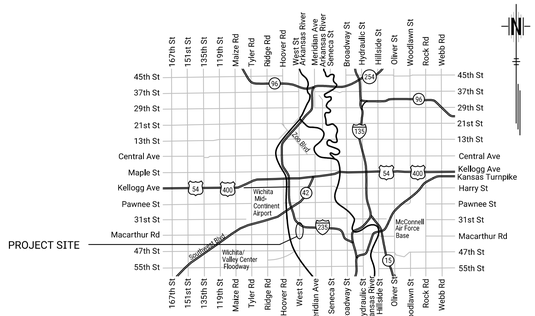
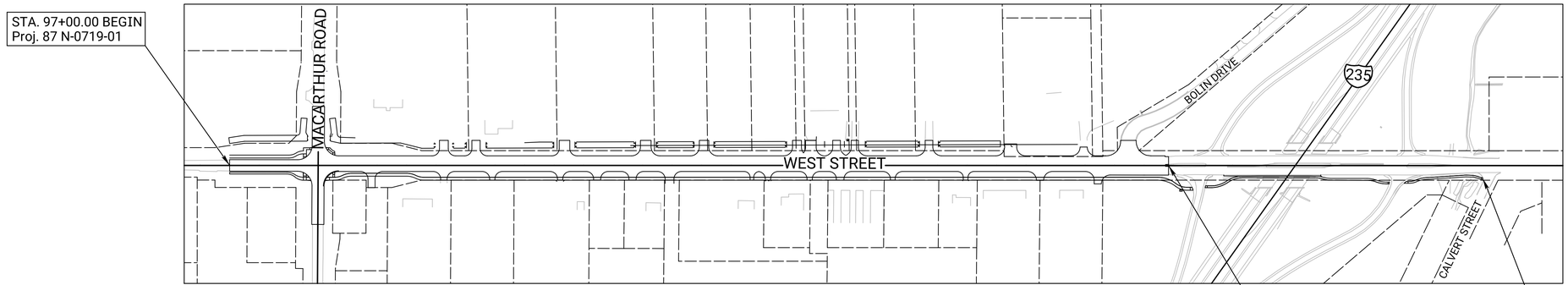
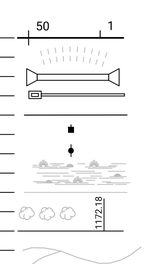






STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	1	128

F.A. Proj. No. STP-N071(901)

LOCATION MAP

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLANS FOR PROPOSED

WEST STREET
I-235 to MACARTHUR

FEDERAL AID PROJECT

FOR

THE CITY OF WICHITA,
SEDGWICK COUNTY, KANSAS

Paul Gunzelman P.E., City Engineer

KDOT Project No. 87N-0719-01
City Project No. 472-2020-085682
Munis No. E1008
Org Code: 40105921

GRADING
SURFACING
STORM SEWER
SODDING
TRAFFIC SIGNALS
SIGNING & PAVEMENT MARKING

INDEX OF SHEETS

DATE	BY

SURVEY
CADD TECHNICIAN
DESIGNERS
SQUAD

FINAL PLANS
October 2024

DESIGN DATA

ADT (2016)	9,600
ADT (2036)	11,800
DHV	960
D	66/34
T	8%
V	40 MPH
C of A	Partial
Clear Zone	6'

Gross Length of Project	3182.76 ft.
Exceptions	0.00 ft.
Additions	0.00 ft.
Net Length of Project	3182.76 ft.
Net Length of Bridges	0.00 ft.
Net Length of Road	3182.76 ft.

CONVENTIONAL SIGNS

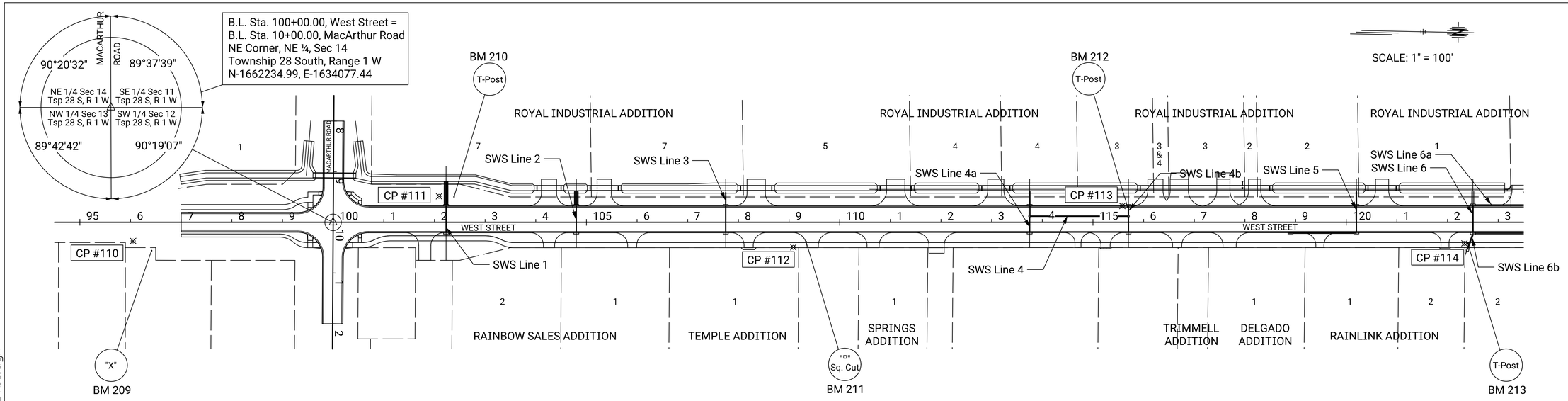
COUNTY LINE
CITY LIMITS
STATE OR NATIONAL LINE
TOWNSHIP, SECTION or GRANT LINE
PROPERTY LINE ℙ
HIGHWAY FENCE
EXISTING FENCE
GUARDRAIL
CONSTRUCTION LIMITS
RIGHT OF WAY LINE
TRAVELED WAY
RAILROADS
CENTER LINE OF PROJECT 50 1
TERRACE
CULVERTS
DROP INLET & STORM SEWER
ACCESS CONTROL
POWER POLE
TELEPHONE POLE
MARSH
HEDGE
TREES
PROFILE ELEVATION 1172.18
STREAM or CREEK

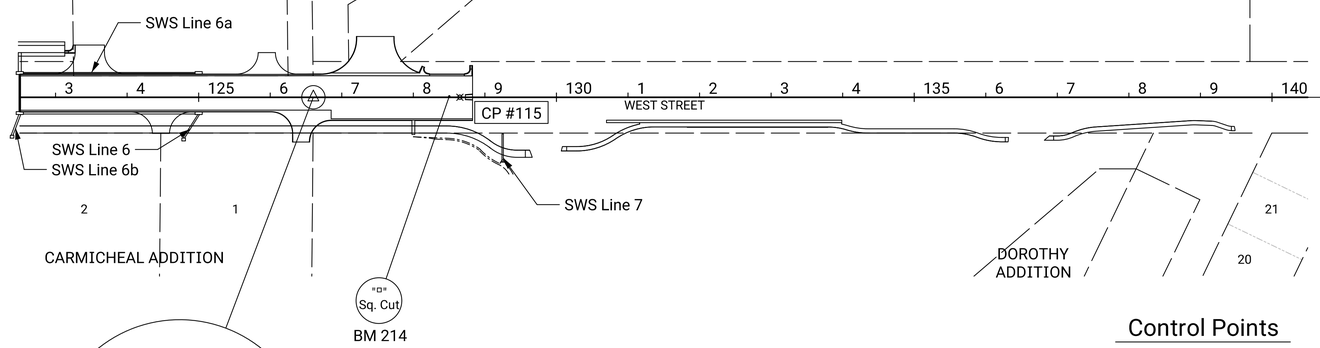
TYLER PAUL VOTH
17974
10/30/24

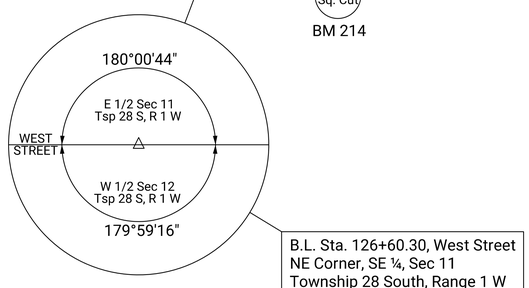
PLANS PREPARED BY :
wsp
Wichita, Kansas

APPROVED :	
Paul Gunzelman	
Paul Gunzelman P.E., City Engineer	
CITY OF WICHITA, KANSAS	
DATE:	Oct. 30, 2024

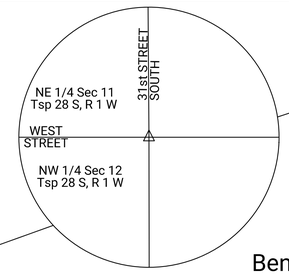
Plotted by : USTV690349 29-OCT-2024 16:04
File : 30901193TSHT.dgn







B.L. Sta. 126+60.30, West Street
NE Corner, SE ¼, Sec 11
Township 28 South, Range 1 W
N-1664894.78, E-1634025.47



B.L. Sta. 152+84.61, West Street
NE Corner, NE ¼, Sec 11
Township 28 South, Range 1 W
N-1667518.60, E-1633974.76

Control Points

CP #110 - ½"Rebar with PEC C.P. Cap, south side of gravel drive to Evergy Substation.
N-1661840.9687, E-1634121.7963
B.L. Sta. 96+05.21, 36.86' Rt.
14.00' W. to the east edge of West Street
20.50 N. to the Centerline of a gravel drive
13.9' S. to the north face of a power pole

CP #111 - ½"Rebar with Schwab-Eaton C.P. Cap
B.L. Sta. 102+09.01, 51.36' Lt.
N-1662442.9499 E-1634022.0135,
24.4' E. to the west edge of West Street
68.8' S. to the Centerline of a concrete drive
11.5' N. to the south face of a power pole

CP #112 - ½"Rebar with Schwab-Eaton C.P. Cap
B.L. Sta. 109+08.43, 49.31' Rt.
N-1663144.2100, E-1634108.9981
32.7' W. to the east edge of West Street
39.2' N. to the Centerline of the north entrance to Phat An Temple
8.0' N. to the south face of a power pole

CP #113 - ½"Rebar with Schwab-Eaton C.P. Cap
B.L. Sta. 115+58.05, 32.12' Lt.
N-1663792.1095, E-1634014.8960
22.5' E. to the west edge of West Street
70.0' N, to the Centerline of a Gravel Drive
9.9' N. to the south face of a power pole

CP #114 - ½"Rebar with Schwab-Eaton C.P. Cap
B.L. Sta. 122+33.22, 41.61' Rt.
N-1664468.5951, E-1634075.4166
29.3' W. to the east edge of West Street
39.3' S. to the Centerline of an asphalt drive
11.5' NE. to the southwest face of power pole

CP #115 - ½"Rebar with Schwab-Eaton C.P. Cap
B.L. Sta. 128+65.00, 0.00' Lt.
N-1665099.4433, E-1634021.5384
15.5' S. to the south end of the island
2.4' W. to the back of curb of the island
2.5' E. to the back of curb of the island
In line with the Centerline of West Street

Benchmarks

BM 209 - Punched "X"on the north rim of a KG&E manhole on the north side of the drive to the Evergy Substation, 35' east of the east side of West Street
B.L. Sta. 96+41.55, 56' Rt.
Elev. = 1285.91(NAVD 88)

BM 210 - T-Post flush with the ground 250' north of MacArthur Road, 24.5' west of the west edge of West Street
B.L. Sta. 102+38.72, 50.22' Lt.
Elev. = 1287.98 (NAVD 88)

BM 211 - Chisled "□"on top of the south curb of the north entrance to Phat An Temple on the east side of West Street
B.L. Sta. 109+33.74, 38.23' Rt.
Elev. = 1288.87 (NAVD 88)

BM 212 - T-Post flush with the ground 59' south of the entrance to Professional Cargo Service (PCS), 24.6' west of the west edge of West Street.
B.L. Sta. 115+68.49, 30.23' Lt.
Elev. = 1288.76 (NAVD 88)

BM 213 - T-Post flush with the ground 45.4' north of an asphalt drive, 29.2' east of the east edge of West Street, 10' west of a power pole.
B.L. Sta. 122+39.98, 41.22' Rt.
Elev. = 1286.85 (NAVD 88)

BM 214 - Chisled "□"on the west end of the south bullnose of the island south of the east bound I-235 Ramp.
B.L. Sta. 128+50.25, 1.47' Lt.
Elev. = 1288.54 (NAVD 88)

CITY OF WICHITA

wsp

WEST STREET - I-235 TO MACARTHUR
PROJECT KEYSHEET

NO.	DATE	DESCRIPTION
		REVISIONS

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
2
SHEET 2 OF 128

GENERAL NOTES

1. Traffic shall be carried throughout construction, as described in the proposed construction sequencing.

2. Utility service lines, poles, valve boxes, meters et cetera are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

3. A saw cut of at least one-half the depth of existing surface courses or one-fourth the depth of the existing total pavement thickness shall be provided at locations where proposed construction abuts an existing surface course or pavement for which partial removal of that surface or pavement is required. A full depth saw cut shall be provided where required to prevent damage to existing pavement to remain. Sawed joint to facilitate removal within three (3) feet of existing joints will not be permitted and for such instances the limits shall extend to the existing joint. Such saw cuts will not be paid for directly and this cost shall be considered SUBSIDIARY to other pay items of work in the contract.

4. All project waste including any trees, rubble from miscellaneous structures, abandoned pipes, excess excavation etc. shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or Wetlands is subject to U.S. Corps. of Engineers permitting regulations. Any material buried or stockpiled beyond approved construction limits would require additional archaeological investigations unless buried in a previously approved borrow location.

5. The plans show ties to all section corners. The Contractor SHALL set a City survey monument in the required location where such section corners fall within the limits of pavement construction. Survey monuments Shall be furnished by the Contractor. The Contractor will have a licensed Land Surveyor accurately locate and install the monument at the section corner.

6. The Contractor will be required to provide a minimum advance notice of forty-eight (48) hours to utility companies prior to excavation or working adjacent to utilities. Kansas One-Call 687-2470 or 811.

7. Mailboxes within the limits of the project shall be removed and replaced by the Contractor as approved by the Engineer. Contractor SHALL be required to make satisfactory provisions for mail delivery to properties affected by this project during its construction.

8. All labor, materials and incidentals required for connections to existing structures shall not be paid for directly but shall be considered SUBSIDIARY to the individual pipe bid items.

9. All entrance and cross road pipe within the project limits shall be removed by the Contractor unless otherwise noted on the plans. Removal of such pipes shall conform to the applicable section of the Standard Specifications. Removal of entrance and crossroad pipes SHALL not be paid for directly but shall be included in the bid item "Removal of Existing Structures".

10. The use of precast concrete box culverts is required to expedite construction and minimize impacts to property access.

11. The Contractor shall be responsible for preserving shown property monuments. The Contractor will be required to re-establish any shown property monuments which are damaged or destroyed by his construction operations. Such monuments shall be re-established at the Contractor's expense, by a licensed Land Surveyor in accordance with Kansas state laws. This work will not be paid for directly, but shall be considered SUBSIDIARY to other pay items of work in the contract.

12. The Contractor shall adjust Water Valve Boxes and Fire Hydrants as directed by the Engineer at the price bid for such adjustments. The City of Wichita shall field locate water valves one time during construction when requested by the Contractor. It shall be the Contractor's responsibility to preserve such field locations during the construction process. Water valves, water valve boxes, or fire hydrants damaged during construction shall be repaired by the Contractor at his own expense. The Contractor will be responsible to operate all water valves on the project, in the presence of the Inspector, to ensure accessibility to the valves.

13. The Contractor shall give all property owners, tenants, and Home Owners' Associations of developed property adjacent to the project limits a minimum of ten (10) days advance notice prior to start of construction. Ten (10) days advance notice should also be provided prior to construction of individual entrances per location.

14. Prior to bidding the project, each bidder shall visit the site and satisfy himself of surface & subsurface conditions. Each bidder shall also fully inform himself as to the extent of the scope of work to be performed. The Contractor will not be granted additional compensation with regard to time or money for conditions which he may have been informed of during an inspection of the site.

15. Contractor shall be aware that some gas & telephone lines within the project corridor may have been abandoned in place as new lines were installed. The Contractor shall be responsible for contacting the appropriate owners to determine the status of said lines.

16. Contractors shall be aware that they will be working in close proximity of existing utilities. Any conflicts with such utilities shall be reported to the Engineer. The Contractor shall coordinate the construction of this project with relocation of any existing utilities by the utility company. No additional payment shall be made to Contractor for coordination of utility relocation.

