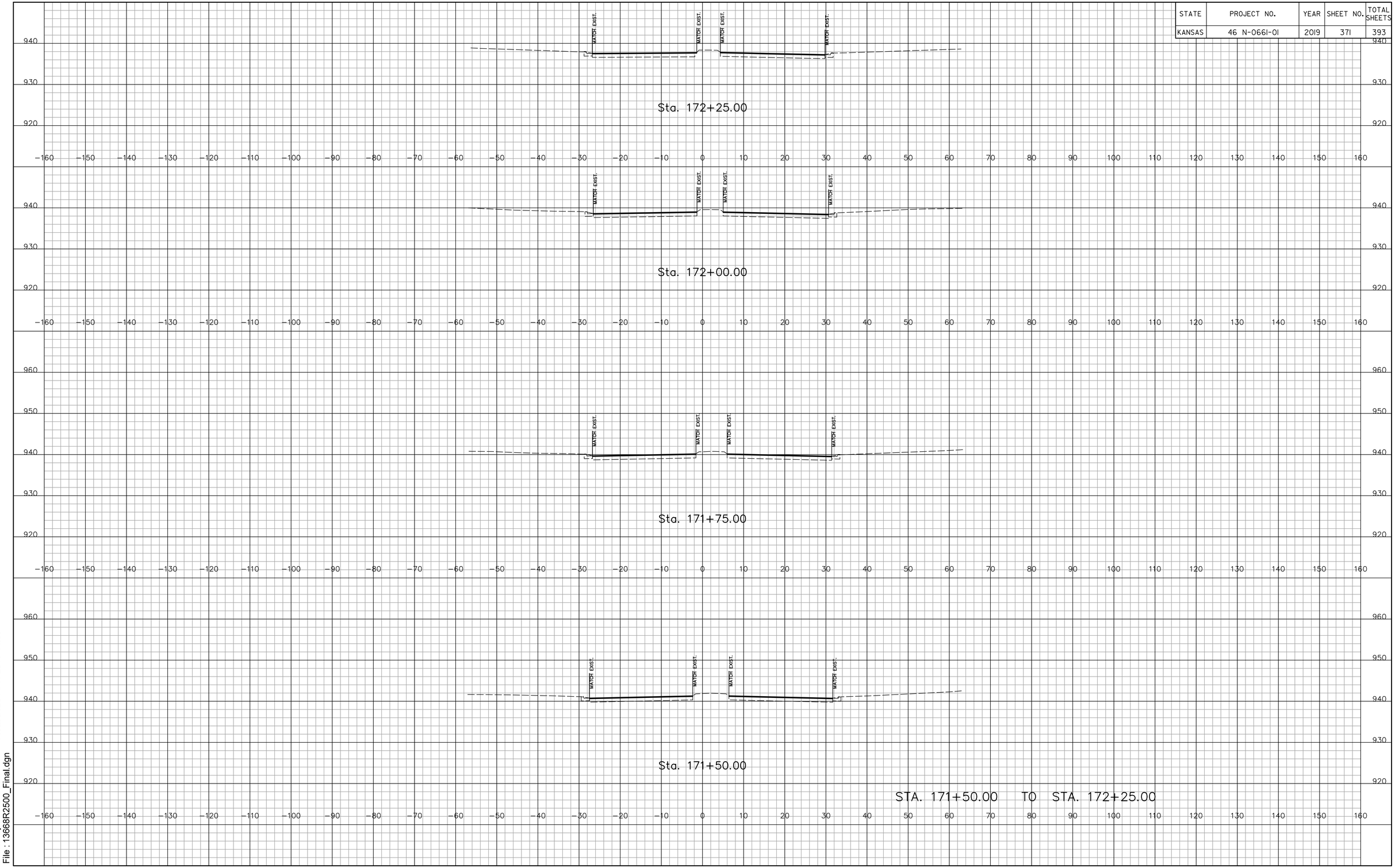
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 370 | 393 |



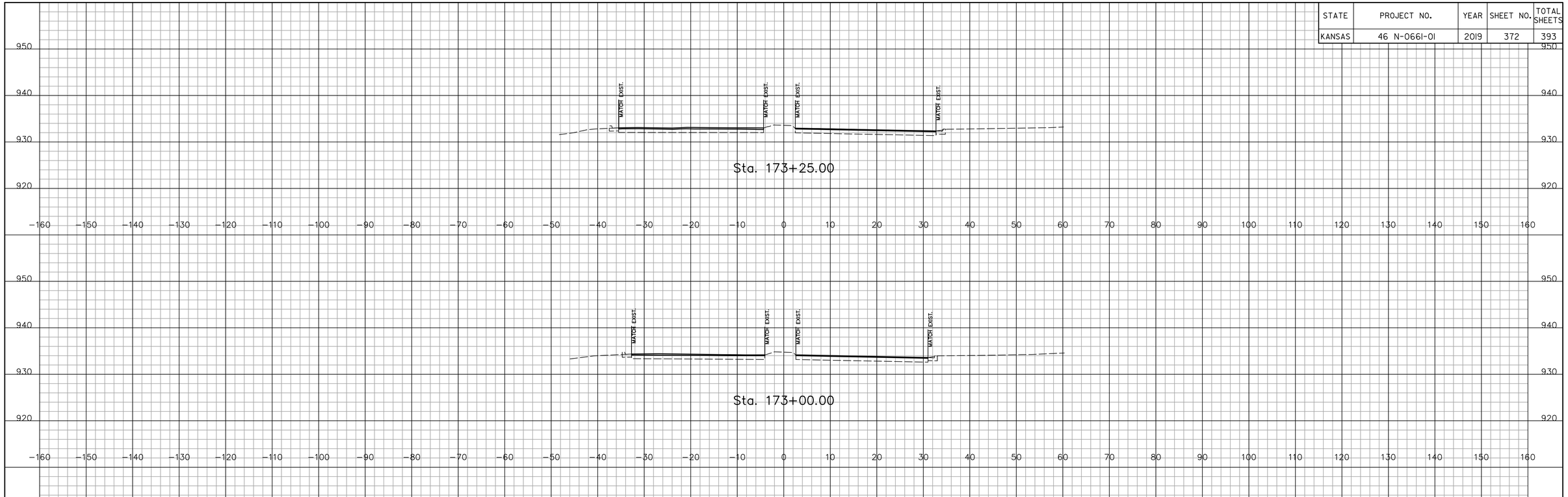

Plotted : 25-APR-2019 14:39
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 371 | 393 |



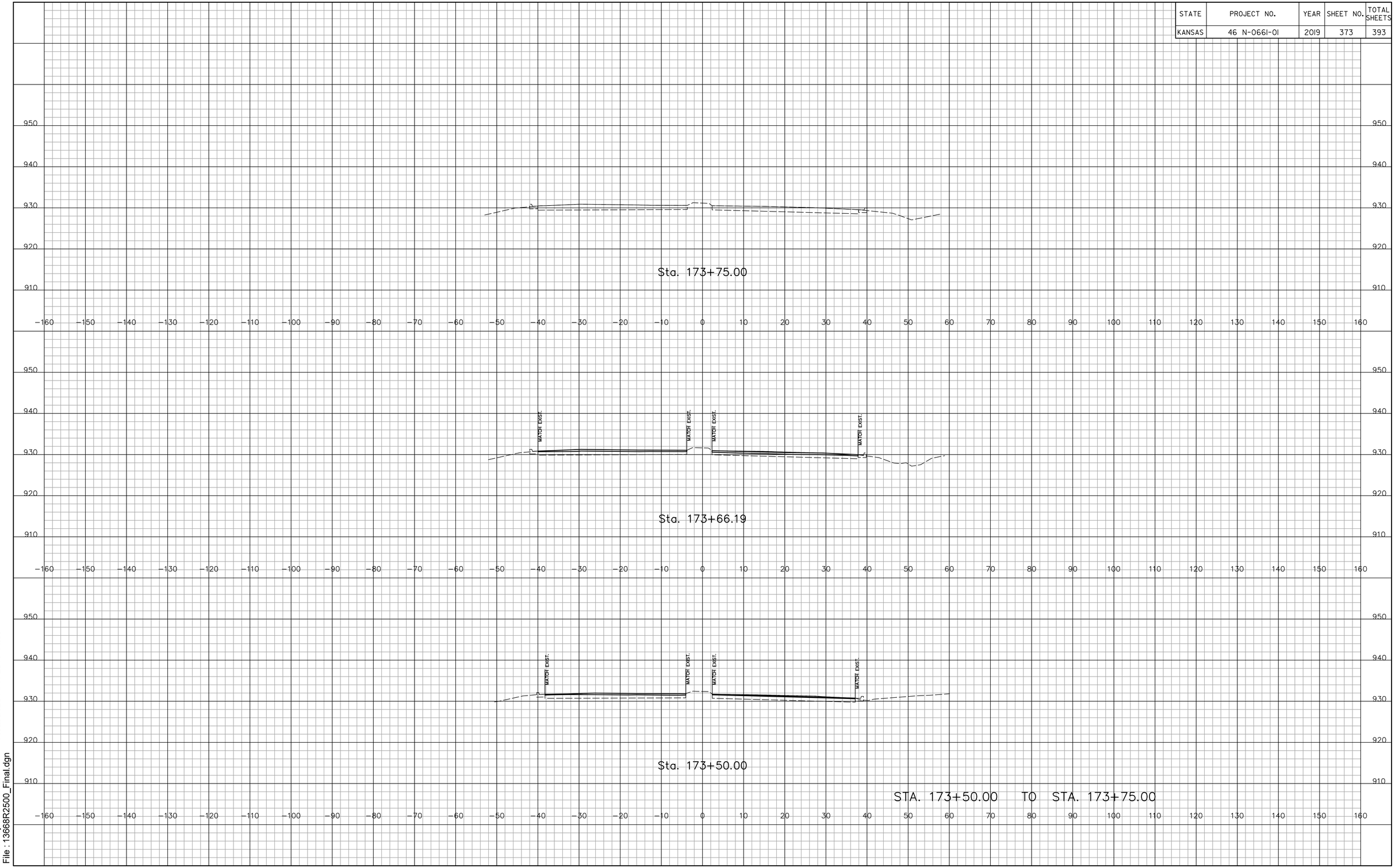

Plotted : 25-APR-2019 14:39
Drawn By : lrosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 372 | 393 |




Plotted : 25-APR-2019 14:39
Drawn By: : Irosenbaum
File : 13668R2500_Final.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 373 | 393 |



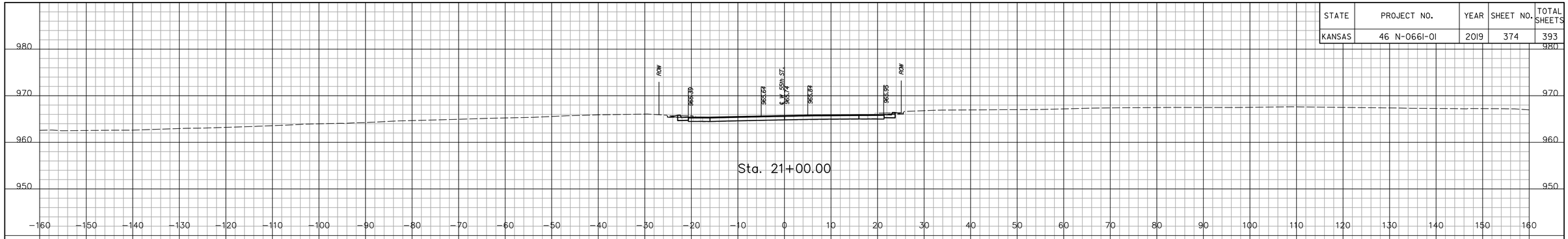

STA. 173+50.00 TO STA. 173+75.00

Plotted : 25-APR-2019 14:39

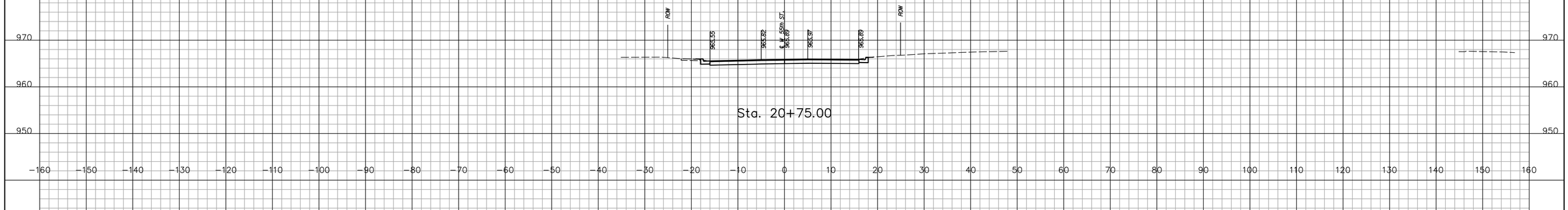
Drawn By : lrosenbaum

File : 13668R2500_Final.dgn

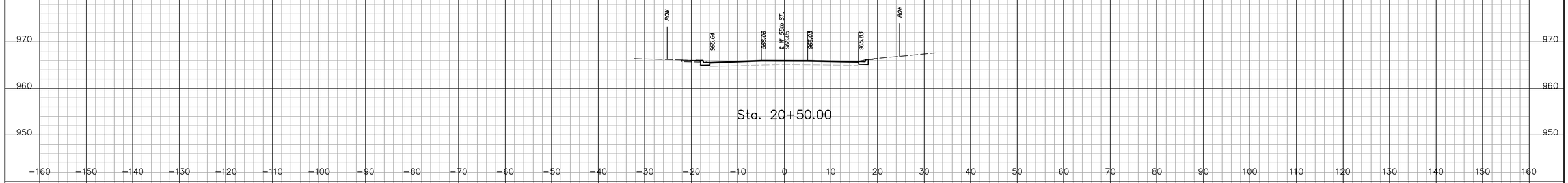
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 374 | 393 |



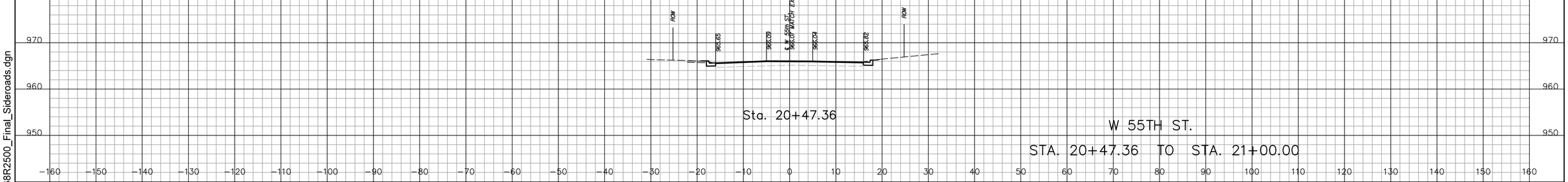

Sta. 21+00.00




Sta. 20+75.00




Sta. 20+50.00



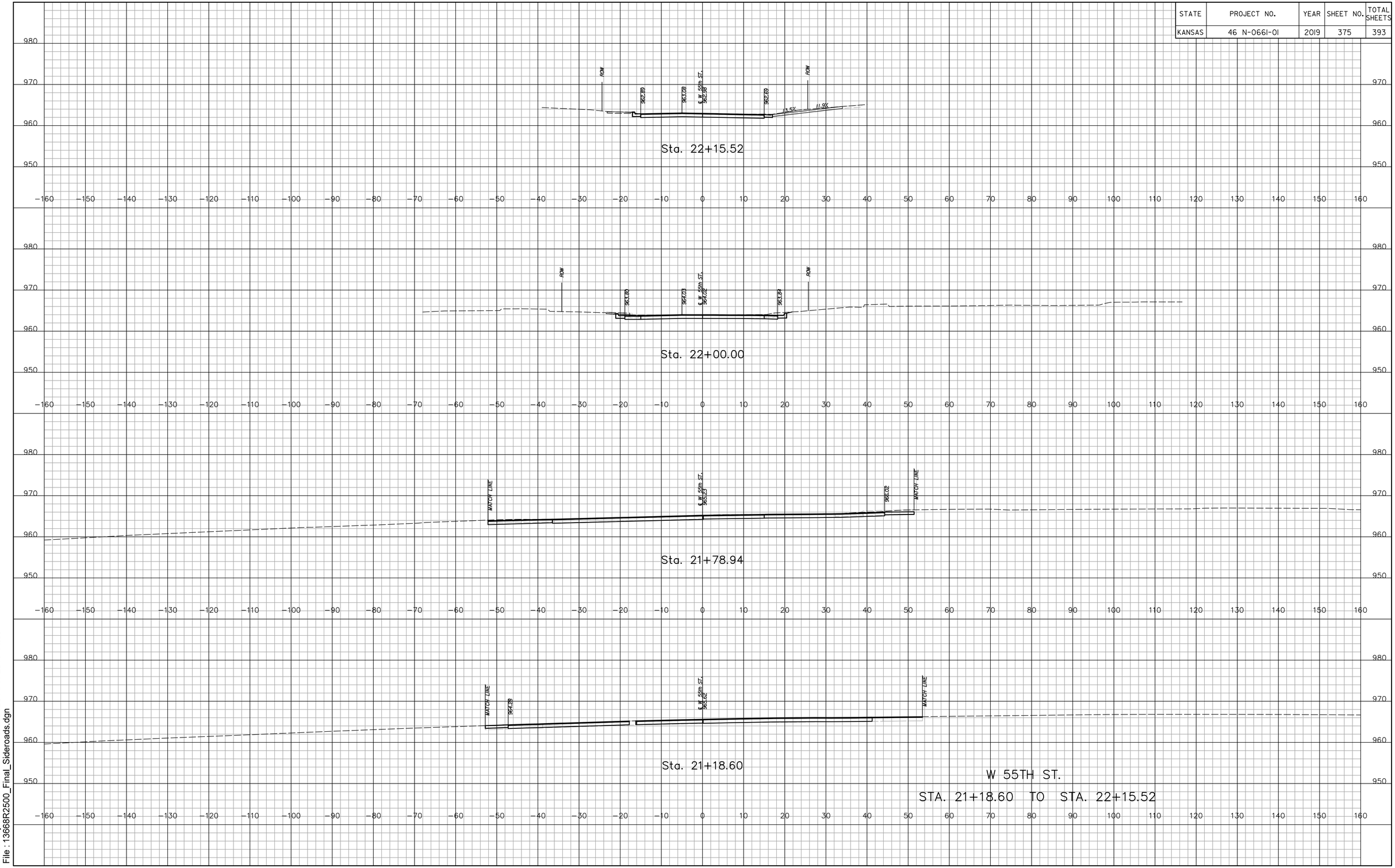

Sta. 20+47.36

W 55TH ST.

STA. 20+47.36 TO STA. 21+00.00

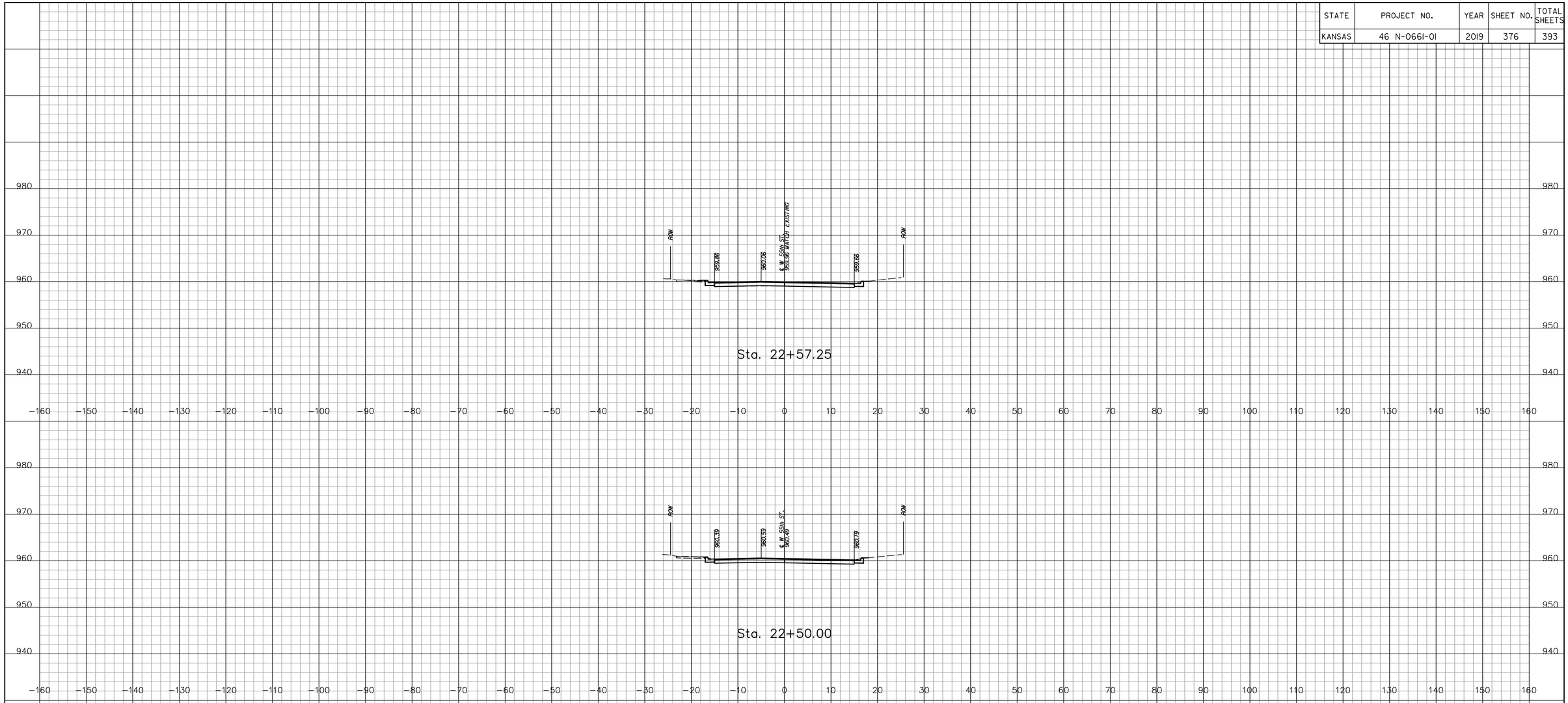
Drawn By: Irosenbaum Plotted: 25-APR-2019 14:39
File: 13668R2500_Final_Sideroads.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 375 | 393 |