17. Contractor shall deliver all existing traffic signal equipment to the City of Wichita. Contact Mike Armour at (316) 268-4598 to arrange delivery. All associated costs to transport the traffic signal equipment will be paid for as "Transporting Salvageable Material" Lump Sum (Non-Participating).

18. Any tree that must have branches removed shall be trimmed by approved methods consistent with standard tree trimming methods and with a sharp instrument/tool that is intended for such operations. Consult with Engineer prior to trimming. Knocking branches off with a backhoe or other similar machine is not acceptable. This work shall be included in the bid item "Site Clearing."

19. The Contractor shall not start work on the Project until the Project Inspector is assigned and is present on site. Any work done without inspection will be required to be uncovered for inspection. Staking and inspection for this project will be the responsibility of the City of Wichita.

20. The Contractor shall comply with all applicable safety regulations and the City of Wichita Specifications and Standards.

21. General construction sequencing shall take into account positive drainage at all times.

22. When beginning or ending full height curb, the height of the curb shall transition in a minimum of 5.00' unless otherwise shown in the plans or as directed by the Engineer.

23. Minimum Clearance is provided over existing and proposed storm sewer pipes. Contractor should take care not to damage pipes during grading and paving operations. Any damage shall be repaired or replaced at the Contractor's expense.

24. Any damage to existing facilities within temporary easements but outside of the construction limits shall be repaired or replaced in kind at the Contractor's expense.

25. Traffic Control:
A minimum of one lane of traffic is to be maintained northbound on West Street throughout construction. MacArthur Road and Bolin Drive shall have one lane of traffic in each direction at all times during the construction. No lane closures will be allowed on the I-235 ramps. Contractor shall provide, erect, and maintain traffic control devices in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) as shown on the Traffic Control plans and subject to the Engineer's approval. Access to residences and businesses shall be maintained at all times.

UTILITIES

Cable TV

Cox Communications
901 George Washington Blvd.
Wichita, KS. 67211
Attn: Matt Bortz
Ph: 620-272-2081

Communications$_1$

AT&T
154 N. Broadway, Rm. 210
Wichita, KS. 67202-3505
Attn: Jason Edwards
Ph: 316-268-2008

Electric

Evergy (Distribution)
1900 E. Central
Wichita, KS. 67214
Attn: Shane Price
Ph: 316-261-6315

Electric

Evergy (Transmission)
Attn: Richard Goode
Ph: 785-215-0888

Gas$_1$

Kansas Gas Service
1021 E. 26th St. N.
Wichita, KS. 67219
Attn: Jordan Robl
Ph: 316-831-5696

Gas$_2$

Black Hills Energy
2300 N. Hoover Rd.
Wichita, KS. 67205
Attn: Chris Kelley
Ph: 316-941-1633

Gas$_3$

Conoco Phillips
2400 E. 37th Street North
Wichita, KS 67219
Attn: Robert McKenzie
Ph: 316-821-2260

Storm Water Sewer

City of Wichita
455 N Main St.
Wichita, KS. 67202
Attn: Kelly Fleming
Ph: 316-268-4326

Traffic Signal

City of Wichita
455 N Main St.
Wichita, KS. 67202
Attn: Mike Armour
Ph: 316-268-4598

Water

City of Wichita
455 N Main St.
Wichita, KS. 67202
Attn: Greg Lolley
Ph: 316-268-4334

CITY OF WICHITA

WSP

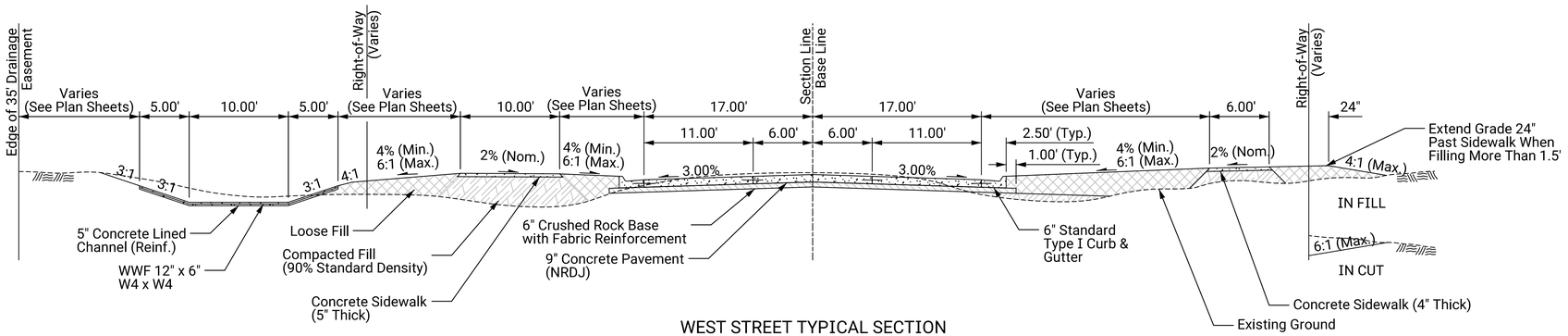
WEST STREET - I-235 TO MACARTHUR

GENERAL NOTES

NO.	DATE	DESCRIPTION
		REVISIONS

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

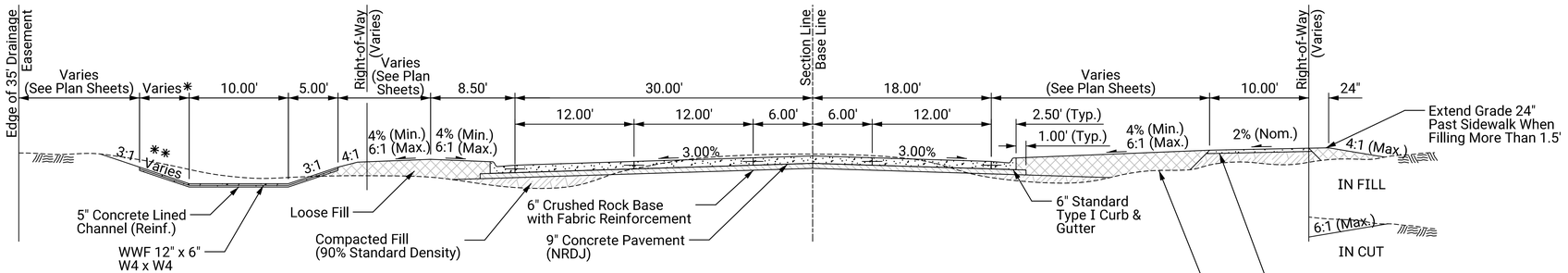
SHEET NO
3
SHEET 3 OF 128



WEST STREET TYPICAL SECTION

Sta. 97+00.00 to Sta. 99+04.20

The Fabric Reinforcement for the Crushed Rock Base shall conform to the City of Wichita's Approved Materials List.

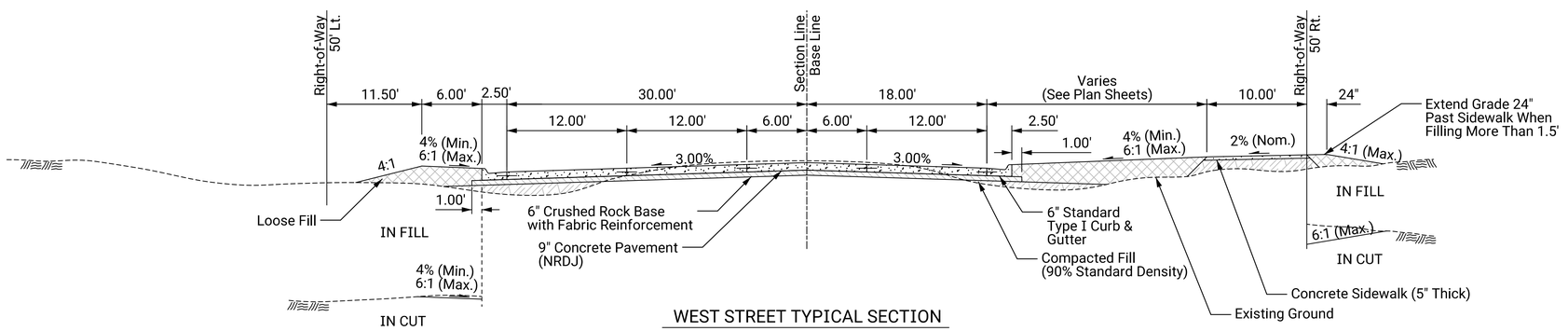


WEST STREET TYPICAL SECTION

Sta. 100+94.53 to Sta. 123+12.88

* - Varies from 5.00' to 3.00' Between Sta. 100+70.53 to 101+20.53
3.00' from Sta. 101+20.53 to 107+00.00
Varies from 3.00' to 5.00' Between Sta. 107+00.00 to Sta. 107+50.00

** - Varies from 3:1 to 1:1 Between Sta. 100+70.53 to 101+20.53
1:1 from Sta. 101+20.53 to 107+00.00
Varies from 1:1 to 3:1 Between Sta. 107+00.00 to Sta. 107+50.00



WEST STREET TYPICAL SECTION

Sta. 123+12.88 to Sta. 126+26.26

WEST STREET - I-235 TO MACARTHUR

WEST STREET TYPICAL SECTIONS

REVISIONS							DESCRIPTION	DATE	NO.

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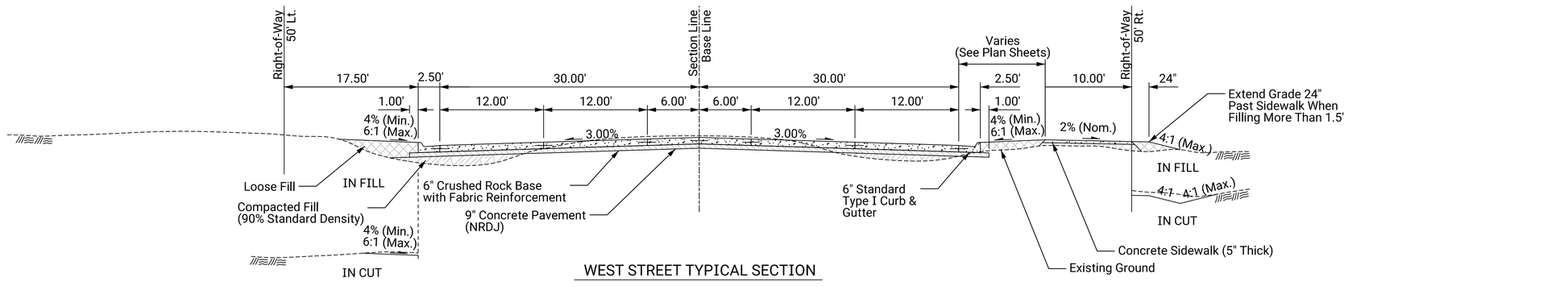
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO 4

SHEET 4 OF 128



WEST STREET TYPICAL SECTION

Sta. 126+26.26 to Sta. 128+82.76

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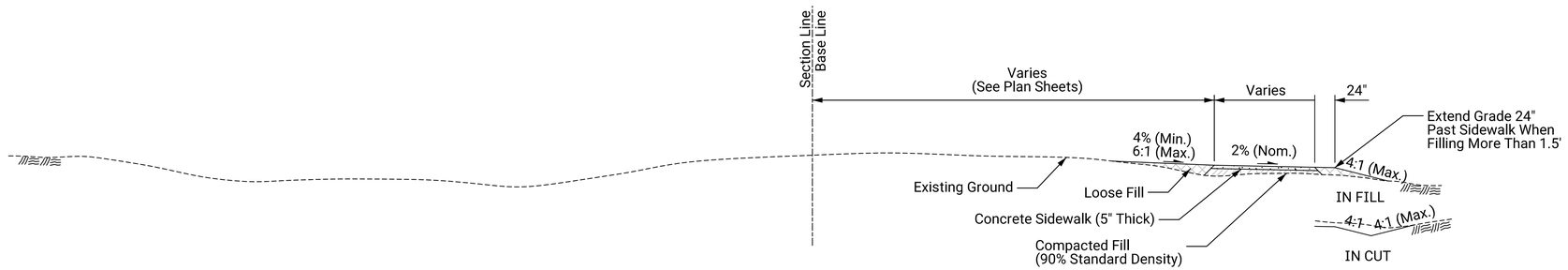
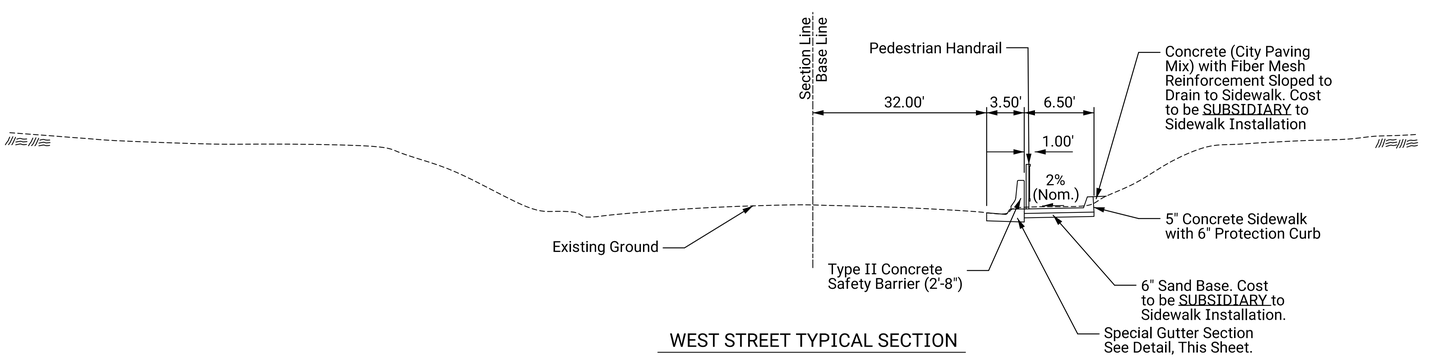


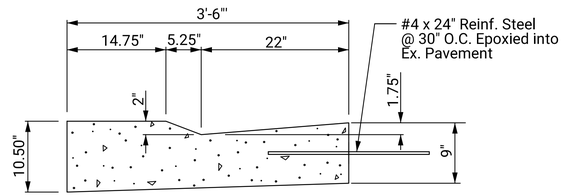
WEST STREET TYPICAL SECTION

Sta. 128+82.76 to Sta. 130+70.00
Sta. 133+98.77 to Sta. 139+47.95



WEST STREET TYPICAL SECTION

Sta. 130+70.00 to Sta. 133+98.77



SPECIAL GUTTER SECTION (3.5' WIDTH)

Concrete Pavement Section

Cost to be SUBSIDIARY to Type II Concrete Safety Barrier

WEST STREET - I-235 TO MACARTHUR

WEST STREET TYPICAL SECTIONS

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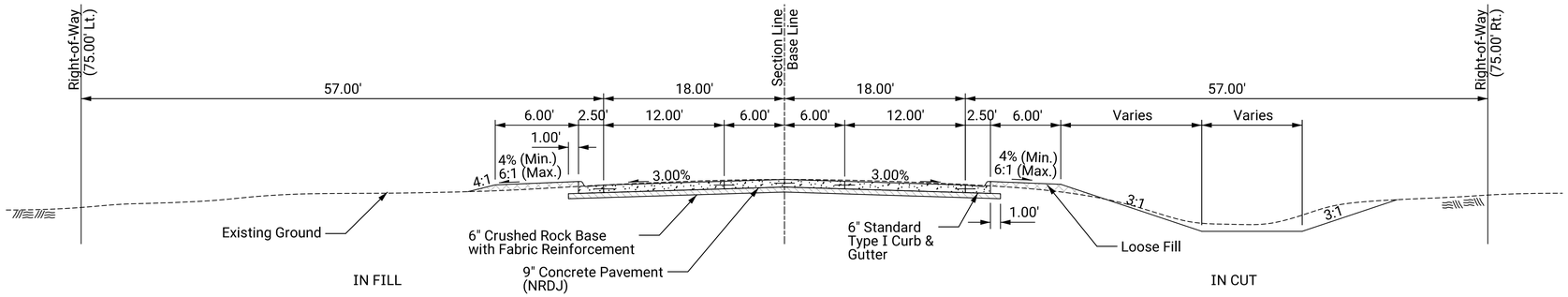
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

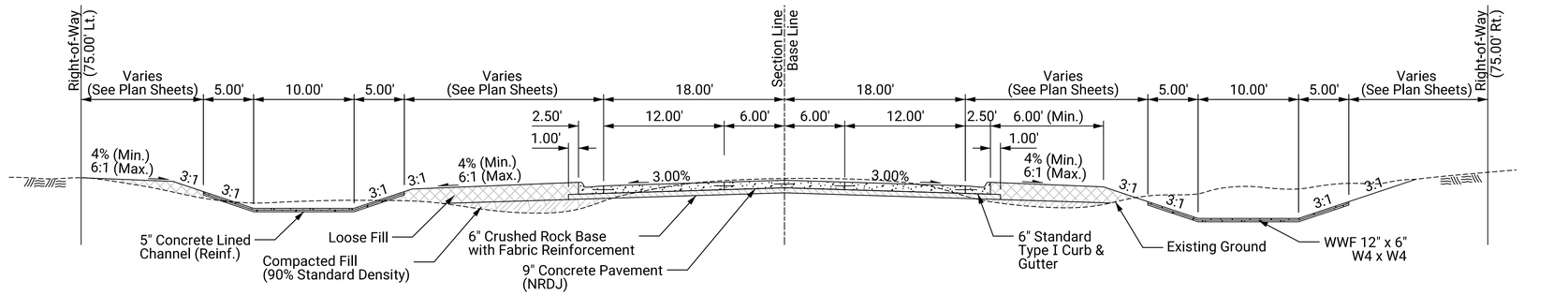
SHEET NO
5
SHEET 5 OF 128



MACARTHUR ROAD TYPICAL SECTION

Sta. 8+00.00 to Sta. 8+40.00
Sta. 10+89.98 to Sta. 12+00.00

The Fabric Reinforcement for the Crushed Rock Base shall conform to the City of Wichita's Approved Materials List.



MACARTHUR ROAD TYPICAL SECTION

Sta. 8+40.00 to Sta. 8+98.17

CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

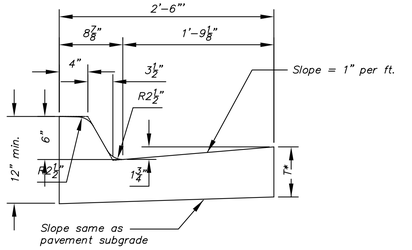
MACARTHUR ROAD TYPICAL SECTIONS

NO.	DATE	DESCRIPTION
		REVISIONS

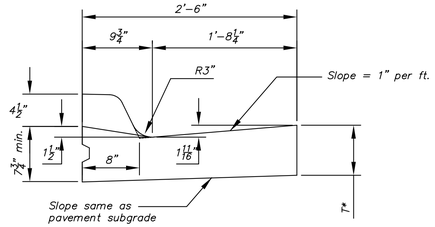
PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
6
SHEET 6 OF 128

TYPE 1
(Arterial curb)

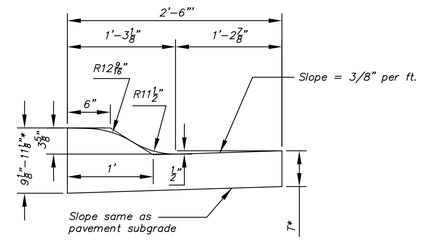


Combined Curb & Gutter (6")

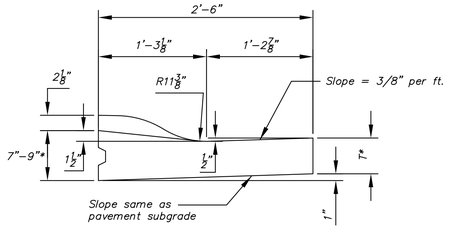


Combined Curb & Gutter (1 1/2")

TYPE 2
(Roll curb)

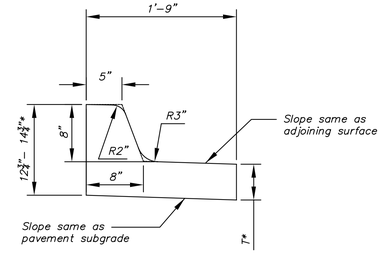


Combined Curb & Gutter (3 5/8")

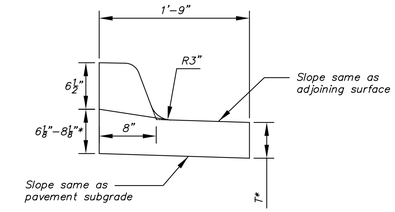


Combined Curb & Gutter (1 1/2")

TYPE 3
(Median curb)

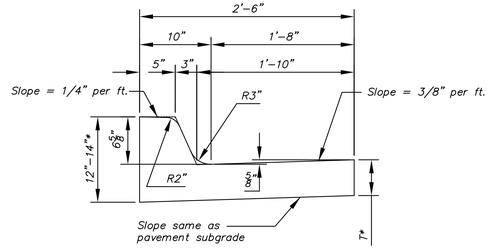


Combined Curb & Gutter (8")

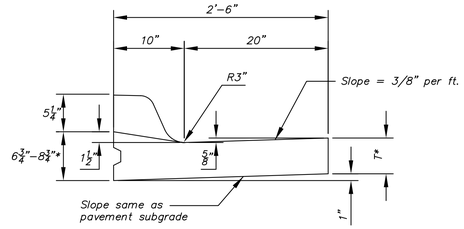


Combined Curb & Gutter (1 1/2")

TYPE 4
(Residential curb)

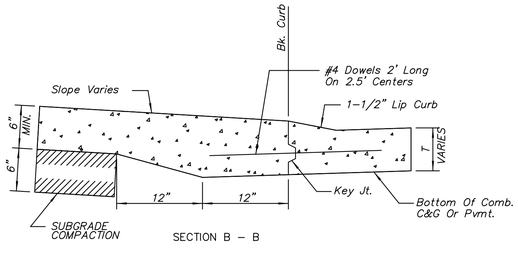


Combined Curb & Gutter (6 5/8")



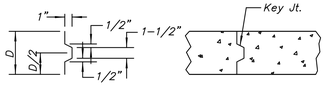
Combined Curb & Gutter (1 1/2")

T* = Thickness of curb to adjust with pavement thickness

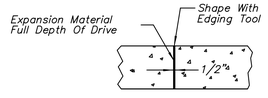


SECTION B – B

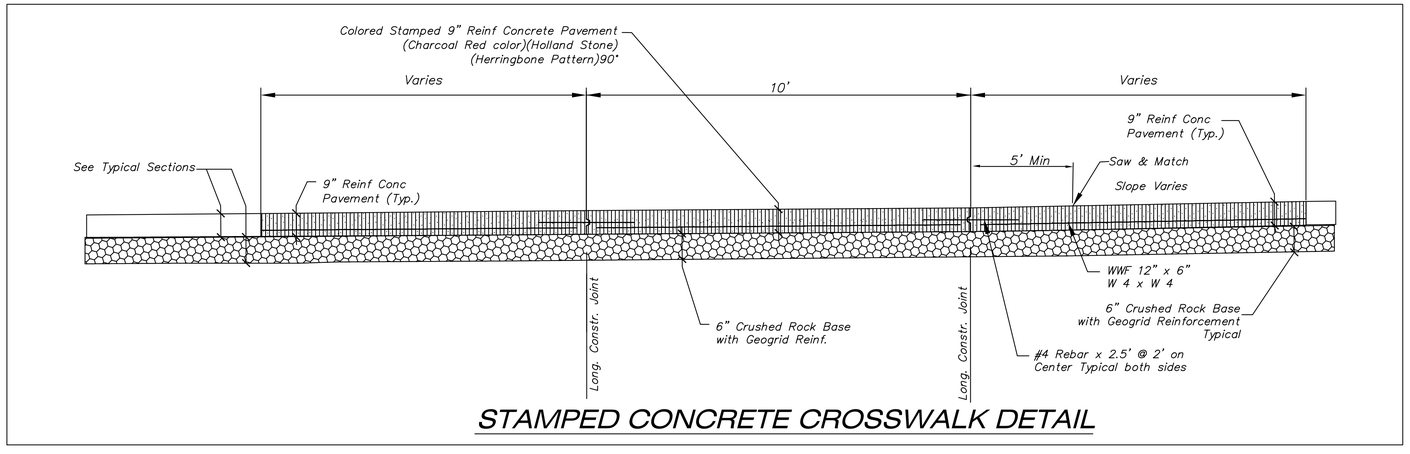
BACK OF CURB DETAIL



ALT. LONGITUDINAL CONSTRUCTION JOINT



EXPANSION JOINT (E.J.)



STAMPED CONCRETE CROSSWALK DETAIL

GENERAL NOTES

1. Expansion (isolation) joints shall be constructed a maximum of 300' apart and at all PIs, PCs, cul–de–sac quadrants, and ends of returns.

2. Contraction joints shall be constructed a minimum of 12' apart.

3. Joint sealer shall be required at all joints on arterial and industrial streets and at intersections on residential streets.

REVISED: OCTOBER 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

CURB & GUTTER & PAVING BRICK CROSSWALK DETAILS

CITY ENGINEER
PAUL GUNZELMAN, P.E.

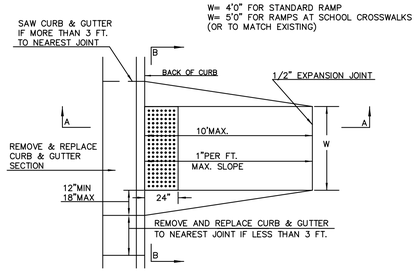
PROJECT NUMBER	OCA NUMBER	DATE

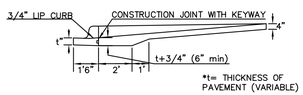
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET

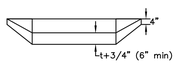
PV–101

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH COMBINED CURB & GUTTER (TYPE A)



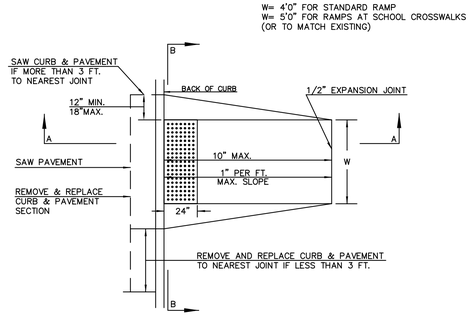


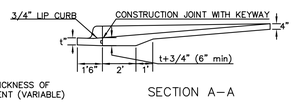
SECTION A–A



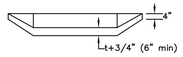
SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR CONCRETE STREETS WITH MONOLITHIC CURB (TYPE A)



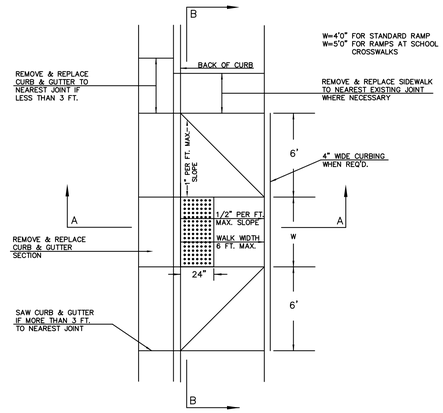


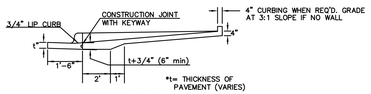
SECTION A–A



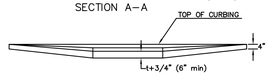
SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH COMBINED CURB & GUTTER AND FULL WALK (TYPE B)



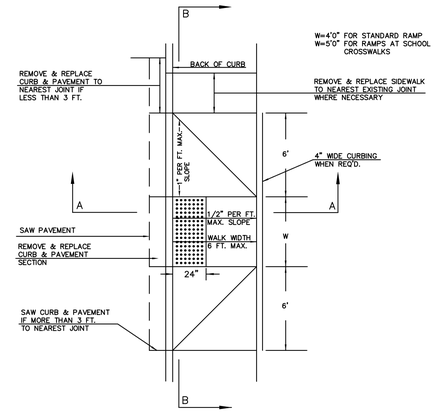


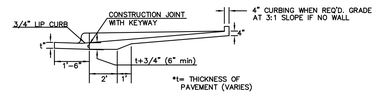
SECTION A–A



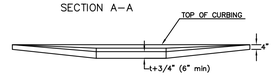
SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH MONOLITHIC CURB AND FULL WALK (TYPE B)



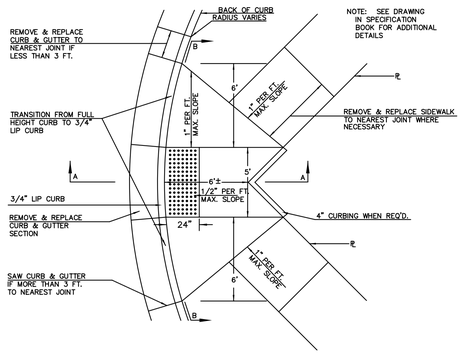


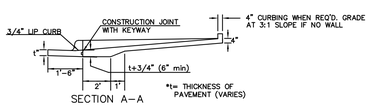
SECTION A–A



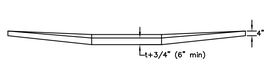
SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DEAIL FOR STREET WITH COMBINED CURB AND GUTTER ON RADIUS WITH 6'± FROM BACK OF CURB TO PROPERTY CORNER (TYPE C)



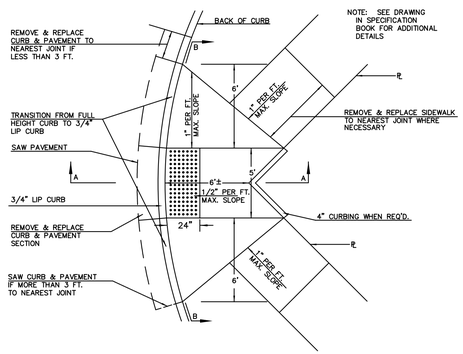


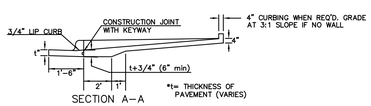
SECTION A–A



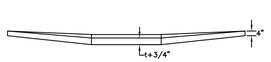
SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREET WITH MONOLITHIC CURB ON RADIUS WITH 6'± FROM BACK OF CURB TO PROPERTY CORNER (TYPE C)



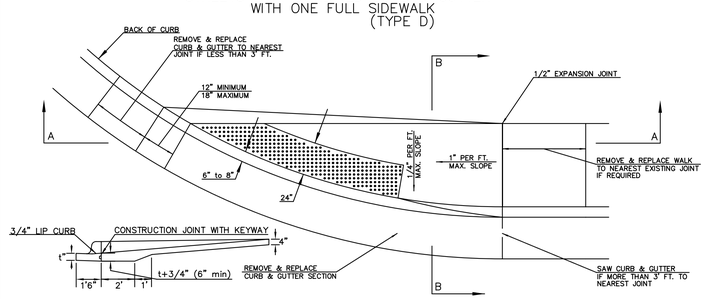


SECTION A–A

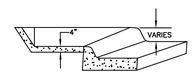


SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH COMBINED CURB & GUTTER WITH ONE FULL SIDEWALK (TYPE D)

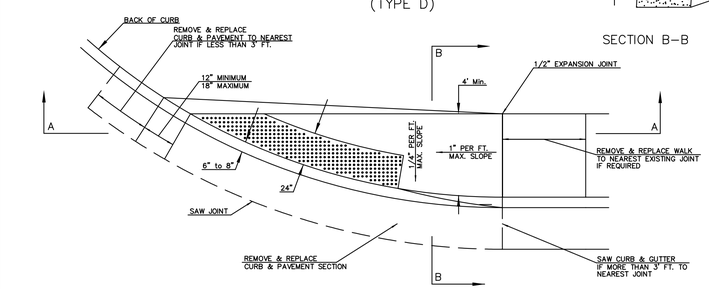


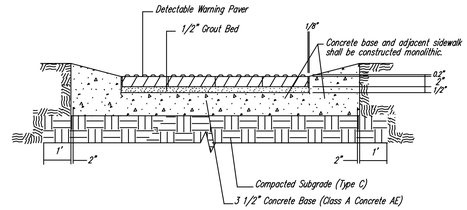
SECTION A–A



SECTION B–B

STANDARD WHEELCHAIR RAMP CONSTRUCTION DETAIL FOR STREETS WITH MONOLITHIC CURB WITH ONE FULL SIDEWALK (TYPE D)

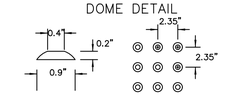




TYPICAL SECTION DETECTABLE WARNING PAVER SECTION A–A

NOTE: HANOVER DETECTABLE WARNING PAVERS (OR AN APPROVED ALTERNATE) SHALL BE USED IN ALL WHEELCHAIR RAMPS. THE 11 3/4" "RED 15" PAVER SHALL BE USED IN ALL APPLICATIONS.
HANOVER ARCHITECTURAL PRODUCTS
240 BENDER ROAD
HANOVER, PA 17331
1–717–637–0500
www.hanoverpavers.com