Drawn By: Irosenbaum Plotted :25-APR-2019 14:39
File : 13668R2500_Final_Sideroads.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 376 | 393 |




Drawn By: Irosenbaum Plotted :25-APR-2019 14:39
File : 13668R2500_Final_Sideroads.dgn

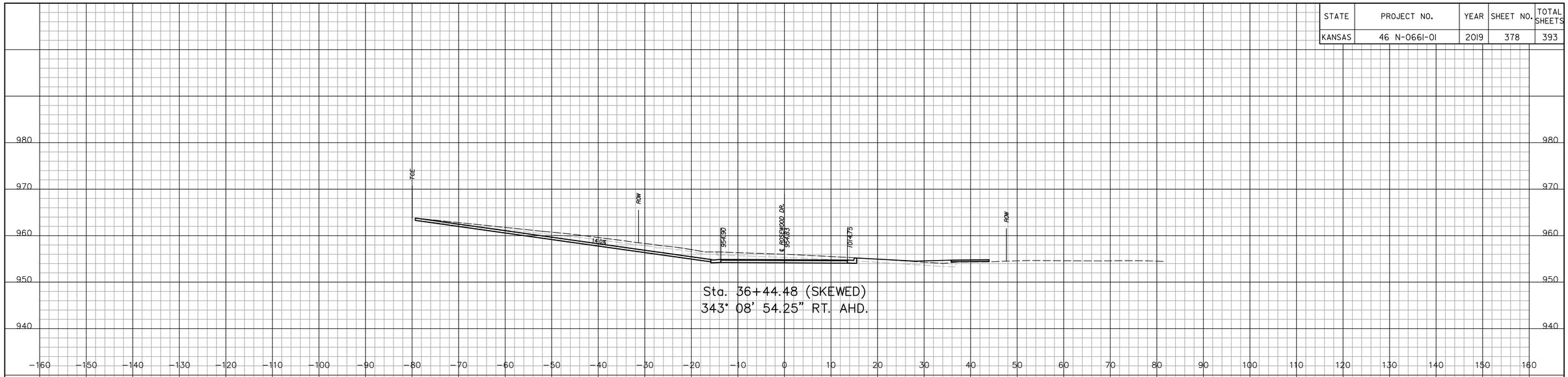
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 377 | 393 |




ROSEWOOD DR.
STA. 35+62.05 TO STA. 35+75.00

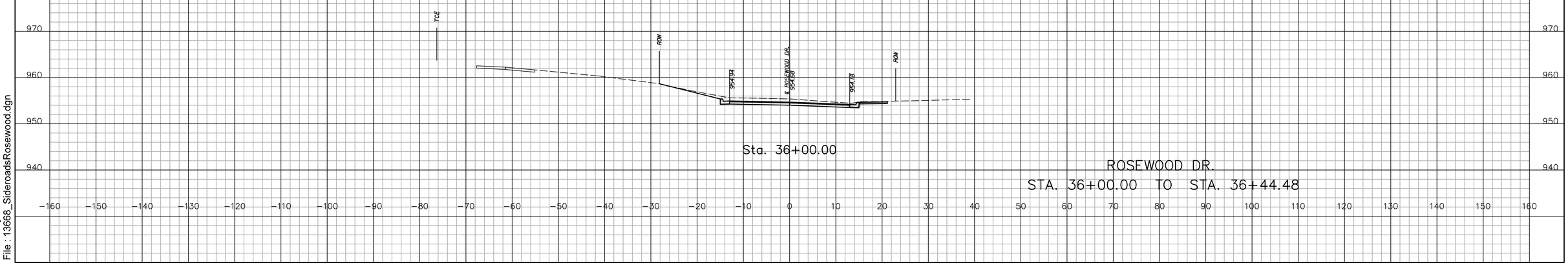
Drawn By: lrosenbaum Plotted :25-APR-2019 14:39
File : 13668_SideroadsRosewood.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 378 | 393 |





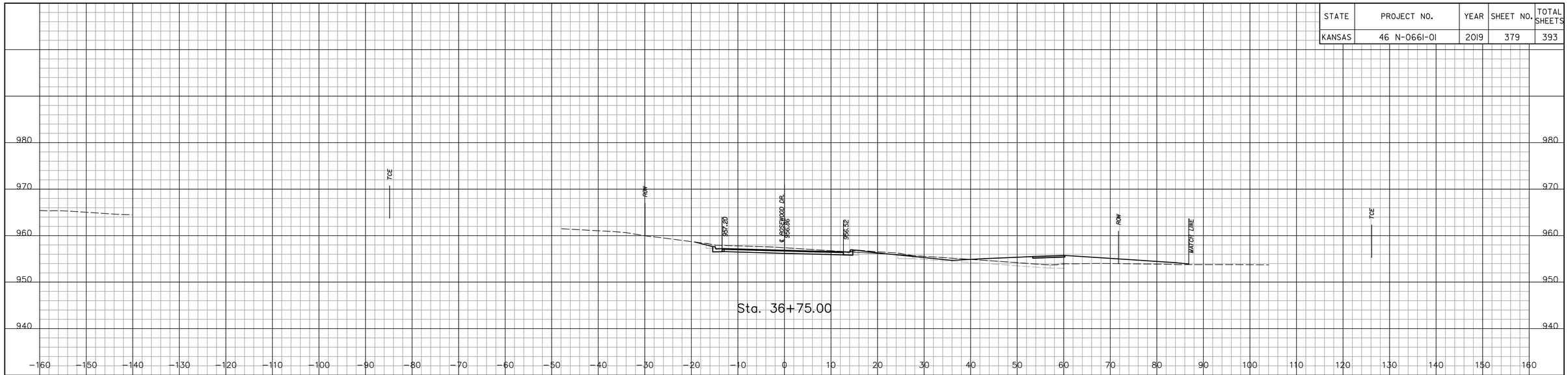




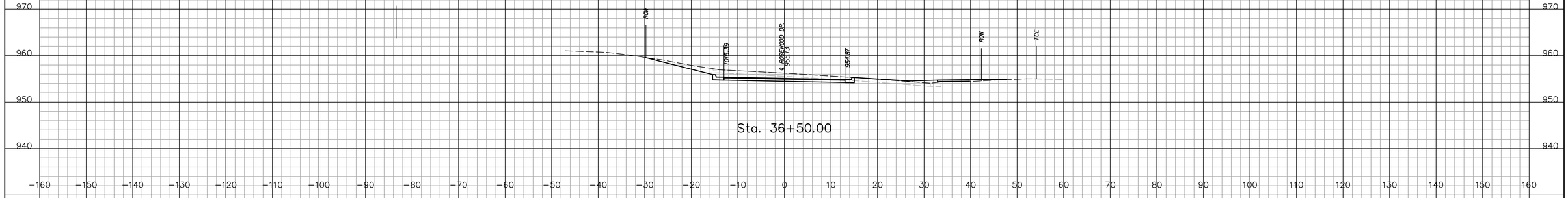

ROSEWOOD DR.
STA. 36+00.00 TO STA. 36+44.48

Plotted : 25-APR-2019 14:39
Drawn By : lrosenbaum
File : 13668_SideroadsRosewood.dgn

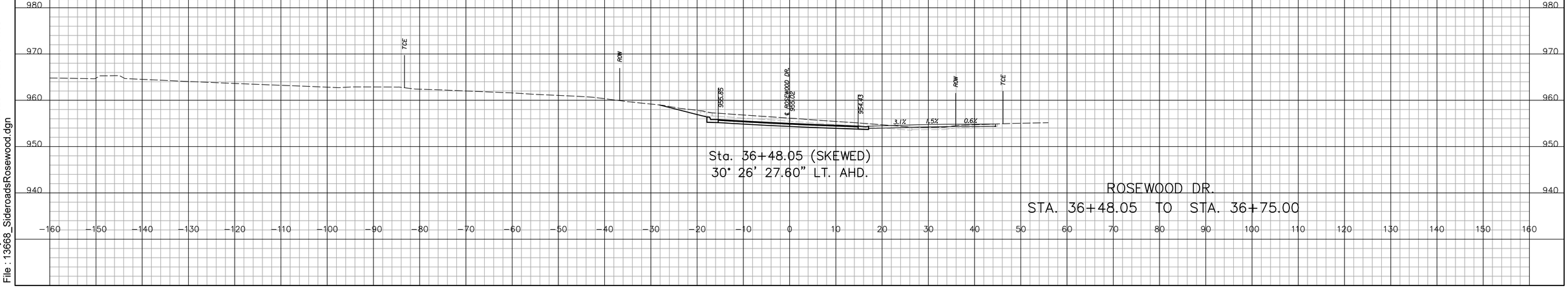
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 379 | 393 |




Sta. 36+75.00




Sta. 36+50.00

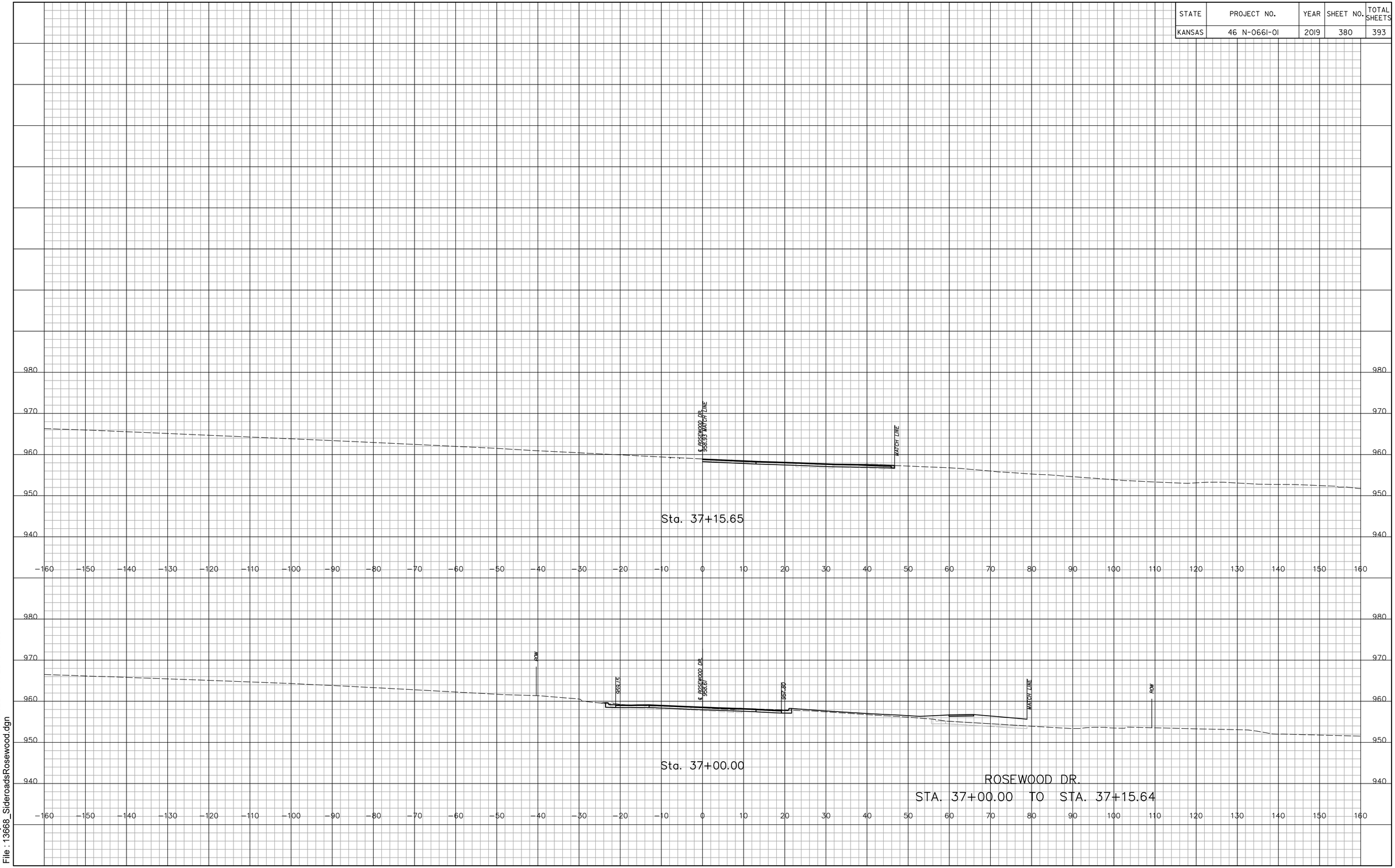



Sta. 36+48.05 (SKEWED)
30° 26' 27.60" LT. AHD.

ROSEWOOD DR.
STA. 36+48.05 TO STA. 36+75.00

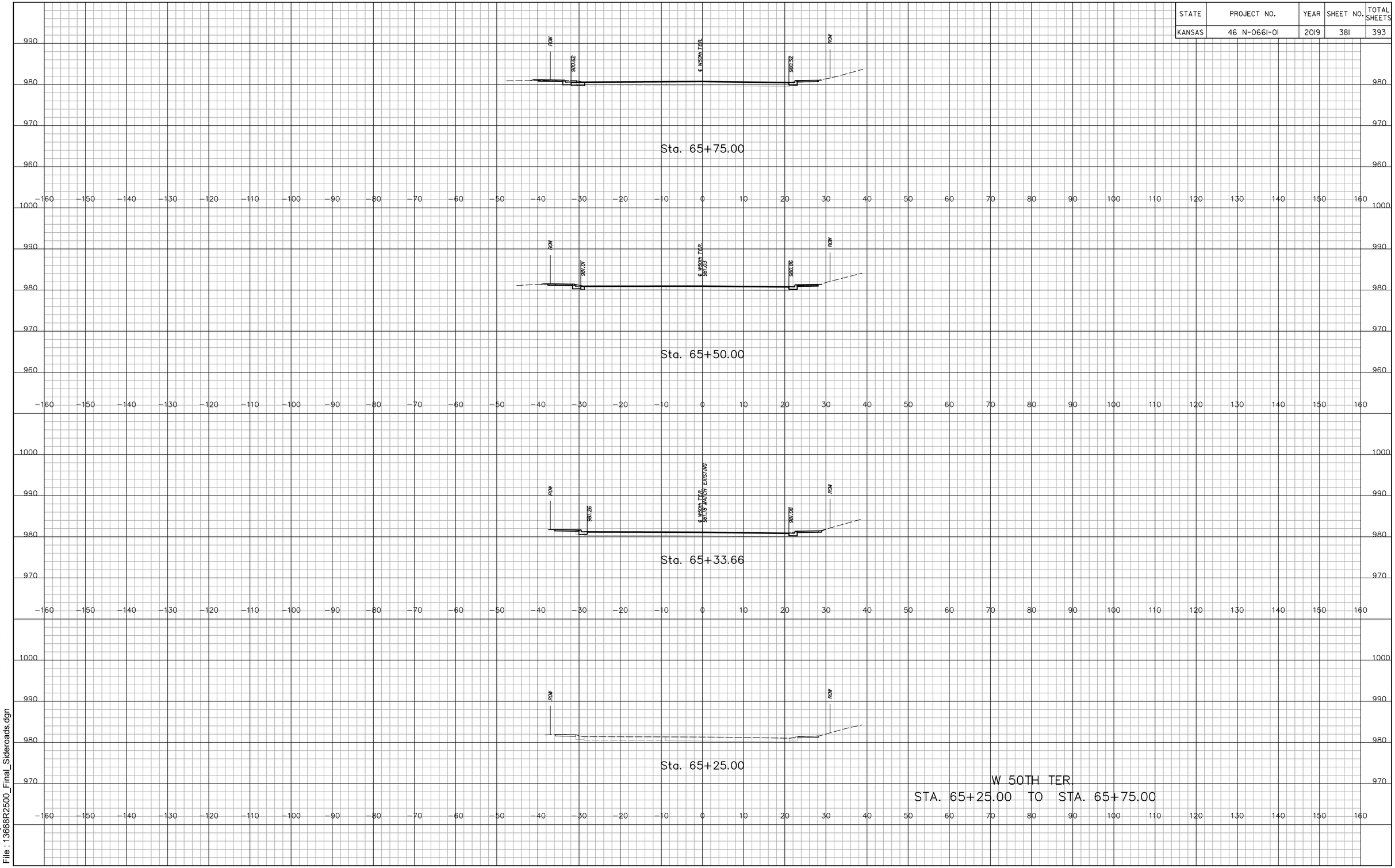
Plotted : 25-APR-2019 14:39
Drawn By : Irosenbaum
File : 13668_SideroadsRosewood.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 380 | 393 |




Plotted : 25-APR-2019 14:39
Drawn By : lrosenbaum
File : 13668_SideroadsRosewood.dgn

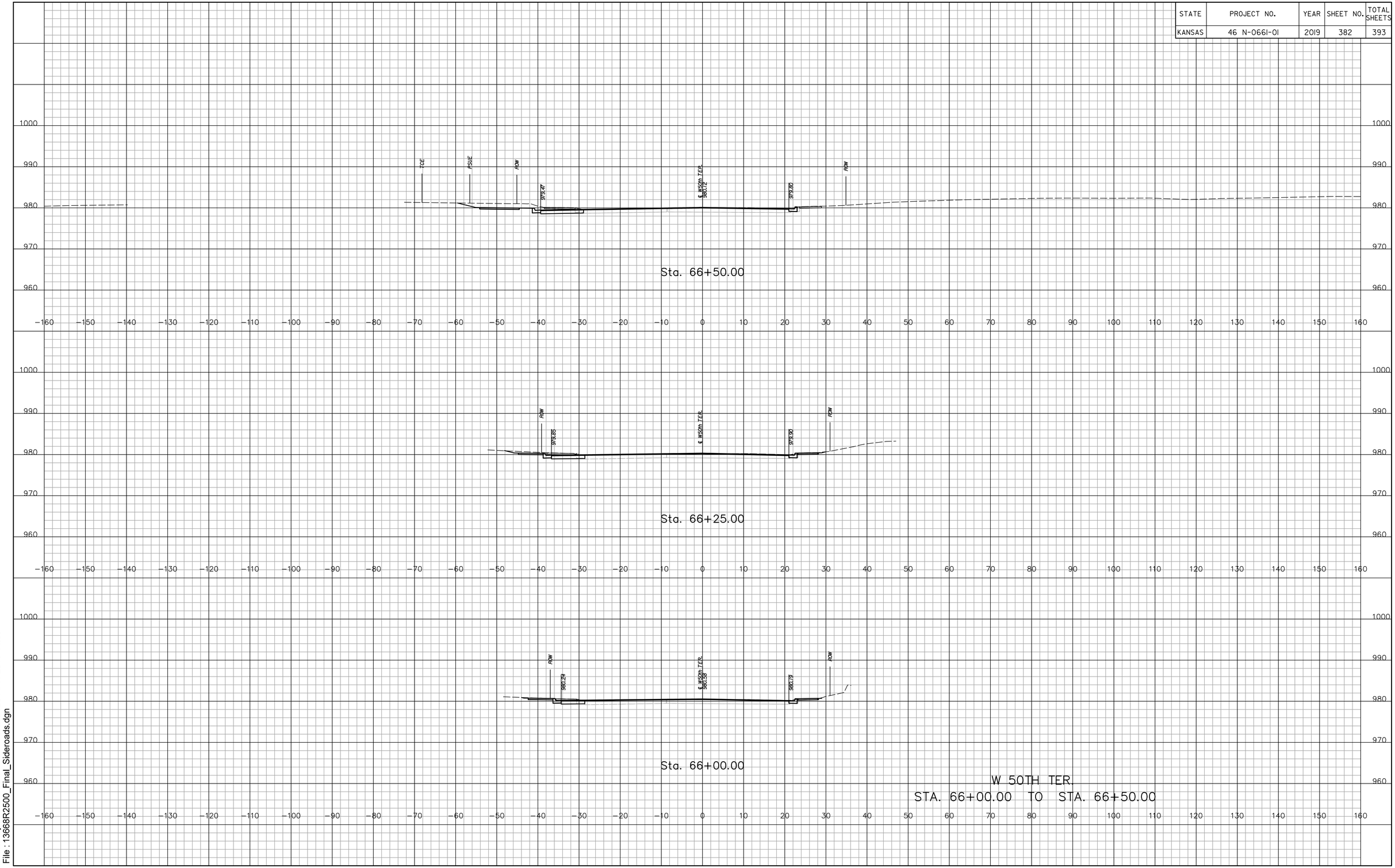
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 381 | 393 |




Drawn By: Irosenbaum Plotted: 25-APR-2019 14:39
File: 13668R2500_Final_Sideroads.dgn

Sht.