DOME DETAIL



CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

WHEELCHAIR RAMP DETAILS WITH DETECTABLE WARNING

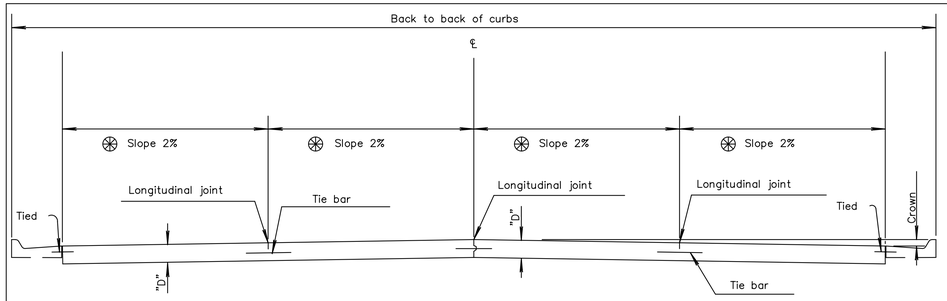
CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
		08/2013

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

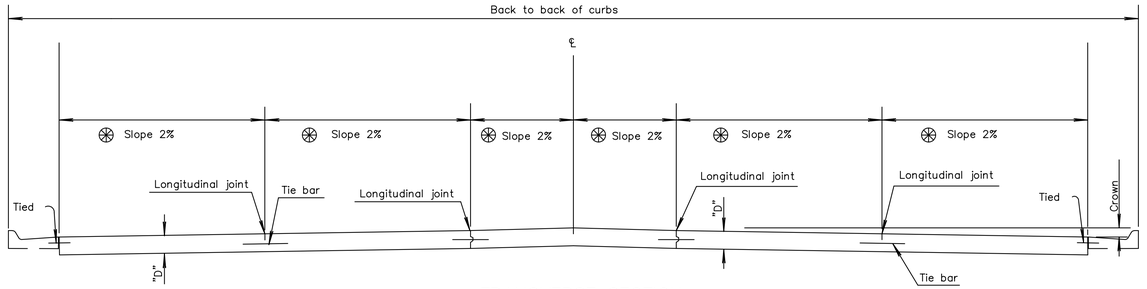
SHEET
8 of 128

CADconform Certify This File



For Curb & Gutter details
See Standard Drawing PV–101.

TRANSVERSE SECTION
(4 – LANE WITH CURB & GUTTER)



TRANSVERSE SECTION
(5 – LANE WITH CURB & GUTTER)

✠ Normal cross slopes. See Typical Section or Cross Sections for variations.

GENERAL NOTE

Epoxy coat all deformed tie bars. Patch any damage to the epoxy coating in accordance with the Standard Specifications.

Use billet steel Grade 40 reinforcing for deformed tie bars THAT require bending, may or may not be epoxy coated.

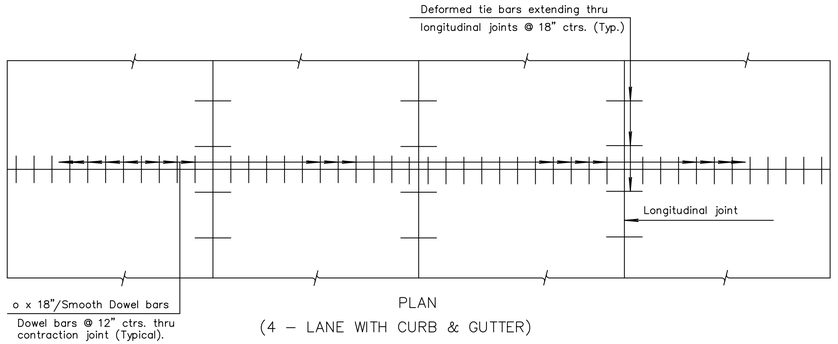
Place pressure relief joint at the end of the bridge approach pavement slab (no bars through joint). For details of pressure relief joint see KDOT Standard Drawing RD712.

Use load transfer devices as shown in details at all construction joints on mainline pavement unless otherwise noted.

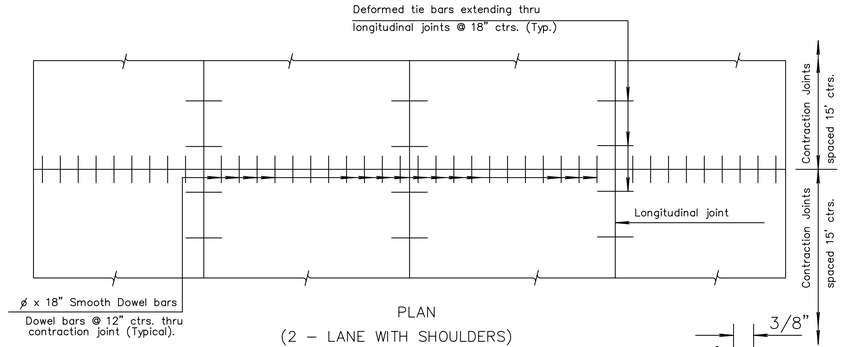
◈ Fill all sawed joints on the project in accordance with the Standard Specifications.

Shape all keyed joints similar to section of recessed form leg as shown on this sheet.

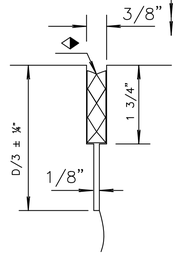
Evenly space tie bars along the length of slab with no tie bar within 12" of contraction joint. All longitudinal joints are tied.



PLAN
(4 – LANE WITH CURB & GUTTER)



PLAN
(2 – LANE WITH SHOULDERS)

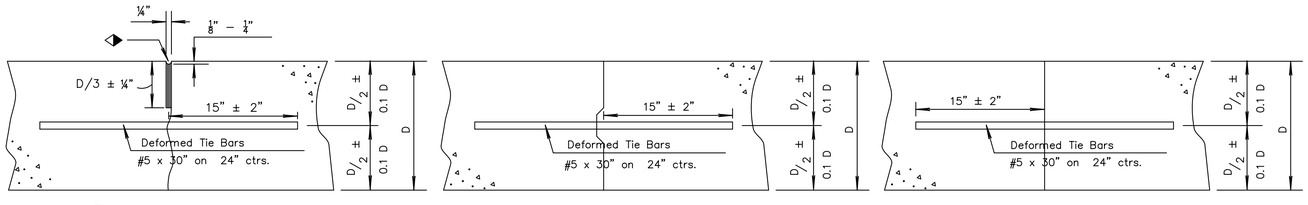


Ψ DETAIL OF SEALED CONTRACTION JOINT SAWCUT

Make an initial $\frac{1}{8}$" saw cut(D/3 ± $\frac{1}{4}$" depth); the second $\frac{3}{8}$" saw cut is a separate operation done after concrete has gained sufficient strength to avoid spalling as determined by the Engineer.

DOWEL SIZE	
D (in.)	Diameter
6 < D < 9	1"
9 ≤ D < 11	1 1/4"
D ≥ 11	1 1/2"

PAVEMENT DEPTH
D=_



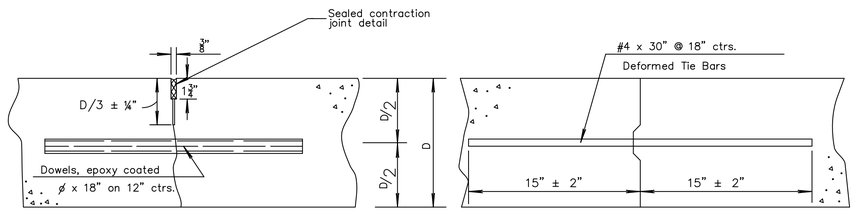
Tied Non–Keyed

Tied Keyed Construction

Tied Butt Construction

Note: For longitudinal construction joints the contractor has the option of using either the keyed or butt type. Place deformed tie bars mid–depth of the shoulder.

LONGITUDINAL JOINTS

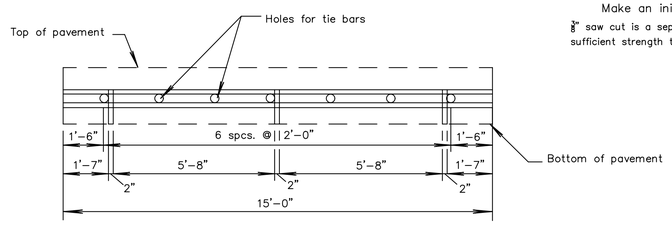


Ψ Contraction

Construction

TRANSVERSE JOINTS

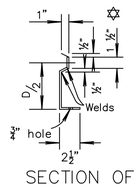
Note: Construct contraction joints at plan locations or at the Engineer's direction.
When necessary to interrupt continuous placement for a substantial length of time or at the end of a day's paving, the Contractor has the option of ending placement at a contraction joint or with a construction joint located a minimum of five (5) feet from a contraction joint. Construct either joint type by placing a header at the end of the pour or by paving past the joint location. After the concrete has hardened, saw joint and drill holes for tie bars or dowels.



METAL STRIP FOR
LONGITUDINAL CONSTRUCTION JOINT

To be used only against forms, do not extend through contraction joints. For automated placement tie bars are spaced at uniform 24" centers.

✡ Use snap–in leg or other approved design in lieu of welded leg.



SECTION OF
RECESSED
FORM LEG

REVISED: NOVEMBER 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

CONCRETE PAVEMENT DOWEL JOINTED NON-REINFORCED

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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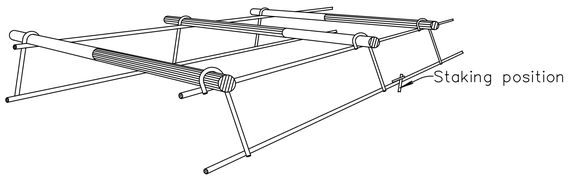
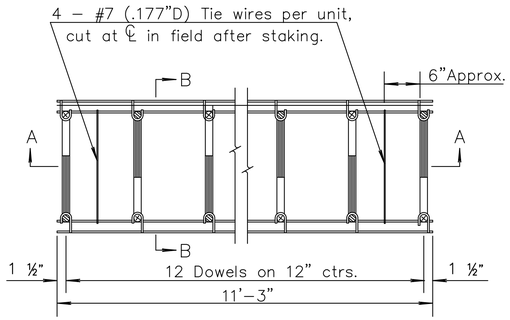
9 of 128

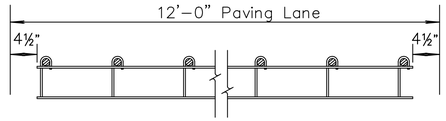
PV–141



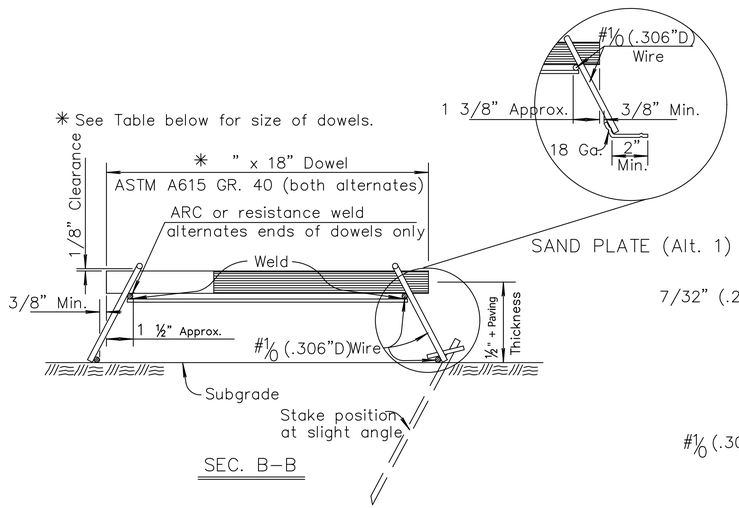
PERSPECTIVE VIEW



PLAN VIEW



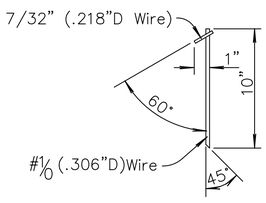
SEC. A–A



SEC. B–B

CONTRACTION JOINT

SAND PLATE (Alt. 1)



STAKE DETAIL

(6 Pieces minimum required)

DOWEL SIZE	
D (in.)	Diameter
6 < D < 9	1"
9 ≤ D < 11	1 1/4"
D ≥ 11	1 1/2"

PAVEMENT DEPTH

D=_

GENERAL NOTE

Dowel bar insertion may be by mechanical dowel placers regardless of the joint spacing.

Each dowel bar shall be coated with an epoxy coating that meets the standard specifications. The coating material shall be a powdered epoxy resin approved by the City of Wichita and shall be uniformly applied according to accepted practiced and the resin manufacturer's recommendations. For Alt. 1 the coating need not be applied to the end faces of the bars and will not be required within 2" of the end which will be fixed in the supporting basket by welding.

The cutting to length of the dowel bars shall be done in such a manner to result in no appreciable deformation of the ends.

Alt. 1 (Baskets)

Wire sizes shown are minimum required.

Basket to be staked to sub–grade, as shown. Ramset or similar type fastener with clip to be use when subgrade condition requires it.

A string line shall be stretched between the pavement forms along the center line of joint. The position of the joint shall be carefully marked so that the saw cut will coincide with the center line of the joint.

In order to identify the location to the bond breaker application, the working end of dowel and the supporting leg shall receive a light application of red paint at the place of fabrication. The bond breaker to be applied in the field prior to concrete placement shall consist of coating approximately three–fifths of the length of each dowel bar with hard grease at the working end identified by the red paint.

The entire joint assembly shall be carefully leveled so that the dowels are parallel to the slab surface and free to slide in the dowel holders. Any coating scraped off the dowels in assembling the joint shall be replaced.

After the complete contraction joint is assembled, it shall be checked to be certain that the vertical plane of joint will be perpendicular to the slab unless shown otherwise on the plans. The dowels shall be checked to be certain that they are level and will remain in a position parallel with the finished surface of the slab.

Concrete shall be placed over and adjacent to the joint in accordance with the requirements of the Specifications.

Other approved designs may be used in lieu of the type shown.

Alt. 2 (Mechanical placement)

Joint spacing shall be normal to centerline.

The pavement shall be placed and consolidated to full depth prior to insertion of the dowel bars.

The dowel bars shall be coated with a bond breaking agent prior to insertion into the plastic concrete.

The dowel bars shall be inserted into the plastic concrete ahead of the finishing beam or screed.

The installing device shall consolidate the concrete around the dowel bars such that no voids exist, without the supplemental use of hand held vibrators.

The dowel bars shall be located within one inch of the planned trans–verse location and within the range of depth of $D/2 \pm 0.1$ D measured from mid depth and mid length of the bar where D represents the pavement thickness.

The dowel bars shall be located within two inches of the planned longitudinal location.

The dowel bars shall be parallel to the pavement surface and centerline within a tolerance of one half inch in 18 inches in both the vertical and horizontal direction.

The forward movement of the finishing beam or screed shall not be interrupted by the inserting of the dowel bars.

A positive method of marking the locations of the transverse joints shall be provided.

REVISED: NOVEMBER 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

CONTRACTION & EXPANSION JT. DOWEL ASSEMBLIES

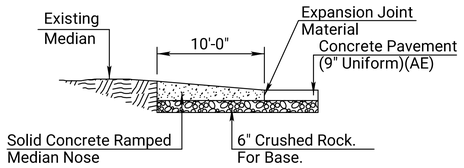
CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

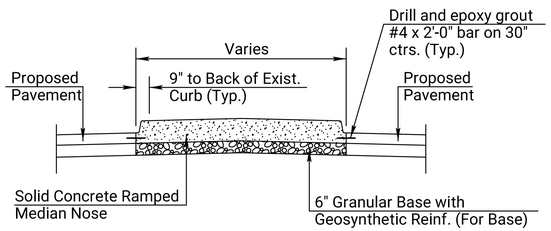
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
10 of 128

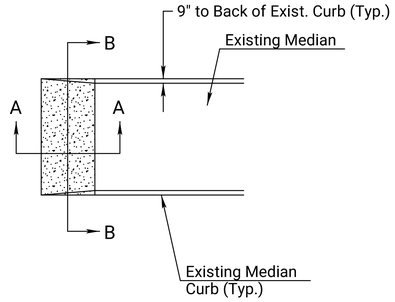
PV–142



SECTION A-A



SECTION B-B

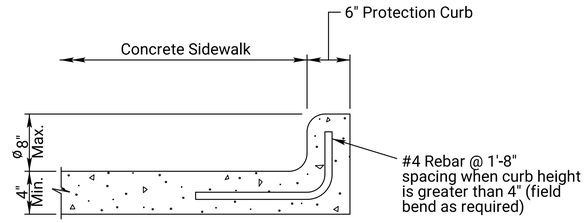


Concrete Median Nose Detail (Square Nose)

All work and materials necessary for construction of median nose shall be considered subsidiary.