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 382 | 393 |

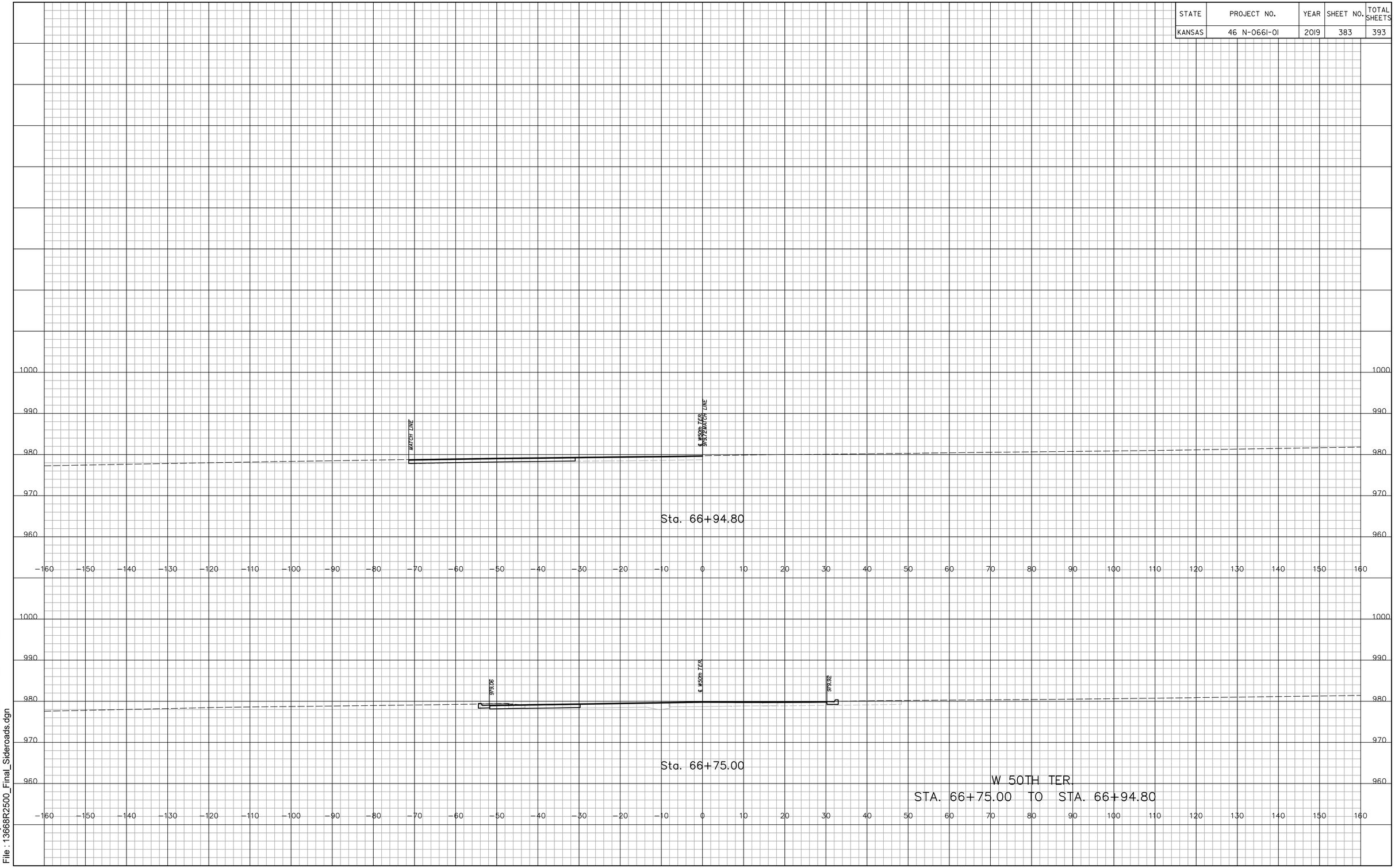



W 50TH TER.
STA. 66+00.00 TO STA. 66+50.00

Drawn By : lrosenbaum Plotted : 25-APR-2019 14:39
File : 13668R2500_Final_Sideroads.dgn

Sht.

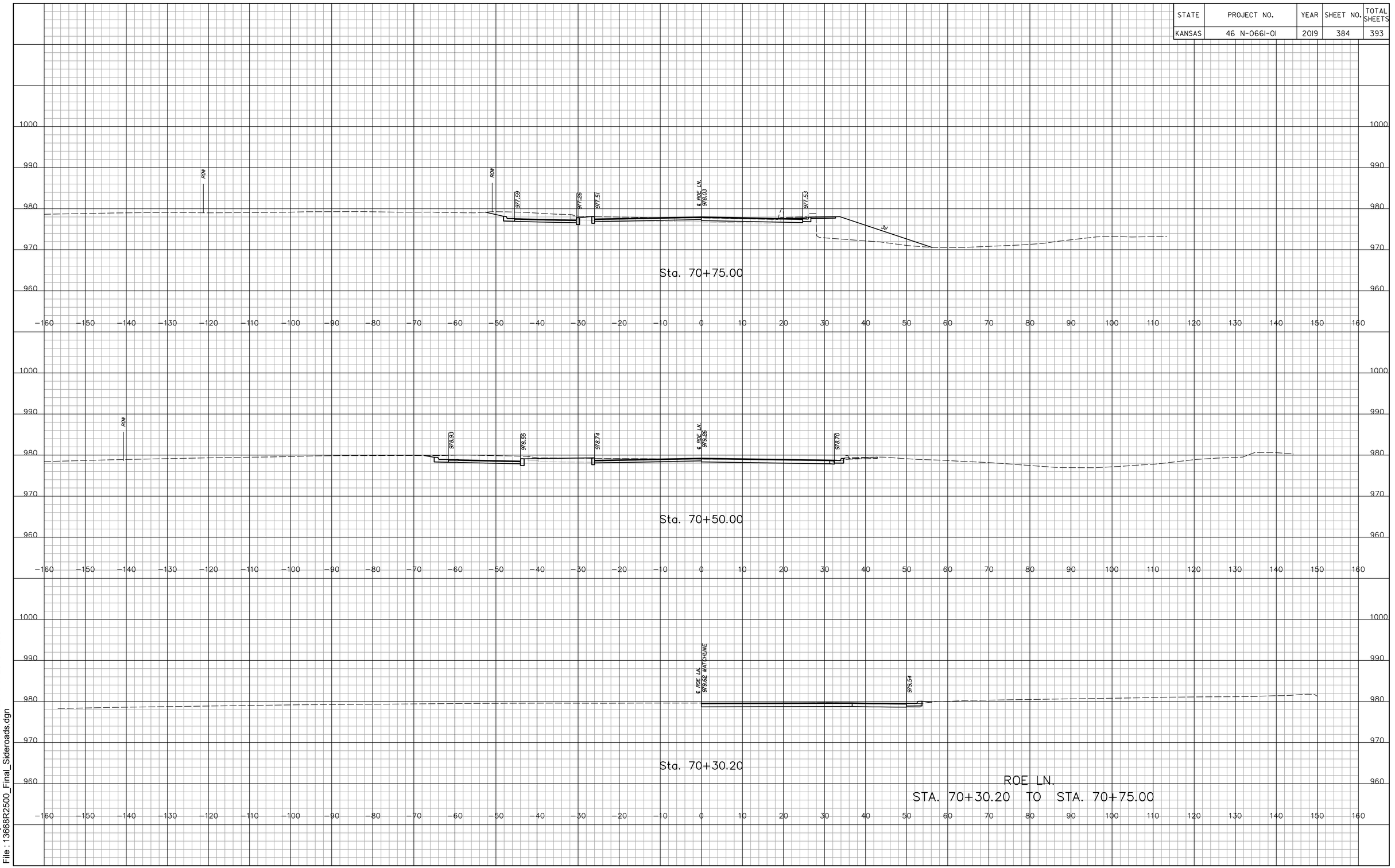
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 383 | 393 |




Plotted : 25-APR-2019 14:39
Drawn By: Irosenbaum
File : 13668R2500_Final_Sideroads.dgn

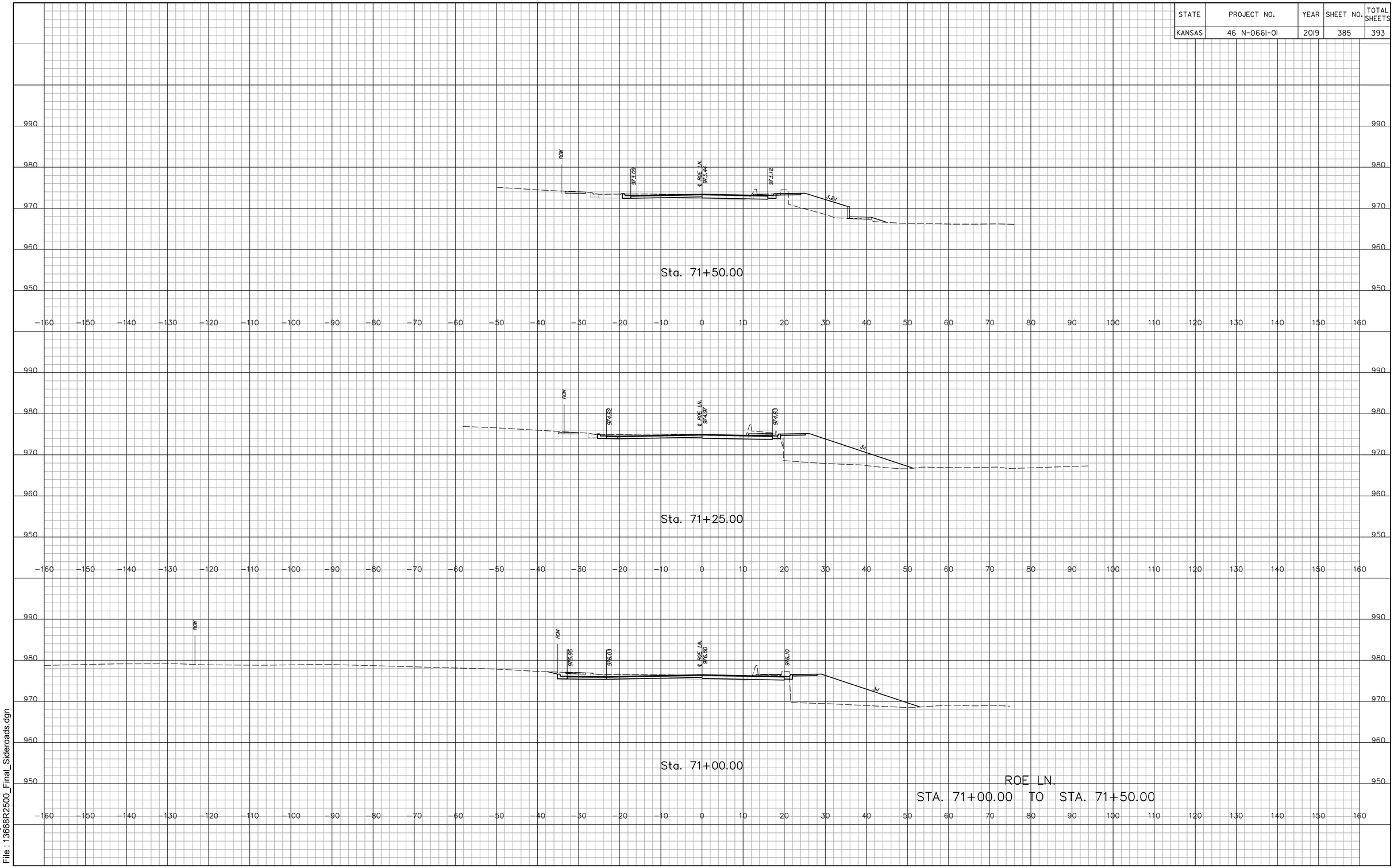
Sht.