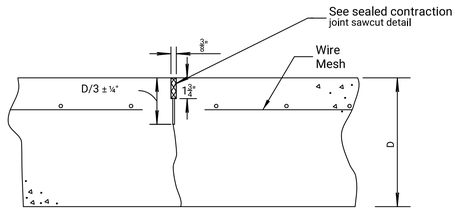
Notes:
Median Nose at Sta. 128+82.76 = 2.87 Cu. Yd. of Concrete (For Information Only)

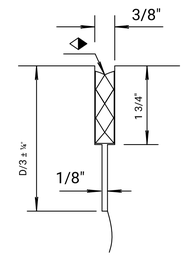
Concrete used for median nose construction shall conform to the City of Wichita Standard Specifications for concrete pavement mix or as Approved by Engineer.



Protection Curb Detail

Ø Vary curb height to meet slope requirements





Detail for Sealed Contraction Joint Sawcut

Details for Contraction Joints in Reinf. Conc. Pvt.

Notes:
Construct contraction joints at plan locations or at the Engineer's direction.

◆ Fill all sawed joints on the project in accordance with the City of Wichita Standard Specifications.

Make an initial 1/8" saw cut (D/3 ± 1/4" depth); the second 3/8" saw cut is a separate operation done after concrete has gained sufficient strength to avoid spalling as determined by the Engineer.

Pavement depth, D = 9"

CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

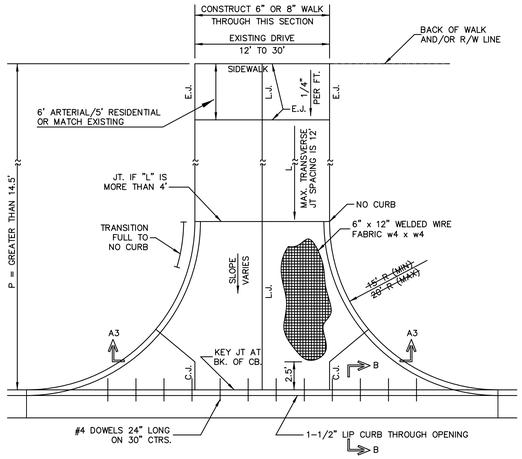
MISCELLANEOUS PAVEMENT DETAILS

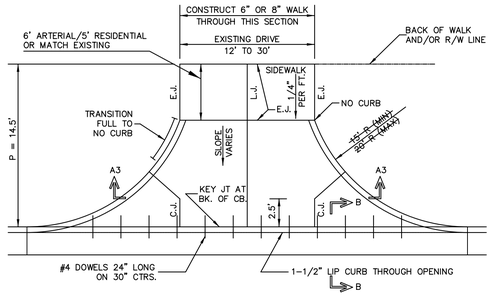
NO.	DATE	DESCRIPTION
		REVISIONS

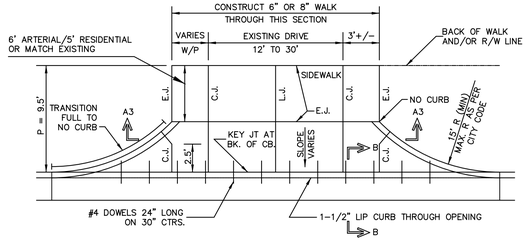
PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

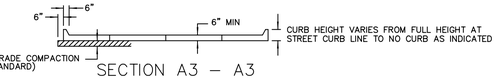
SHEET NO
11
SHEET 11 OF 128

ALL DRIVE RADII CONSTRUCTED WITH THIS PROJECT SHALL HAVE A RADIUS OF 25'



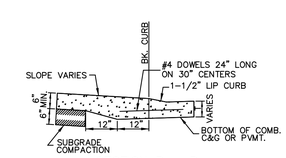






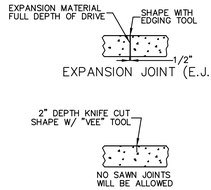
SECTION A3 – A3

FULL RADIUS DRIVES (ARTERIAL/COLLECTOR DRIVEWAY)

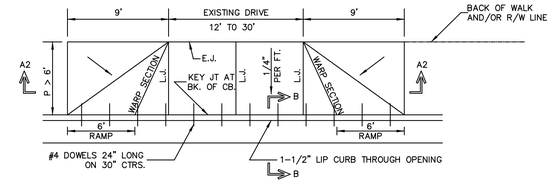


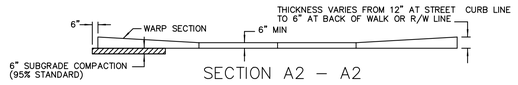
SECTION B – B

ALT. LONGITUDINAL CONSTRUCTION JOINT



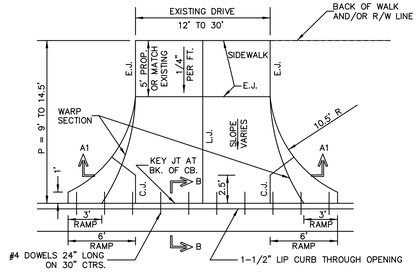
BACK OF CURB DETAIL

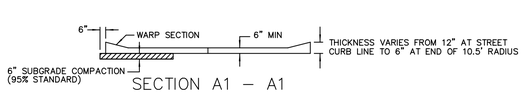




SECTION A2 – A2

FULL RAMP DRIVES (P = 4.0' & 6.5')





SECTION A1 – A1

RADIUS RAMP DRIVES (RESIDENTIAL DRIVEWAY)

GENERAL NOTES

1. DRIVEWAY CONSTRUCTION DETAILED ON THIS SHEET IS FOR USE WITH FULL HEIGHT STREET CURBS AND IN AREAS WITHOUT FULL WALK CONSTRUCTION IN THE PARKING. SEE OTHER DETAIL SHEETS FOR DRIVEWAY CONSTRUCTION WITH ROLL CURB AND/OR FULL WALK.
2. ONE LONGITUDINAL JOINT SHALL BE CONSTRUCTED ALONG THE CENTERLINE OF DRIVES HAVING A WIDTH DIMENSION OF 24' OR LESS. TWO LONGITUDINAL JOINTS SHALL BE CONSTRUCTED WITH EQUAL SPACINGS NOT TO EXCEED 10' FOR DRIVES WITH A WIDTH DIMENSION GREATER THAN 24'.
3. ~~DRIVEWAY WIDTH DENOTED AS WIDTH ON THE DETAIL DRAWINGS SHALL BE A MINIMUM OF 12' AND A MAXIMUM OF 30'. THE MAXIMUM OPENING FOR RADIUS TYPE DRIVES WITH CURBS THROUGH THE RADIUS SHALL NOT EXCEED 52' AT THE STREET CURB LINE.~~
4. CONTRACTION JOINT SPACING IN THE DRIVEWAY WALK SECTION SHALL BE A MINIMUM OF 3' AND A MAXIMUM OF 6' AND ARE TO BE EQUALLY SPACED WITHIN THIS RANGE. WALK SECTION SHALL BE CONSTRUCTED TO THE SAME THICKNESS AS THE DRIVEWAY.
5. ADDITIONAL THICKNESS OF DRIVE AS INDICATED IN THE DRAWINGS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE DRIVEWAY CONSTRUCTION.
6. ONE HALF INCH EXPANSION JOINTS SHALL BE INSTALLED WHEREVER DRIVE CONSTRUCTION ABUTS SIDEWALK. ONE HALF INCH EXPANSION JOINTS SHALL ALSO BE INSTALLED ALONG THE PROPERTY LINE AND/OR BACK OF WALK LINE WHEN DRIVE CONSTRUCTION ALONG THIS LINE ABUTS CONCRETE PARKING LOTS OR CONCRETE DRIVE EXTENSION.
7. DRIVEWAYS ONLY ON RESIDENTIAL PROPERTIES ONLY CAN BE CONSTRUCTED WITH 6" IN THICKNESS AND CAN BE WITHOUT REINFORCEMENT.
8. ALL DRIVEWAYS TO NONRESIDENTIAL PROPERTY SHALL BE A MINIMUM OF 8" IN THICKNESS AND SHALL HAVE REINFORCEMENT WITH 6"x12", W4xW4.

REVISED: NOVEMBER 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STANDARD DRIVE ENTRANCES FULL HEIGHT CURB

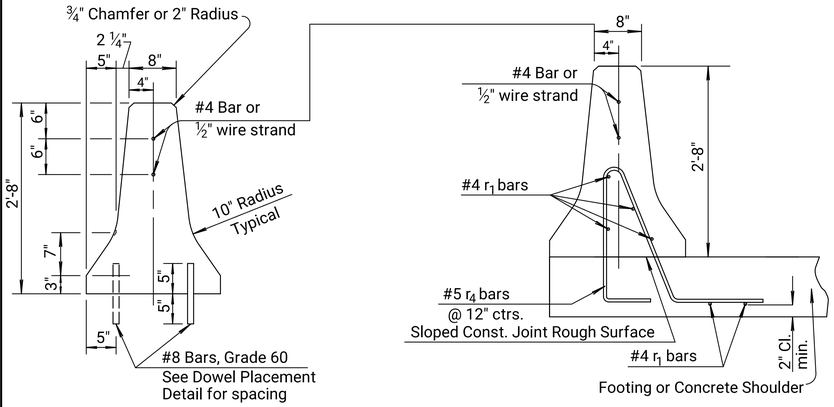
CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

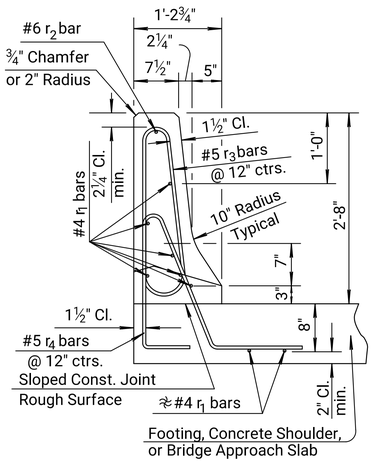
SHEET

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	13	128



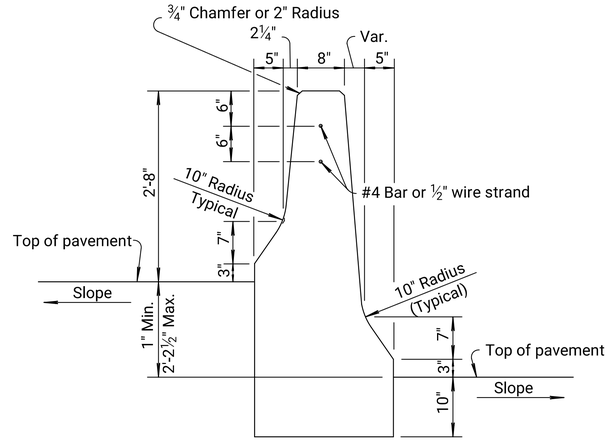
TYPE I

TYPE I Special Transition
See Standard Drawing 625A for Plan View

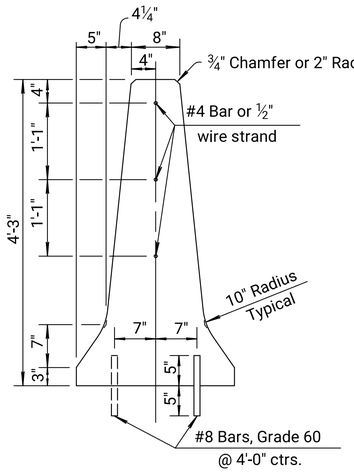


TYPE II

≈ Omit r_1 bars in approach slabs. Tie r_4 bars to longitudinal reinforcement (#6 f bars) shown in the applicable Bridge Approach Pavement Standard Drawing.

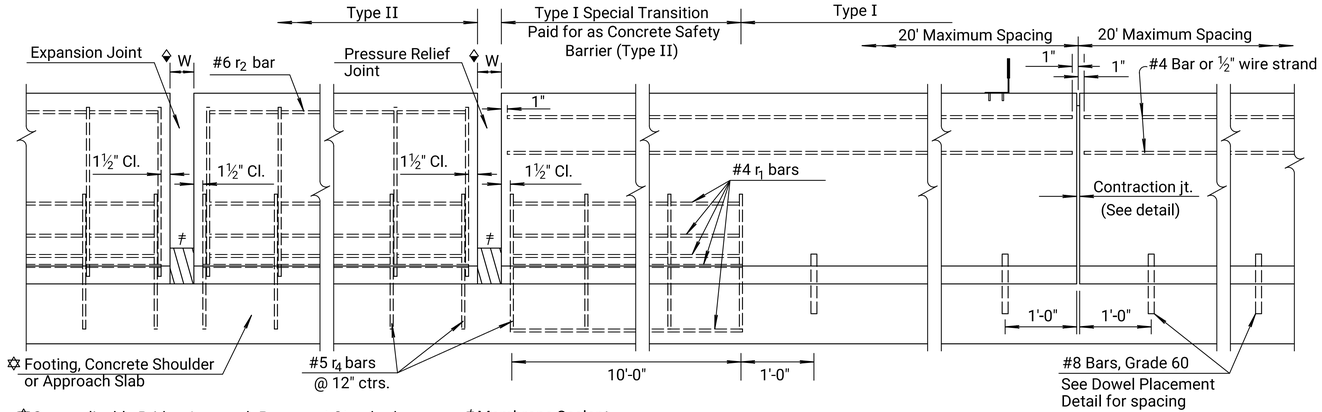


TYPE III



TYPE IV

♢ W= Formed Concrete Opening Size - See "Temperature Expansion/Pressure Relief Joint Width Table", Standard Drawing RD712.

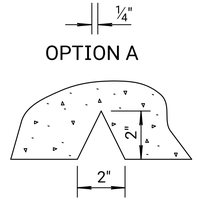


✡ See applicable Bridge Approach Pavement Standard Drawing for reinforcement in approach slab.

≠ Membrane Sealant

PRESSURE RELIEF/EXPANSION JOINT (Bridge Ends)

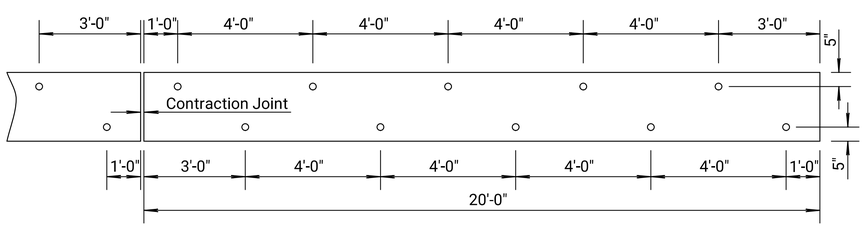
Pressure relief joint will match relief joint in bridge approach slab. Joints wider than 4" need a special design.



OPTION A

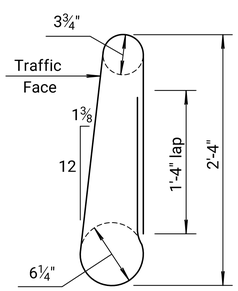
OPTION B

CONTRACTION JOINT DETAIL

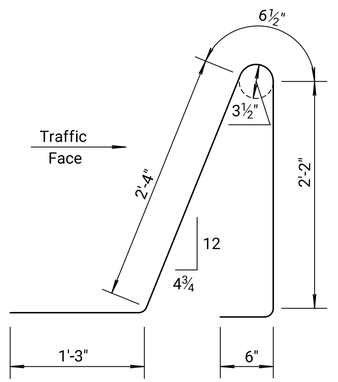


DOWEL PLACEMENT DETAIL
(TYPE I & IV)

CONTRACTION JOINT



#5 r_3



#5 r_4

BENDING DIAGRAMS
Note: All dimensions are out to out of bars.

GENERAL NOTES:

Use Concrete Grade 3.0 (AE) or Concrete Pavement Mix (Contractor's Option).

Construction drainage slots where specified in the plans, inlet locations or Engineer's direction.

Use epoxy coated reinforcing steel, Grade 60. See details for spacing, keep a minimum reinforcing steel clear distance of 1½".

Payment for all reinforcing bars, joint material, median barrier filler material, reflectors and supporting materials, associated work, etc., is subsidiary.

The section furnished must generally comply with the dimensions shown. Requests for minor variations in section geometry may be submitted for review.

Permanent concrete barriers are cast in place or slip formed construction only. Precast barriers are not permitted.

CONSTRUCTION JOINTS

Place joint material (Type B or C) where shown for structures and at the end of day construction joint.

CONTRACTION JOINTS

Form or saw contraction joints on 20' centers maximum. Where barrier is on or adjacent to concrete pavement space joints to match contraction joints and definite transverse cracks in the pavement. Contraction joints not to exceed 20' centers.

BARRIER BASE

Where barrier base is not paved full width, place barrier on a 10" x 2'-0" bed of concrete Grade 3.0, or the mix used in concrete pavement or asphalt base course (Contractor's option, Engineer's approval) to assue proper alignment.

APPROACH SLAB EXPANSION/PRESSURE RELIEF JOINT

~~Install membrane sealant expansion joint material with a lubricant adhesive cut to the shape shown on Standard Drawing RD625A. Construct joint to match pressure relief joint of concrete pavement approach slabs.~~

~~See Standard Drawing RD712 for Expansion/Pressure Relief Joint Details.~~

~~Work and materials required for installation of joint material is subsidiary to Concrete Safety Barrier and conforms to standard specifications.~~

~~DELINEATION~~

~~See Standard Drawing RD610 for details of barrier delineation.~~

NO.	DATE	REVISIONS	BY	APP'D
06	09-11-17	Added Type I transition	A.L.R.	S.W.K.
05	04-28-11	Rev. I,II,III & IV dimen. & notes	S.W.K.	J.O.B.
04	05-28-09	Revised Type III dimensions	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

PERMANENT CONCRETE SAFETY BARRIER TYPE I,II,III &IV (F-SHAPE)

~~RD625~~

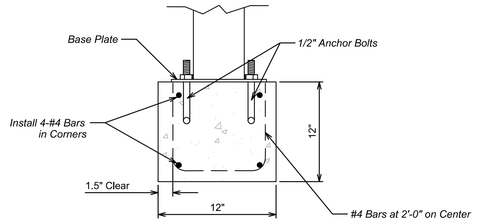
FHWA APPROVAL	03-05-18	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-20-2022 Sh. No. 13

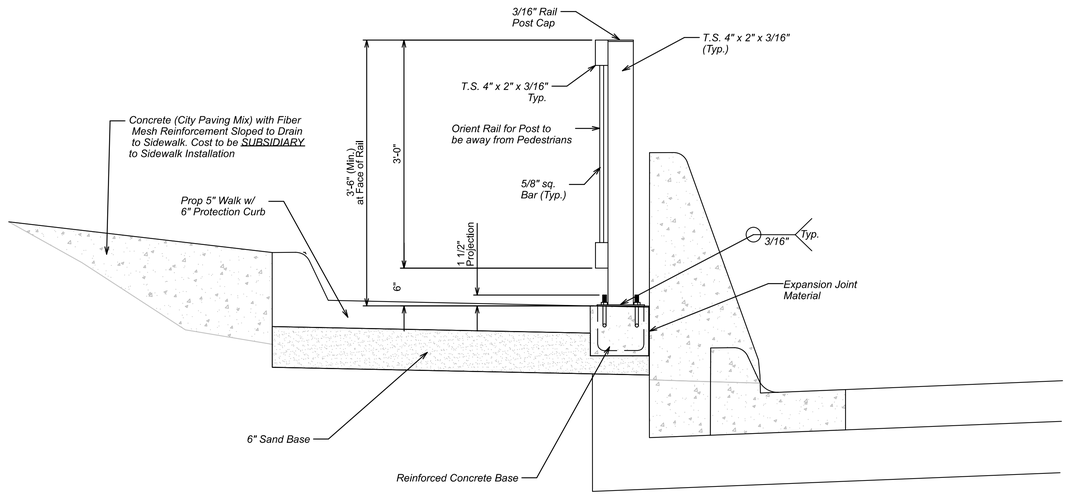
KDOT Graphics Certified

Note to Designer: The scenario depicted is for Type II CSB to Type I CSB, this sheet will need to be modified for other transition scenarios.

Plotted by : USTV690349 29-OCT-2024 16:06
File : 30901193RD625.dgn



REINFORCED CONCRETE BASE



HANDRAIL SECTION A-A

No Scale

GENERAL NOTES

The horizontal members of the rail and posts shall be hollow structural tubing. All structural steel and tubing shall comply to A.S.T.M Designation A36 or A500 Grade B respectively.

Rail shall be fabricated in lengths as shown

Posts and bars shall be set vertical and shimmed if required.

The Handrail shall be sandblasted prior to painting.

The Handrail shall be painted shop and field with an Zinc/Water Borne Acrylic paint system complying with the Standard Specifications for State Road and Bridge Construction, 1990 Edition Kansas Department of Transportation. Color of paint shall be "Black" and shall be approved by the Engineer before application

Material and construction shall conform to the Structural Welding Code A.W.S. D1.1-88

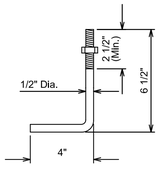
Shop details must be submitted to and approved by the Engineer.

All dimensions are ± and shall be field verified.

Class A Concrete (AE) - 4000 p.s.i. @ 28 days.

Rebar - A615, #4, Gr. 60

Chamfer exposed edges 3/4" (Typical).

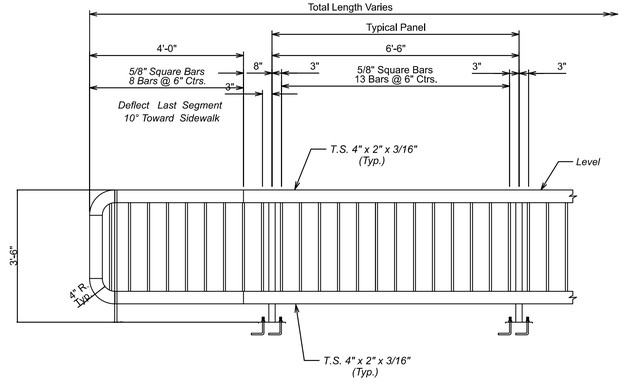


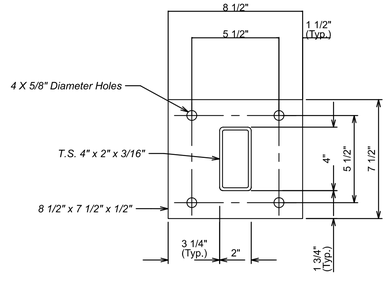
Galvanized (ATSM A153)

(May Substitute expandable anchor bolts when approved by the Engineer)

ANCHOR BOLT

Orient to provide min. 2" edge clearance to either top of footing or adjacent bolts





CITY OF WICHITA

wsp

WEST STREET - I-235 TO MACARTHUR

WEST STREET HANDRAIL DETAILS

NO.	DATE	DESCRIPTION
		REVISIONS

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO

14

SHEET 14 OF 128

10/29/2024 4:50:51 PM File : c:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193HAND.dgn

BENCHMARK:
BM #209 - Punched "X" on the north rim of a KG&E manhole on the north side of the drive to the Evergy Substation, 35' east of the east side of West Street
B.L. Sta. 96+41.55, 56' Rt.
Elev. 1285.91 (NAVD 88)

BENCHMARK:
BM #210 - T-Post flush with the ground 250' north of MacArthur Road, 24.5' west of the west edge of West Street
B.L. Sta. 102+38.72, 50.22' Lt.
Elev. 1287.98 (NAVD 88)

SCALE
PLAN: Lat. & Long.
20' 0 20' 40'
+0.530%
-0.380%
Sta. 97+00.00
Begin Curb & Gutter
Begin NRDJ Concrete Pavement
Sta. 97+00
BEGIN PROJECT
Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")
Construct 10' Wide Concrete Ditch Liner (5" Thick)
Construct Wheelchair Ramp w/ Detectable Warnings (10' Wide) (Both Sides)
Macwest LLC.
608 W. Douglass
Wichita, KS 67202
Prt of Lot 1, Blk 1
Macwest Addition
10' Temp. Esmt.
Temp. Esmt.
Const. Limits
Perm. Drainage Esmt.
Prop. 35' Drain. Esmt.
10' Concrete Lined Channel
Exist. R/W
Construct Concrete Sidewalk 5", 10' Wide
Prop. AT&T Fiber Optic
Ex. O/H Elec
Ex. 16" KGS Pipeline (Abandoned)
Ex. 14" Black Hills Pipeline
Sta. 99+04.20
End NRDJ Concrete Pavement
Begin Reinf. Concrete Pavement
Sta. 99+30.41
Construct Wheelchair Ramp w/ Detectable Warnings (6' Wide) (Both Sides)
Construct Concrete Sidewalk 4", 6' Wide
Ped Sig
PROP TS
WEST STREET
MACARTHUR ROAD
CL-HE
Sta. 100+70.53
Sta. 100+94.53
End Reinf. Concrete Pavement
Begin NRDJ Concrete Pavement
Construct Concrete Sidewalk 4", 6' Wide
Remove Ex. Drive and 36" RCP. Do not Replace Drive.
LEH Commercial Properties LLC
3919 S. West St.
Prt of Lot 7, Blk A
Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")
Construct 10' Wide Concrete Ditch Liner (5" Thick)
Royal Industrial Addition
Sta. 103+00.00
Match Line
Ex. 20' SS Esmt.
Ex. 35' Drain. Esmt.
Ex. 16" Water Line (PVC)
Ex. 14" Black Hills Pipeline
Ex. U/G AT&T F.O.
SWS Line 1
Prop. 4" Phillips Pipeline
Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")
Construct Concrete Sidewalk 4", 6' Wide
Construct Concrete Pavement 9" (NRDJ) on Crushed Rock Base 6", Reinforced
Construct Wheelchair Ramp w/ Detectable Warnings (10' Wide) (Both Sides)
Kansas Gas & Electric
1200 Main St.
Kansas City, MO 64105
Sta. 97+00, 49.5' Rt.
Begin Construction Concrete Sidewalk 5", 6' Wide. Match South Project at Nearest Joint.
Sta. 99+04.20
End NRDJ Concrete Pavement
Begin Reinf. Concrete Pavement
Sta. 99+29.65
Sta. 100+69.61
Prop. AT&T Fiber Optic
Ex. U/G Elec
Elec MH
Fergerson, George
809 W. McArtor Rd.
Dodge City, KS 67801
Bergkamp, Duane W. & Carolyn E. Living Trust
3930 W. Macarthur
KI Wichita Properties LLC.
22096 S. 445th Ave. E
Porter, OK 74454
Lot 2, Blk 1
Rainbow Sales Addition
Construct Concrete Sidewalk 5", 10' Wide
Construct 24.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet.
Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")
Construct Concrete Pavement 9" (NRDJ) on Crushed Rock Base 6", Reinforced (Typical)
Prop. AT&T Vault
Ex. U/G Elec Duct

Note:
Trees/Shrubs to be removed are marked thus:

Areas of Full Pavement Removal & Replacement are indicated by:

WEST STREET - I-235 TO MACARTHUR
PLAN
STA. 97+00 TO STA. 103+00

CITY OF WICHITA
wsp

REVISIONS

NO.	DATE	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
15
SHEET 15 OF 128

10/29/2024 4:10:45 PM File: bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193PLN01.dgn

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

P.V.I.
No V.C.
Elev. = 1285.66

-0.380% +0.250%

Sta. 103+00.00 Match Line

Sta. 107+75.00

Sta. 109+00.00 Match Line

LEH Commercial Properties LLC
3919 S. West St.

Prt of Lot 7, Blk A

Construct 10' Wide Concrete Ditch Liner (5" Thick)

Remove Ex. 24" RCP

Construct 28.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 24" CMP

Construct 30.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet.

Construct 10' Wide Concrete Ditch Liner (5" Thick)

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

Royal Industrial Addition

LEH Commercial Properties LLC
3919 S. West St.

Prt of Lot 7, Blk A

Remove Ex. 24" RCP

Construct 36.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 24" RCP

Zogleman LP
3833 S. West St.

Lot 5, Blk A

Elec Ped

10' Temp. Esmt.

Temp. Esmt.

Const. Limits

1286.95

1288.68

1287.37

10' Concrete Lined Channel

10' Concrete Lined Channel

10' Concrete Lined Channel

Ex. 20' SS Esmt.

Ex. 35' Drain. Esmt.

+50.83

+09.95

Prop. AT&T Fiber Optic

Exist. R/W

AT&T Vault

Ex. U/G AT&T

Ex. O/H Elec (Trans)

Ex. 14" Black Hills Pipeline

Ex. 16" Water Line (PVC)

Prop. U/G Elec Duct

Ex. 24" RCP

1287.46 1286.96 1287.27 1286.77 1286.58 1286.39 1286.70 1286.20 1286.02 1286.32 1285.82 1286.13 1285.63 1285.94 1285.44 1285.75 1285.25 1285.41 1285.23 1285.35

50' R/W 30' CL-HE 18' CL-HE

+26.23 ℄ Dr. +35.14 ℄ Dr. +90.37 ℄ Dr. +35.19 ℄ Dr. +20.34 ℄ Dr.

SWS Line 2

SWS Line 3

WEST STREET

Prop. O/H Elec

3 4 105 6 ℄=℄=℄ 7 8 9

1288.01 1287.82 1287.63 1287.44 1287.25 1287.06 1286.87 1286.68 1286.49 1286.3 1286.27 1286.39

1287.32 1287.13 1286.95 1286.76 1286.56 1286.37 1286.19 1285.99 1285.8 1285.61 1285.59 1285.71

1287.82 1287.63 1287.06 1286.87 1286.49 1286.3 1286.11 1285.86

1288.26

Ex. 2" Black Hills

Ex. U/G AT&T

Ex. U/G AT&T

Prop. O/H Elec (Trans)

S. Pole

4.00'

1288.59 1288.39 1287.59 1288.20 1288.04 1287.85 1287.44 1287.40 1287.48 1287.28 1287.09 1287.06 1287.19

+49.72 +50.52 +64.02

1287.39' 1287.69

Const. Limits

Temp. Esmt.

10' Temp. Esmt.

Ex. 20' Util. Esmt.

Construct Concrete Pavement 9" (NRDJ) on Crushed Rock Base 6", Reinforced (Typical)

KI Wichita Properties LLC.
22096 S. 445th Ave. E
Porter, OK 74454

Lot 2, Blk 1
Rainbow Sales Addition

KI Wichita Properties LLC.
22096 S. 445th Ave. E
Porter, OK 74454

Lot 1, Blk 1
Rainbow Sales Addition

Ex. 20' Floodway Reserve

Phat An Buddhist Association
3854 S. West St.

Lot 1 Phat An Temple Addition

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

Saw and Remove Ex. Concrete Pavement as Shown and Replace with Concrete Pavement 8"

Construct 22.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 20" CMP

Construct 18.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 18" CMP

Construct Concrete Sidewalk 5", 10' Wide

Construct 18.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 15" CMP

Sta. 103+00.00 Match Line

-0.380%

Sta. 107+75.00

+0.250%

Sta. 109+00.00 Match Line

P.V.I.
No V.C.
Elev. = 1286.02

Note:
Trees/Shrubs to be removed are marked thus:

Areas of Full Pavement Removal & Replacement are indicated by:

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CITY OF WICHITA

wsp

WEST STREET - I-235 TO MACARTHUR
PLAN
STA. 103+00 TO STA. 109+00

REVISIONS			DESCRIPTION
		DATE	
		NO.	