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 384 | 393 |




Plotted : 25-APR-2019 14:39
Drawn By : lrosenbaum
File : 13668R2500_Final_Sideroads.dgn

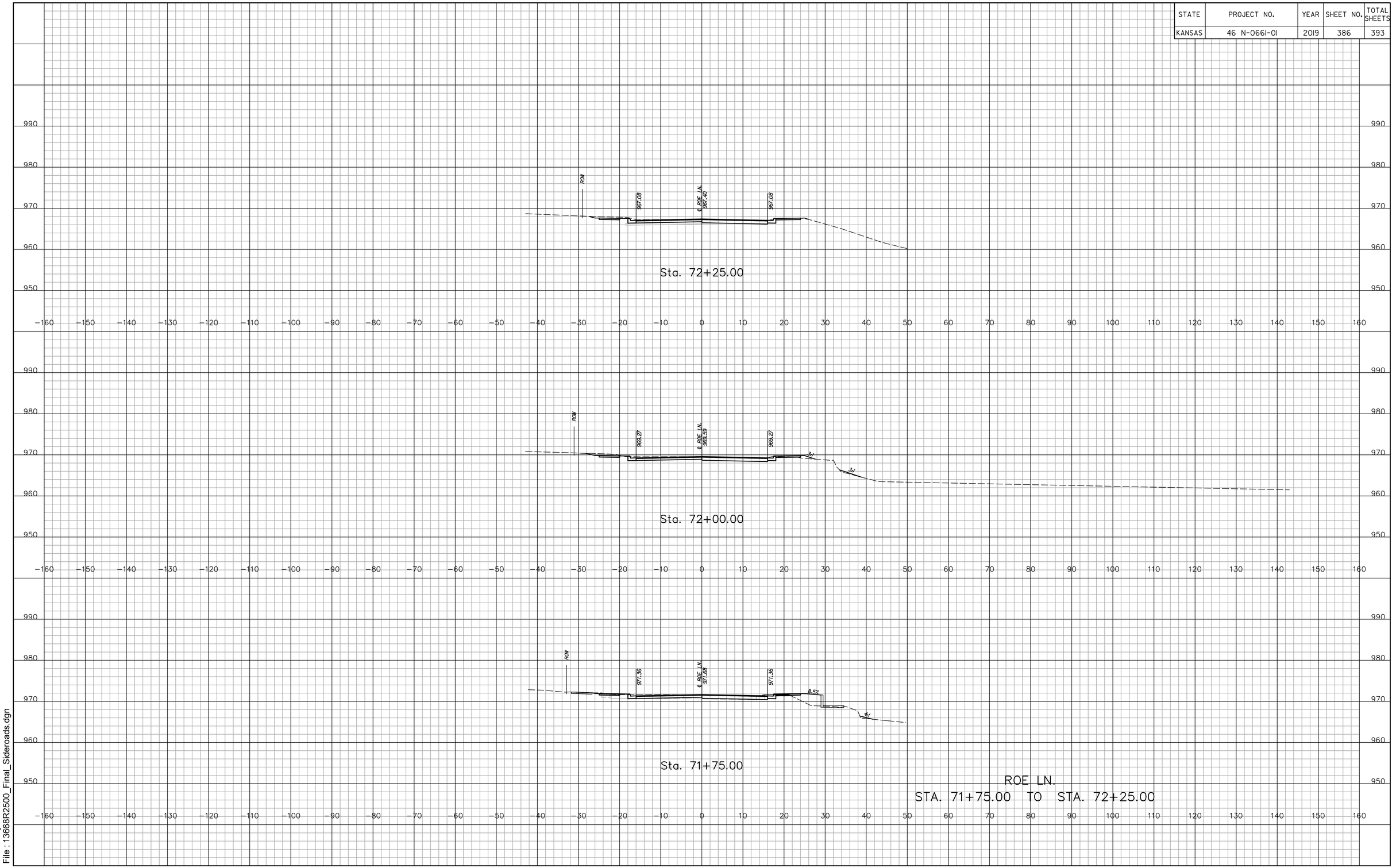
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 385 | 393 |




ROE LN.
STA. 71+00.00 TO STA. 71+50.00

Plotted : 25-APR-2019 14:39
Drawn By : lrosenbaum
File : 13668R2500_Final_Sideroads.dgn

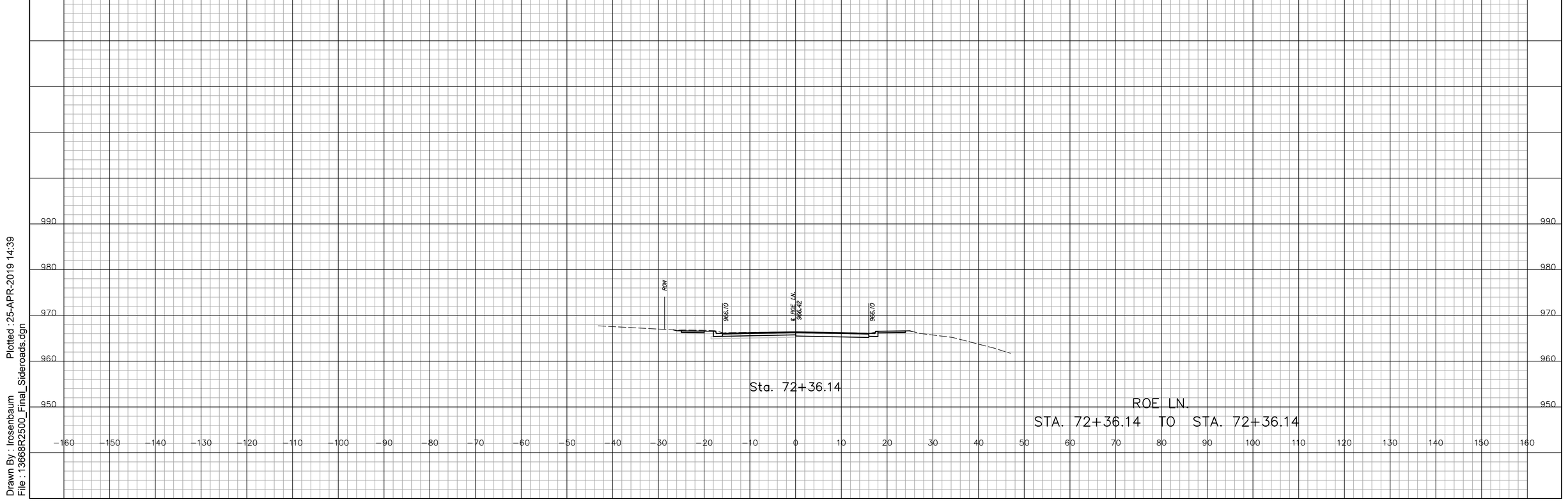
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 386 | 393 |




ROE LN.
STA. 71+75.00 TO STA. 72+25.00

Plotted : 25-APR-2019 14:39
Drawn By : lrosenbaum
File : 13668R2500_Final_Sideroads.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 387 | 393 |

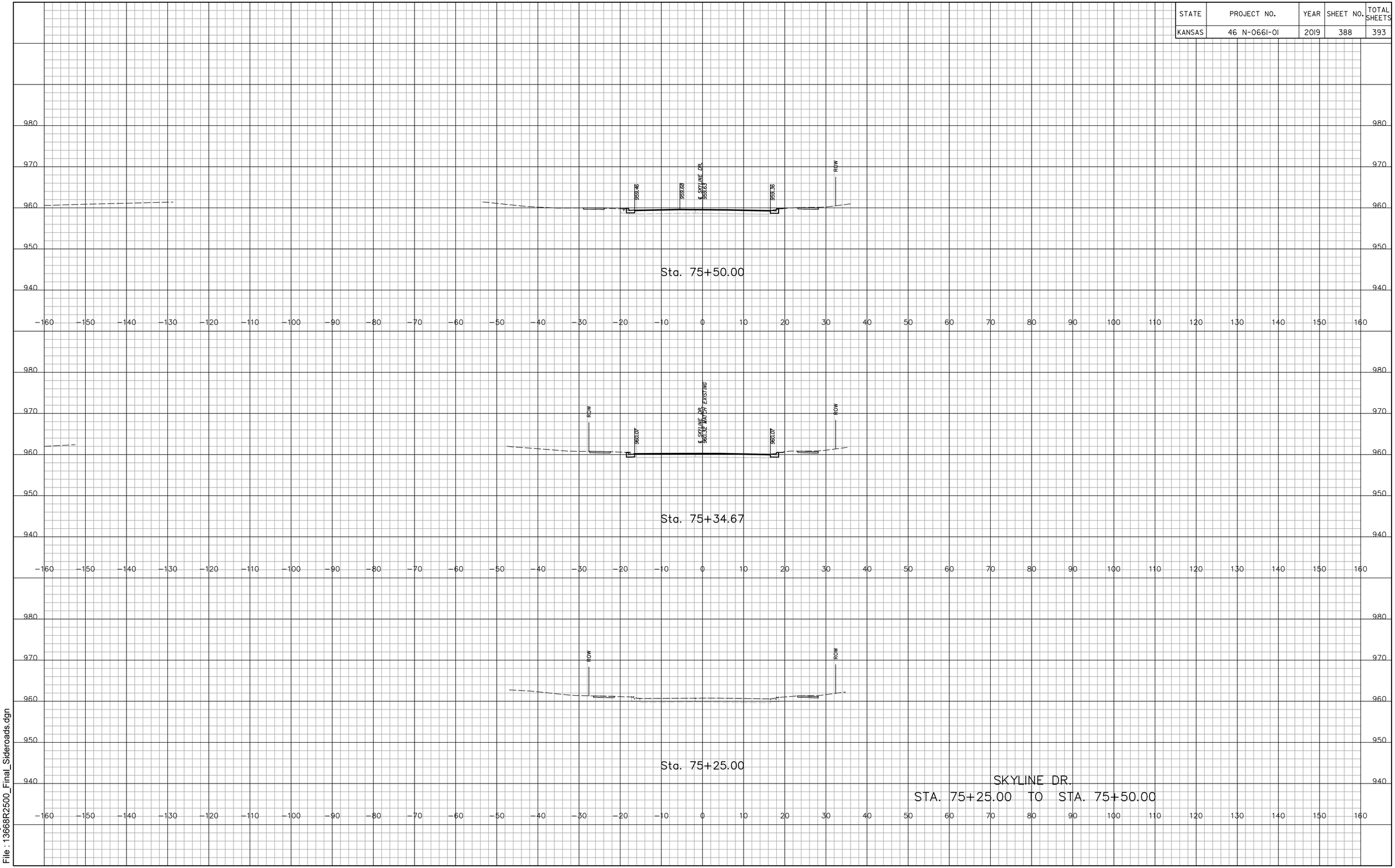



Sta. 72+36.14

ROE LN.
STA. 72+36.14 TO STA. 72+36.14

Drawn By: Irosenbaum Plotted: 25-APR-2019 14:39
File: 13668R2500_Final_Sideroads.dgn

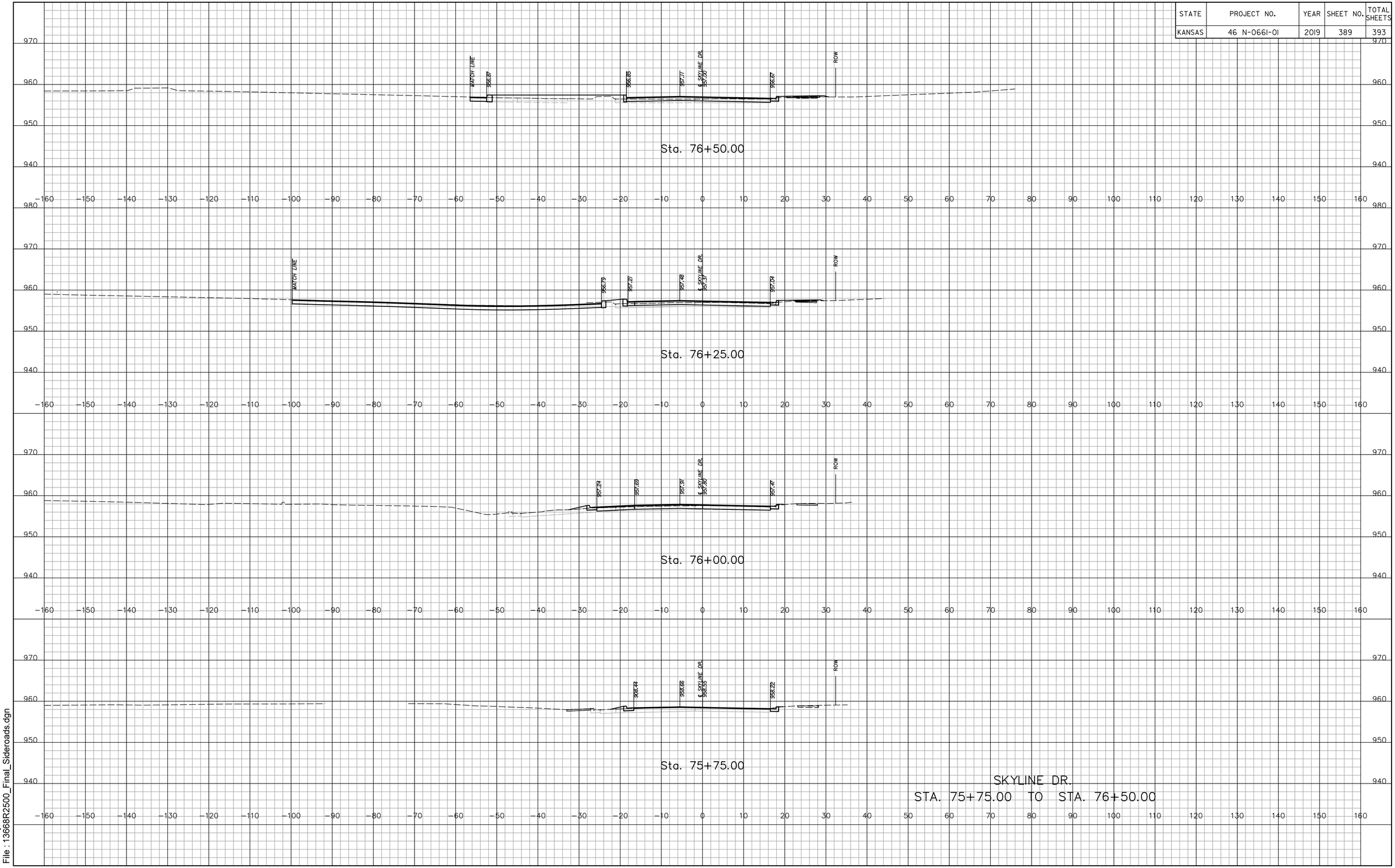
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 388 | 393 |




SKYLINE DR.
STA. 75+25.00 TO STA. 75+50.00

Drawn By : lrosenbaum Plotted : 25-APR-2019 14:58
File : 13668R2500_Final_Sideroads.dgn

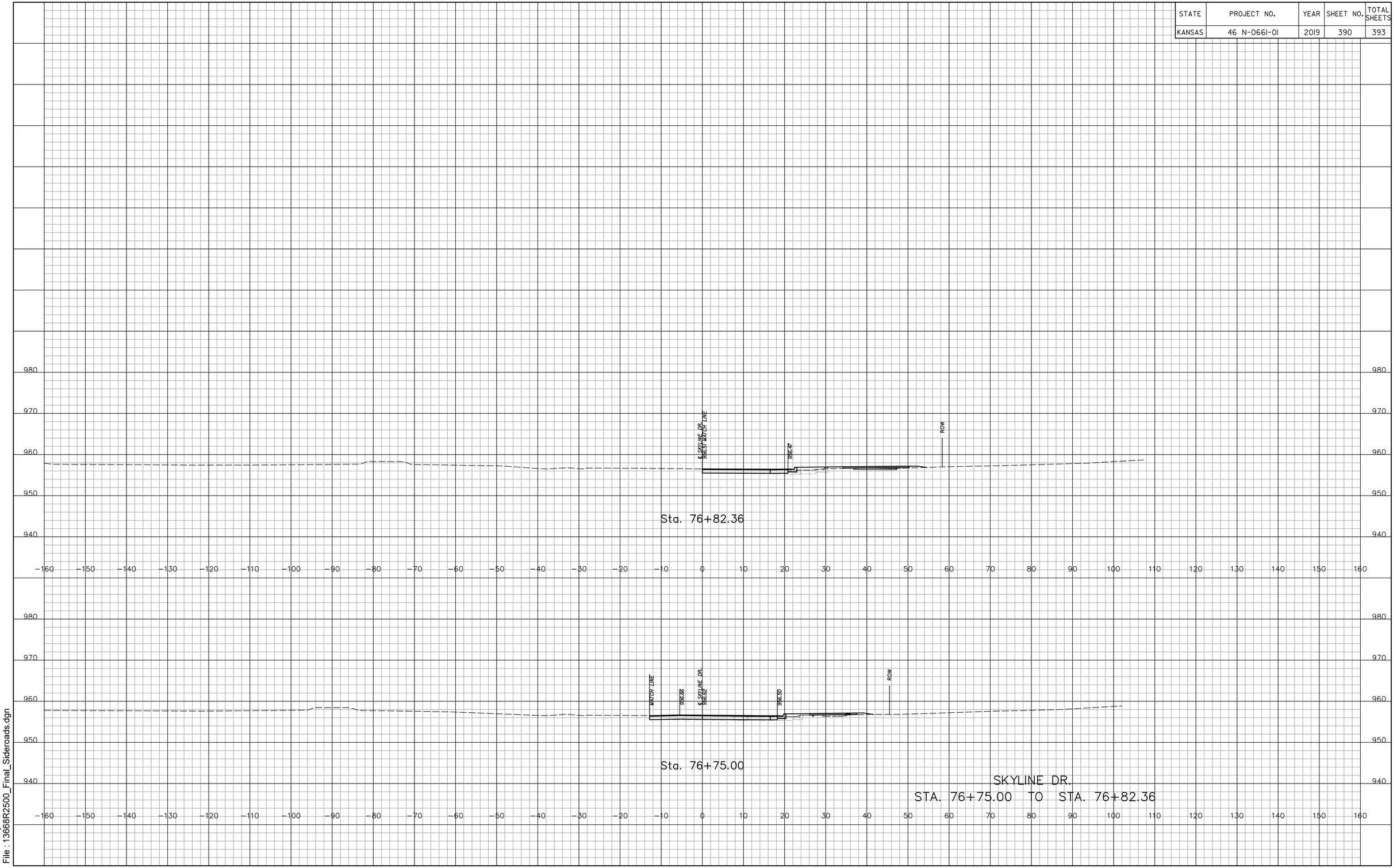
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 389 | 393 |




SKYLINE DR.
STA. 75+75.00 TO STA. 76+50.00

Drawn By: Irosenbaum Plotted: 25-APR-2019 14:58
File: 13668R2500_Final_Sideroads.dgn