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
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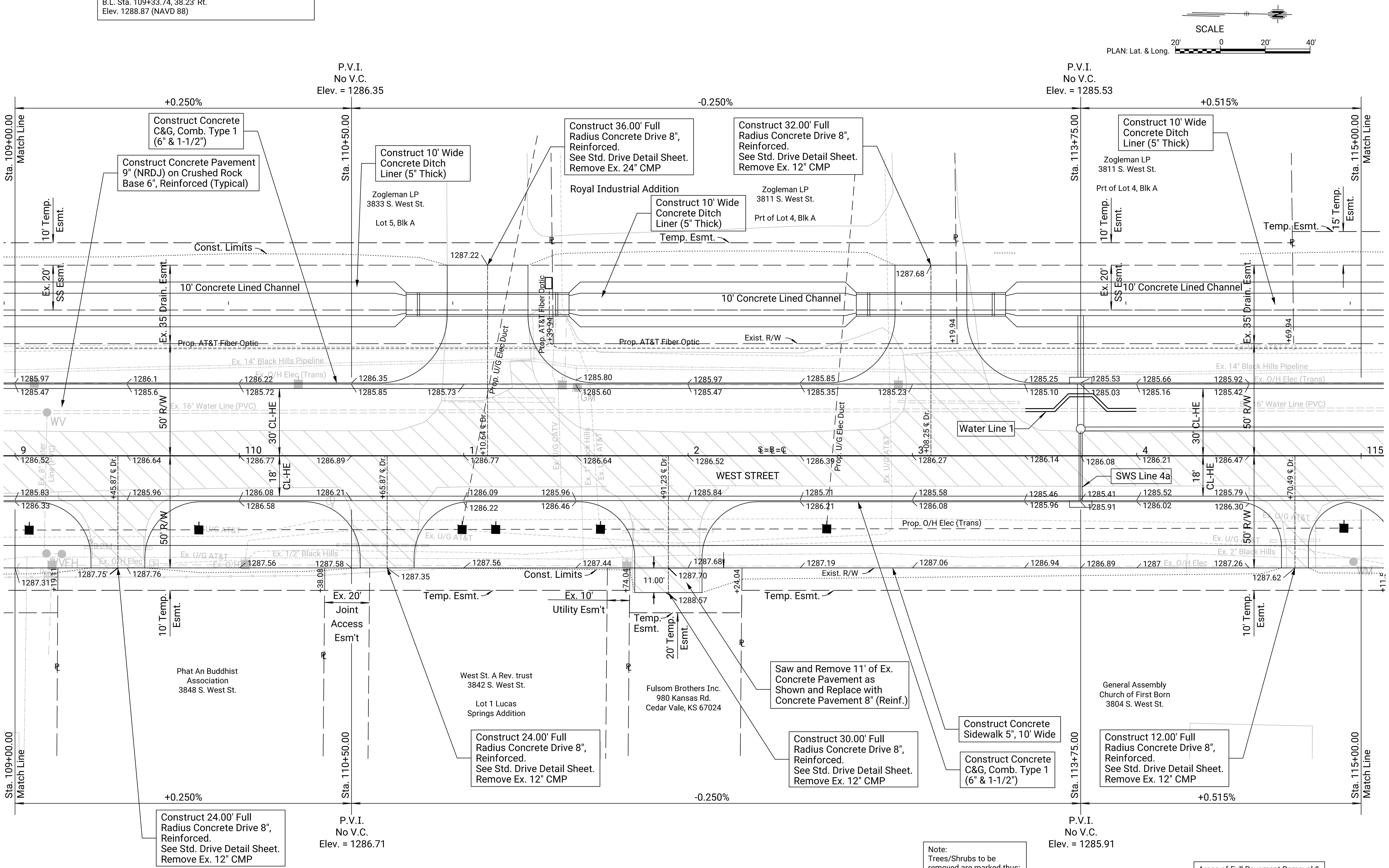
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
16
SHEET 16 OF 128

BENCHMARK:
BM #211 - Chisled "□" on top of the south curb of the north entrance to Phat An Temple of the east side of West Street
B.L. Sta. 109+33.74, 38.23' Rt.
Elev. 1288.87 (NAVD 88)



SCALE
PLAN: Lat. & Long.
20' 0 20' 40'
P.V.I.
No V.C.
Elev. = 1286.35
P.V.I.
No V.C.
Elev. = 1285.53
+0.250%
-0.250%
+0.515%
Sta. 109+00.00 Match Line
Sta. 110+50.00
Sta. 113+75.00
Sta. 115+00.00 Match Line
Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")
Construct Concrete Pavement 9" (NRDJ) on Crushed Rock Base 6", Reinforced (Typical)
Construct 10' Wide Concrete Ditch Liner (5" Thick)
Construct 36.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 24" CMP
Construct 32.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 12" CMP
Construct 10' Wide Concrete Ditch Liner (5" Thick)
Construct 10' Wide Concrete Ditch Liner (5" Thick)
Zogleman LP
3833 S. West St.
Lot 5, Blk A
Royal Industrial Addition
Zogleman LP
3811 S. West St.
Prt of Lot 4, Blk A
Zogleman LP
3811 S. West St.
Prt of Lot 4, Blk A
10' Temp. Esmt.
Const. Limits
Temp. Esmt.
Temp. Esmt.
15' Temp. Esmt.
Ex. 20' SS Esmt.
Ex. 35' Drain. Esmt.
10' Concrete Lined Channel
10' Concrete Lined Channel
10' Concrete Lined Channel
Prop. AT&T Fiber Optic
Prop. AT&T Fiber Optic
Exist. R/W
Ex. 14" Black Hills Pipeline
Ex. O/H Elec (Trans)
Ex. 16" Water Line (PVC)
Ex. 6" Water Line (PVC)
Water Line 1
SWS Line 4a
50' R/W
30' CL-HE
18' CL-HE
WEST STREET
WV
Prop. U/G Elec Duct
Prop. O/H Elec (Trans)
Ex. U/G AT&T
Ex. 1/2" Black Hills
Ex. 2" Black Hills
1287.22
1287.68
1285.97
1285.47
1286.1
1285.6
1286.22
1285.72
1286.35
1285.85
1285.73
1285.80
1285.60
1285.97
1285.47
1285.85
1285.35
1285.23
1285.25
1285.10
1285.53
1285.03
1285.66
1285.16
1285.92
1285.42
1286.52
1286.64
1286.77
1286.89
1286.77
1286.64
1286.52
1286.39
1286.27
1286.14
1286.08
1286.21
1286.47
1285.83
1286.33
1285.96
1286.08
1286.58
1286.21
1286.09
1286.22
1285.96
1286.46
1285.84
1285.71
1286.21
1285.58
1286.08
1285.46
1285.96
1285.41
1285.91
1285.52
1286.02
1285.79
1286.30
1287.31
1287.75
1287.76
1287.56
1287.58
1287.35
1287.56
1287.44
1287.68
1287.70
1288.57
1287.19
1287.06
1286.94
1286.89
1287
1287.26
1287.62
11.00'
+45.87 ℄ Dr.
+65.87 ℄ Dr.
+10.64 ℄ Dr.
+91.23 ℄ Dr.
+08.25 ℄ Dr.
+70.49 ℄ Dr.
+19.94
+69.94
+39.94
+19.11
+38.08
+74.04
+24.04
Const. Limits
Temp. Esmt.
Temp. Esmt.
Ex. 20' Joint Access Esm't
Ex. 10' Utility Esm't
Temp. Esmt.
20' Temp. Esmt.
10' Temp. Esmt.
10' Temp. Esmt.
Exist. R/W
Phat An Buddhist Association
3848 S. West St.
West St. A Rev. trust
3842 S. West St.
Lot 1 Lucas Springs Addition
Fulsom Brothers Inc.
980 Kansas Rd.
Cedar Vale, KS 67024
General Assembly Church of First Born
3804 S. West St.
Saw and Remove 11' of Ex. Concrete Pavement as Shown and Replace with Concrete Pavement 8" (Reinf.)
Construct Concrete Sidewalk 5", 10' Wide
Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")
Construct 24.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 12" CMP
Construct 30.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 12" CMP
Construct 12.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 12" CMP
Construct 24.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 12" CMP
P.V.I.
No V.C.
Elev. = 1286.71
P.V.I.
No V.C.
Elev. = 1285.91

Note:
Trees/Shrubs to be removed are marked thus:

Areas of Full Pavement Removal & Replacement are indicated by:

10/29/2024 4:10:53 PM File: \bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193PLN03.dgn

CITY OF WICHITA
WSP

WEST STREET - I-235 TO MACARTHUR
PLAN
STA. 109+00 TO STA. 115+00

NO.	DATE	REVISIONS	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
17
SHEET 17 OF 128

BENCHMARK:

BM #212 - T-Post flush with the ground 59' south of the entrance to Professional Cargo Service (PCS), 24.6' west of the west edge of West Street.
B.L. Sta. 115+68.49, 30.23' Lt.
Elev. 1288.76 (NAVD 88)

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

Saw and Remove 12.5' of Ex. Asphalt Pavement as Shown and Replace with A.C. Pavement 8"

Construct 36.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 24" CMP

Construct 26.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet.

Saw and Remove 12.5' of Ex. Asphalt Pavement as Shown and Replace with A.C. Pavement 8"

P.V.I.
No V.C.
Elev. = 1287.74

Construct 10' Wide Concrete Ditch Liner (5" Thick)

+0.515%

-0.250%

Sta. 115+00.00 Match Line

Sta. 118+00.00

Sta. 121+00.00 Match Line

Construct 30.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 18" CMP

Zogleman LP
3811 S. West St.

Prt of Lot 3, Blk A

Professional Cargo Services Inc.
3735 S. West St.

Prt of Lot 3 & 4 Blk A

Hampel Oil Distributors Inc.
3727 S. West St.

Prt of Lot 3, Blk A

Bergkamp Helen L. Living Trust
3709 S. West St.

Prt of Lot 2, Blk A

Royal Industrial Addition

Construct 24.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 18" CMP

Construct Concrete Pavement 9" (NRDJ) on Crushed Rock Base 6", Reinforced (Typical)

Bergkamp Helen L. Living Trust
3709 S. West St.

Prt of Lot 2, Blk A

Construct 26.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 18" CMP

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

B S Land & Cattle Co.
3661 S. West St.

Prt of Lot 1, Blk A

15' Temp. Esmt.

Temp. Esmt.

Const. Limits

10' Concrete Lined Channel

Ex. 20' SS Esmt.

Ex. 85' Drain. Esmt.

Prop. AT&T Fiber Optic

Exist. R/W

Prop. U/G Elec Duct

Ex. 14" Black Hills Pipeline

Ex. O/H Elec (Trans)

Ex. 16" Water Line

Ex. 8" Water Line (PVC)

Ex. U/G AT&T

Prop. U/G Elec Duct

Ex. U/G AT&T

Ex. O/H Elec

SWS Line 4b

SWS Line 4

SWS Line 5

WEST STREET

50' R/W

30' CL-HE

18' CL-HE

1288.3
1288.52
1287.56'
1289.06
1288.39

1286.18 1285.68
1286.44 1285.94
1286.20
1286.46
1286.71
1286.97
1287.24
1287.10
1287.47 1286.97
1287.35 1286.85
1287.22 1286.72
1286.60

115 1286.72
6 1287.24
7 1287.75
8 1288.27
9 1288.02
120' 1287.89
1 1287.64

+19.89
+49.94
+23.35 ℄ Dr.
+67.43 ℄ Dr.
+57.43 ℄ Dr.
+69.94
+32.94
+19.27 ℄ Dr.
+24.94
+70.84 ℄ Dr.

1286.04 1286.31
1286.55 1287.05
1286.82
1287.07 1287.57
1287.33
1287.60 1288.10
1287.46 1287.96
1287.33 1287.83
1287.21
1287.08 1287.58
1286.96 1287.46

+24.93 ℄ Dr.
+66.30 ℄ Dr.
+69.75 ℄ Dr.
+47.98 ℄ Dr.

1287.52 1287.52'
1287.62'
1287.78
1288.03
1288.29
1288.55
1288.81
1288.52
1288.88'
1289.06
1288.94
1288.81
1287.07
1288.56
1288.44

+11.53
+68.14
+28.14
+18.74
+03.74

10' Temp. Esmt.

Ex. 10' Utility Esm't

Ex. 10' Sidewalk & Utility Esm't

Construct 18.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 15" CMP

General Assembly Church of First Born
3742 S. West St.

Construct 18.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 12" CMP

Street Dedication for Trimmell Addition

Construct Concrete Sidewalk 5", 10' Wide

Saw and Remove 4' of Ex. Concrete Pavement as Shown and Replace with Concrete Pavement 8" (Reinf)

Topping, Dan D.
3738 S. West St.

Lot 1, Blk A
Wickham Addition

Topping, Dan D.
3738 S. West St.

Lot 1 Delgado Addition

Fuller, Roger
3660 S. West St.

Lot 1, Blk 1
Rainlink Addition

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

Remove Ex. Drive and 16" CMP. Do not Replace Drive.

Construct 16.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet.

Construct 26.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 18" CMP

P.V.I.
No V.C.
Elev. = 1288.10

Note:
Trees/Shrubs to be removed are marked thus:

Areas of Full Pavement Removal & Replacement are indicated by:

CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

PLAN
STA. 115+00 TO STA. 121+00

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
18
SHEET 18 OF 128

10/29/2024 4:10:56 PM File:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193PLN04.dgn

BENCHMARK:

BM #213 - T-Post flush with the ground 45.4' north of an asphalt drive, 29.2' east of the east edge of West Street, 10' west of a power pole.
B.L. Sta. 122+39.98, 41.22' Rt.
Elev. 1286.85 (NAVD 88)

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

P.V.I.
No V.C.
Elev. = 1286.60

P.V.I.
No V.C.
Elev. = 1288.00

-0.250%

+0.350%

-0.400%

Sta. 121+00.00 Match Line

Sta. 122+50.00

Sta. 126+50.00

Sta. 126+70.93

Sta. 127+00.00 Match Line

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

Construct 10' Wide Concrete Ditch Liner (5" Thick)

Construct 41.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 18" CMP

Construct Concrete Pavement 9" (NRDJ) on Crushed Rock Base 6", Reinforced (Typical)

Construct 24.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 14" CMP

B S Land & Cattle Co.
3661 S. West St.

Prt of Lot 1, Blk A

Royal Industrial Addition

JH Shears Sons Inc.
3615 S. West St.

JH Shears Sons Inc.
3615 S. West St.

15' Temp. Esmt.

Temp. Esmt.

Ex. 20' SS Esmt.

Ex. 35' Drain. Esmt.

10' Concrete Lined Channel

Exist. R/W

Prop. AT&T Fiber Optic

Ex. 14" Black Hills Pipeline

Ex. 16" Water Line (PVC)

Ex. 2" Black Hills

Ex. U/G AT&T

Ex. U/G CATV

Ex. O/H Elec (Trans)

Ex. O/H Elec

Const. Limits

30' Temp. Esmt.

20' Temp. Esmt.

Ex. 10' Utility Esm't

Elec Ped

Water Line 2

SWS Line 6

SWS Line 6a

SWS Line 6b

WEST STREET

50' R/W

30' CL-HE

18' CL-HE

Prop. 50' R/W

Prop. U/G Elec Duct

Ex. 10' Sidewalk & Utility Esm't

Ex. 10' Utility Esm't

10' Temp. Esmt.

Perm. Drainage Esmt.

Temp. Esmt.

Ex. 40' Pipeline Easement

Fuller, Roger
3656 S. West St.

Lot 2, Blk 1
Rainlink Addition

Criss Optical Manufacturing Co.
3628 S. West St.

Lot 2, Blk A
Carmicheal Addition

Yoder, Donald D. Rev. Trust
3612 S. West St.

Lot 1, Blk A
Carmicheal Addition

Construct 16.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 18" CMP

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

Construct Concrete Sidewalk 5", 10' Wide

Construct 24.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet. Remove Ex. 18" CMP

Construct 24.00' Full Radius Concrete Drive 8", Reinforced. See Std. Drive Detail Sheet.

Note:
Trees/Shrubs to be removed are marked thus:

Areas of Full Pavement Removal & Replacement are indicated by:

WEST STREET - I-235 TO MACARTHUR
PLAN
STA. 121+00 TO STA. 127+00

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
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DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
19
SHEET 19 OF 128

10/29/2024 8:36:33 PM File : c:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193PLN05.dgn

BENCHMARK:

BM #214 - Chisled "D" on the west end of the south bullnose of the island south of the east bound I-235 Ramp
B.L. Sta. 128+50.25, 1.47' Lt.
Elev. 1288.54 (NAVD 88)

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

Sta. 127+00.00 Match Line

Construct Concrete Pavement (VG) 8" (Reinf.) on Crushed Rock Base 7", Reinforced w/ Concrete Curb, Mono Edge (6" & 1-1/2") Remove Ex. 20" CMP

Bolin Drive

+0.773%

Sta. 128+82.76 End Curb & Gutter End NRDJ Concrete Pavement

Construct Concrete Flume See Detail, Sheet 45

Construct 6' Concrete Median Nose to Match Existing Median Width. See Detail, Sheet 11

I-235 Exit Ramp

Prop. O/H Elec (Trans)

Fiber Optic Cable Cox

Sta. 133+00.00 Match Line

Prop. U/G Elec Duct

Elec Ped

Ex. 14" Black Hills Pipeline

Gas Line Black Hills Energy 14"

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

Const. Limits

11

Fiber Optic Cable AT&T

Exist. R/W

Power Line KDOT

Ex. U/G AT&T F.O.