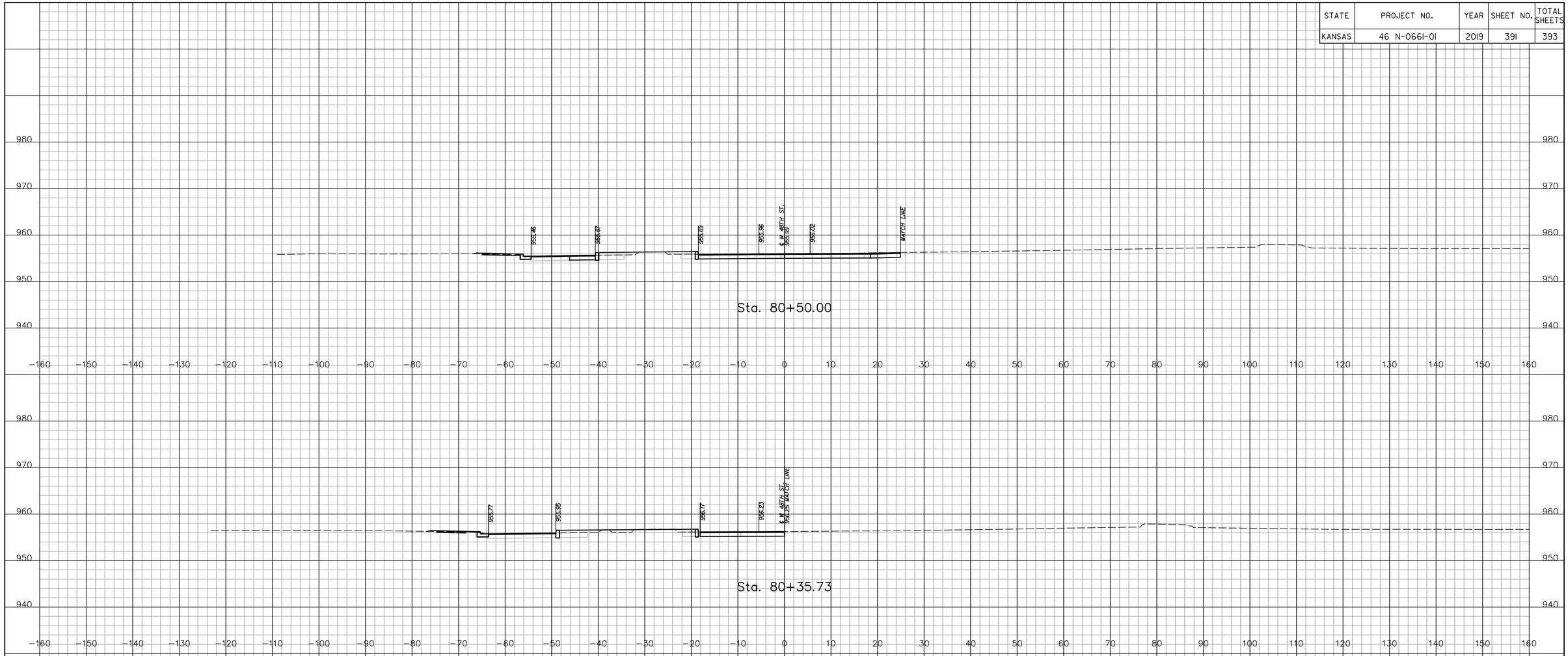
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 390 | 393 |




SKYLINE DR.
STA. 76+75.00 TO STA. 76+82.36

Plotted : 25-APR-2019 14:58
Drawn By : lrosenbaum
File : 13668R2500_Final_Sideroads.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 391 | 393 |




Sta. 80+50.00




Sta. 80+35.73

W 48TH ST.

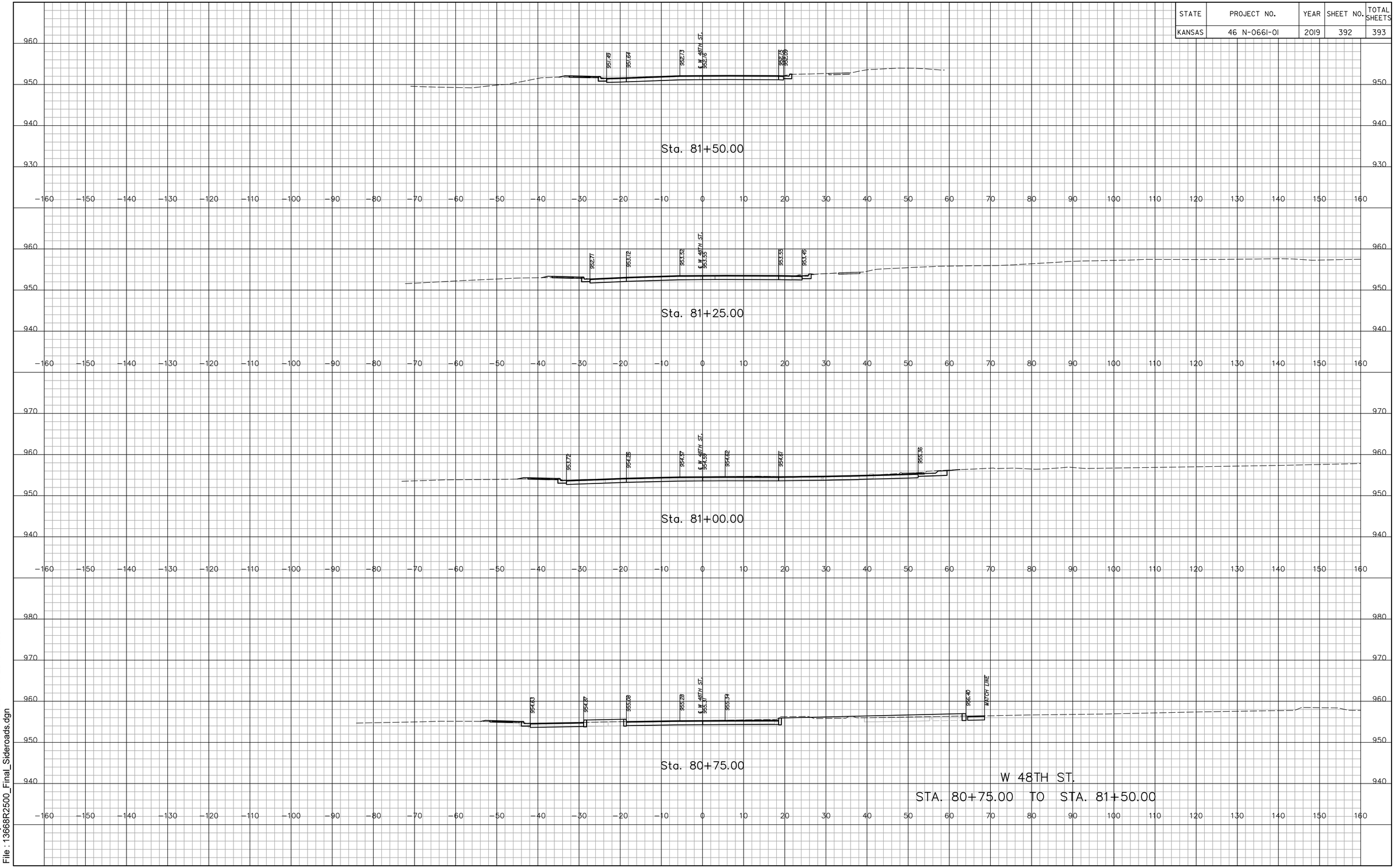
STA. 80+25.00 TO STA. 80+50.00

Plotted : 25-APR-2019 14:39

Drawn By : lrosenbaum

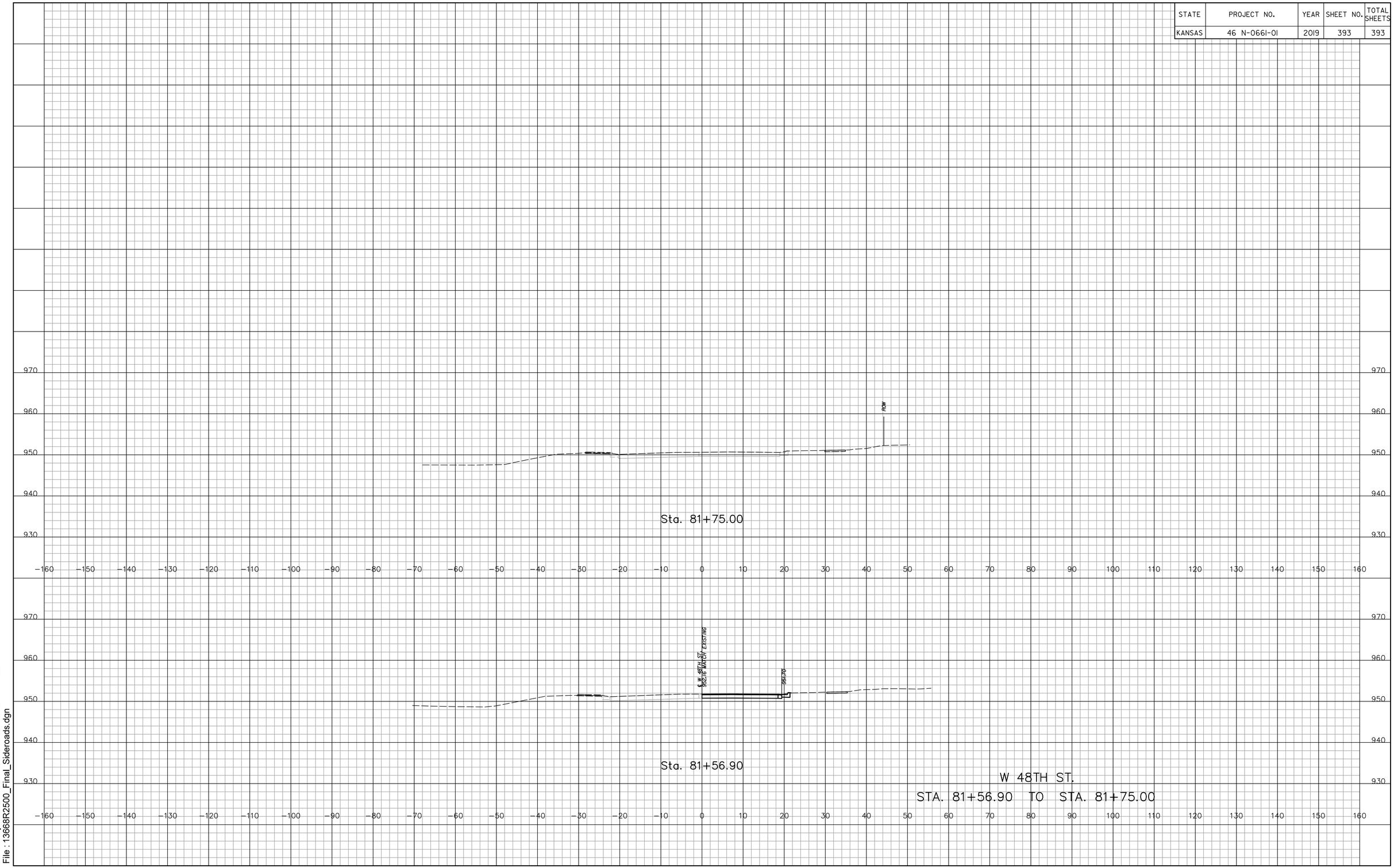
File : 13668R2500_Final_Sideroads.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 392 | 393 |




Drawn By: Irosenbaum Plotted :25-APR-2019 14:39
File : 13668R2500_Final_Sideroads.dgn

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 46 N-0661-01 | 2019 | 393 | 393 |




W 48TH ST.

STA. 81+56.90 TO STA. 81+75.00

Drawn By: Irosenbaum Plotted: 25-APR-2019 14:39
File: 13668R2500_Final_Sideroads.dgn