Ex. Water Line (PVC)

Water Line City of Wichita

1287.09

1287.29

1286.89

1287.8

1287.37

1287.53

Sta. 128+82.76 END PROJECT

Prop. U/G Elec Duct

Prop. O/H Elec (Trans)

7 8 9 130 ℄=℄=℄ 1 2 3

1288.34 1288.14 1287.94 1288.05 1287.97

30' CL-HE

50' R/W

Ex. 24" RCP

WEST STREET

Remove 311' Ex. Guardrail

1287.29 1287.59 1287.09 1286.89 1287.27 1287.53

1287.79 1287.39 1287.77 1287.53

Power Line KDOT

1288.38 1288.25 1288.13 1287.37' 1286.00' 1287.84 1286.87

Exist. R/W

1288.16

1288.9 1288.91 1289.41 1288.98 1289.48

Construct Covered Concrete Flume See Detail, Sheet 46

Const. Limits

SWS Line 7

1287.29

1284.26'

Ped Sig

1283.95'

1283.94'

1287.49

1287.37 1287.37 1287.37

Prop. AT&T FIBER OPTIC LINE

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

Construct Concrete Sidewalk 5", 10' Wide

Construct Wheelchair Ramp w/ Detectable Warnings (10' Wide)

Construct Concrete Sidewalk 4", 6' Wide

Construct Wheelchair Ramp w/ Detectable Warnings (6' Wide)

Install Pedestrian Handrail

Construct Concrete Sidewalk, 5" with 6" Sidewalk Protection Curb

Construct Concrete Pavement 9" (NRDJ) on Crushed Rock Base 6", Reinforced (Typical)

I-235 Entrance Ramp

Southbound I-235

Northbound I-235

Sta. 127+00.00 Match Line

Sta. 128+80.00

Sta. 128+82.76 End Curb & Gutter End NRDJ Concrete Pavement

-0.400%

+0.773%

Sta. 130+70.00 Begin Conc. Safety Barrier Transition

Sta. 130+70.00 End Conc. Safety Barrier Transition

Sta. 133+00.00 Match Line

Note:
Trees/Shrubs to be removed are marked thus:

Areas of Full Pavement Removal & Replacement are indicated by:

CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

PLAN
127+00 TO STA. 133+00

REVISIONS	DESCRIPTION	DATE	NO.

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
20
SHEET 20 OF 128

10/29/2024 4:11:02 PM File:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193PLN06.dgn

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

Sta. 139+00.00 Match Line
9 ℄=℄=℄ 140
Sta. 139+47.95 END CONSTRUCTION
WEST STREET
1289.09
1288.00
Const. Limits 1288.64
Sta. 139+47.95, 36.30' Rt. End Sidewalk Construction. Match Existing at Nearest Joint.
Calvart Street
Construct Wheelchair Ramp w/ Detectable Warnings (6' Wide)

Sta. 133+00.00 Match Line
Southbound I-235
Northbound I-235
I-235 Entrance Ramp
Gas Line Black Hills Energy 14"
Exist. R/W
Water Line City of Wichita
50' R/W
3 4 135 6 ℄=℄=℄ 7 8 9
WEST STREET
1289.07 1289.57 1289.41 1289.91 1289.13
1287.76 1287.76 1287.76 Const. Limits
1287.88 TMH Ped Sig 1288.4 1288.27
Exist. R/W 1287.7 1287.58 Ped Sig 1288.23 TMH
1287.59 1287.98 Const. Limits 1288.3 1289.09 1288.64
Construct Concrete Sidewalk 4", 6' Wide
Construct Wheelchair Ramp w/ Detectable Warnings (6' Wide) (Both Sides)
I-235 Exit Ramp
Power Line KDOT
Power Line
Construct Concrete Sidewalk 4", 6' Wide
℄ +55.47
D&P Land LLC Reserve A Dorothy Addition
℄ +13.
Protection Drainage Ditch
Sta. 133+00.00 Match Line
Sta. 133+50.00 Begin Conc. Safety Barrier Transition
Sta. 134+00.00 End Conc. Safety Barrier Transition
Sta. 139+00.00 Match Line

Note:
Trees/Shrubs to be removed are marked thus:

Areas of Full Pavement Removal & Replacement are indicated by:

CITY OF WICHITA
WSP

WEST STREET - I-235 TO MACARTHUR

PLAN
STA. 133+00 TO STA. 139+00

NO.	DATE	REVISIONS DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
21
SHEET 21 OF 128

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

Construct Concrete Pavement 9" (NRDJ) on Crushed Rock Base 6", Reinforced

LEH Commercial Properties LLC
3919 S. West St.
Prt of Lot 7, Blk A

Sta. 8+00 BEGIN PROJECT

Sta. 8+00.00 Begin Curb & Gutter Begin NRDJ Concrete Pavement

Sta. 8+98.170 End NRDJ Concrete Pavement Begin Reinf. Concrete Pavement

Sta. 9+17.54

+0.320%

Ex. 35' Drain. Esmt.

Ex. 15' SS Esmt.

WEST STREET

Exist. R/W

Const. Limits

Ex. 12" Water Line (PVC)

Ex. U/G AT&T

10' Concrete Lined Channel

1284.30 1281.99 1281.65

75' R/W

1288.15 1288.15 1288.65 1288.15 1288.64 1288.14 1288.70 1288.20

7 8 9

18' CL-HE

1288.51 1288.67 1288.83 1288.88 1288.91 1288.94

1287.82 1287.82 1287.98 1288.48 1288.14 1288.64 1288.32 1288.82

Ex. 8" KGS Pipeline

1284.42 1282.02 1281.10

10' Concrete Lined Channel

Const. Limits

Ex. O/H Elec (Trans)

Ex. 6" Black Hills Pipeline

Ex. 2" Black Hills Pipeline

Ex. 10" KGS Pipeline (Abandoned)

Exist. R/W

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

Macwest LLC.
608 W. Douglass
Wichita, KS 67202

Prt of Lot 1, Blk 1
Macwest Addition

Temp. Esmt.
Perm. Drainage Esmt.
Prop. 35' Drain. Esmt.

Sta. 8+00.00 Begin Curb & Gutter Begin NRDJ Concrete Pavement

Sta. 8+98.17 End NRDJ Concrete Pavement Begin Reinf. Concrete Pavement

Sta. 9+31.42

+0.320%

Prop. AT&T Fiber Optic Line

Ex. 4" Phillips Pipeline

Ex. 4" Black Hills Pipeline

Ex. U/G AT&T F.O.

100

10

1289.05 1288.93 1288.84

MACARTHUR ROAD

1 2 3

1288.7 1288.47 1288.25

Sta. 10+69.61

Sta. 10+89.98 End NRDJ Concrete Pavement Begin Reinf. Crushed Rock Base

-0.450%

Construct Concrete C&G, Comb. Type 1 (6" & 1-1/2")

Fergerson, George
809 W. McArtor Rd.
Dodge City, KS 67801

Sta. 12+00.00 End Curb & Gutter End Reinf. Concrete Pavement

Lot 1, Blk A
Pretty Prairie Addition

R/W

Prop. 75' R/W

Exist. R/W

1286.41 1286.41 1285.90 1285.55

Const. Limits

Sta. 12+00 END PROJECT

50' R/W

1288.65 1288.15 1288.51 1288.01 1288.40 1287.90 1287.78 1287.78

18' CL-HE

1288.15 1288.65 1288.01 1288.51 1287.90 1288.40 1287.78 1287.78

Ex. 2" Black Hills Pipeline

Ex. 8" KGS Pipeline

Const. Limits

75' R/W

Ex. O/H Elec (Trans)

Prop. O/H Elec (Trans)

Ex. 10" KGS Pipeline (Abandoned)

Exist. R/W

Construct Concrete Pavement 9" (NRDJ) on Crushed Rock Base 6", Reinforced

Kansas Gas & Electric
1200 Main St.
Kansas City, MO 64105

Sta. 10+69.35

Sta. 10+89.98 End NRDJ Concrete Pavement Begin Reinf. Crushed Pavement

Sta. 12+00.00 End Curb & Gutter End Reinf. Concrete Pavement

-0.450%

Note:
Trees/Shrubs to be removed are marked thus:

Areas of Full Pavement Removal & Replacement are indicated by:

WEST STREET - I-235 TO MACARTHUR
PLAN
STA. 8+00 TO STA. 12+00

NO.	DATE	DESCRIPTION
		REVISIONS

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
22
SHEET 22 OF 128

10/29/2024 4:11:10 PM File:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193PLN08.dgn

Sta. 8+98.17
End NRDJ Concrete Pavement
Begin Reinforced Concrete Pavement

Sta. 8+98.17
End NRDJ Concrete Pavement
Begin Reinforced Concrete Pavement

Sta. 99+04.20
End NRDJ Concrete Pavement
Begin Reinforced Concrete Pavement

Sta. 100+94.53
End Reinforced Concrete Pavement
Begin NRDJ Concrete Pavement

Construct Concrete Pavement 9" (Reinforced) on Crushed Rock Base 6", Reinforced

Construct Concrete Pavement 9" (Reinforced) on Crushed Rock Base 6", Reinforced

Construct 10" Stamped Concrete Crosswalk. See Detail, Sheet 7

Construct 10" Stamped Concrete Crosswalk. See Detail, Sheet 7

Install #4 Bars 24" Long at 30" on Center

Install 6" x 12" W4-W4 Wire Welded Fabric

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

Sta. 10+89.98
End Reinforced Concrete Pavement
Begin NRDJ Concrete Pavement

Sta. 10+89.98
End Reinforced Concrete Pavement
Begin NRDJ Concrete Pavement

WEST STREET - I-235 TO MACARTHUR

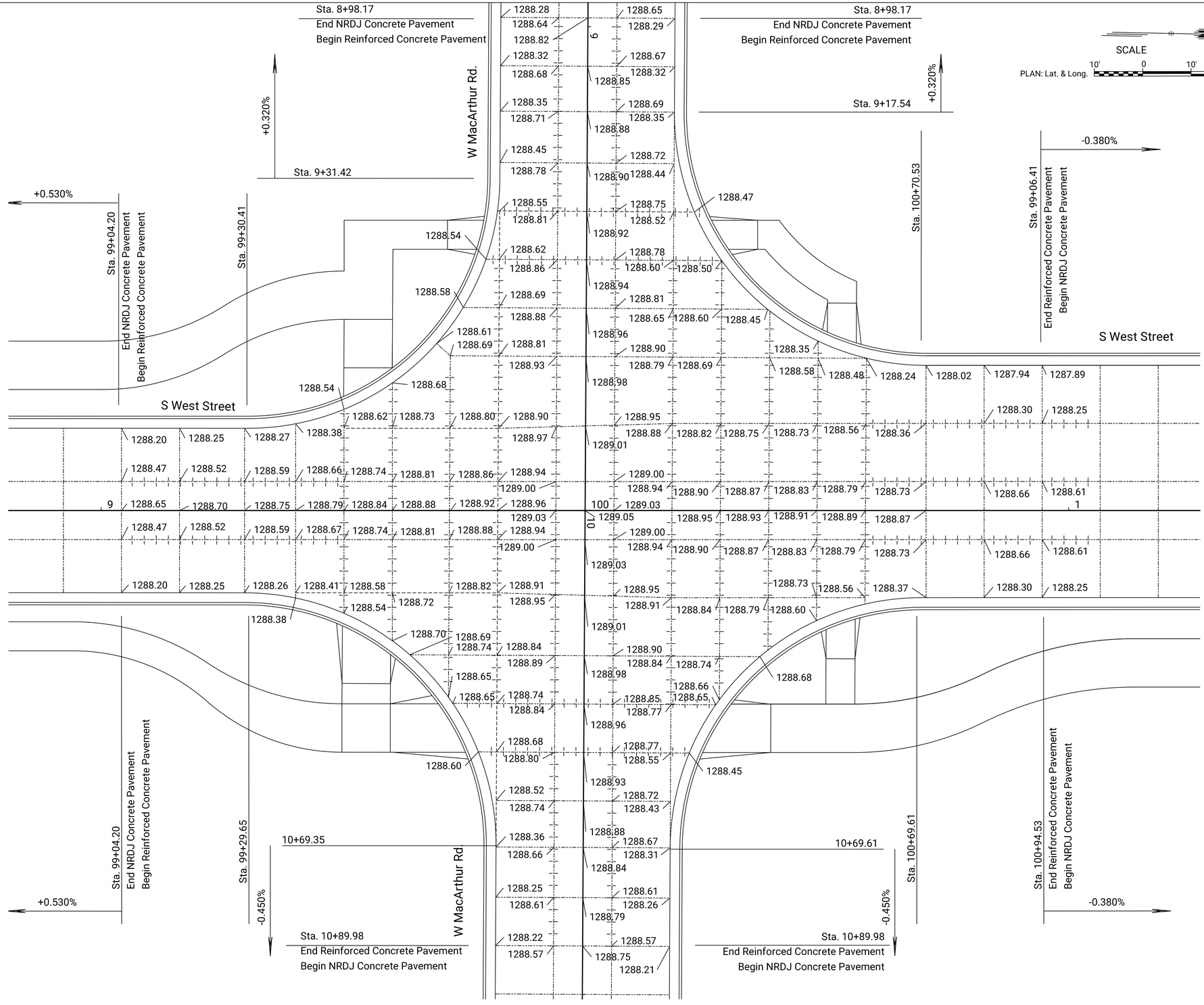
WEST ST & MACARTHUR RD INTERSECTION JOINT PLAN

REVISIONS	DESCRIPTION	DATE	NO.

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
23
SHEET 23 OF 128

10/29/2024 4:11:13 PM Files:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193IJT02.dgn



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CITY OF WICHITA

wsp

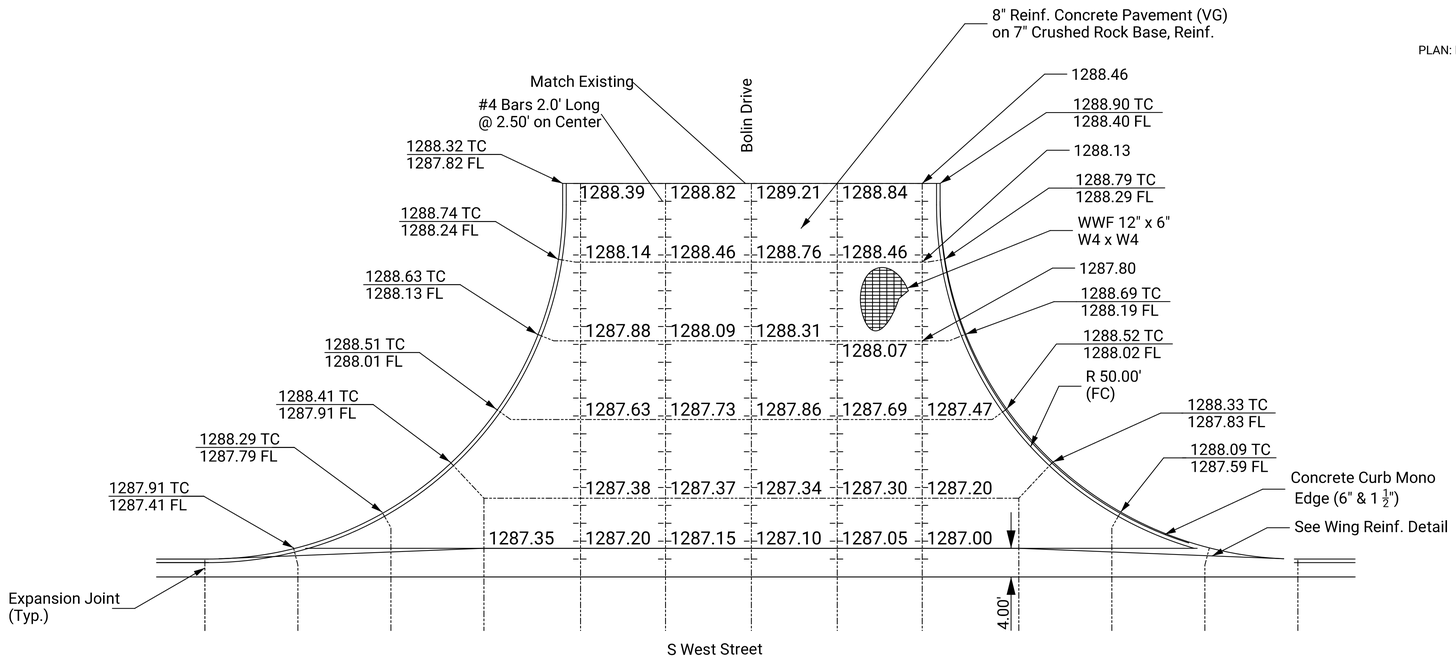
WEST STREET - I-235 TO MACARTHUR

WEST ST & MACARTHUR RD INTERSECTION GRADING PLAN

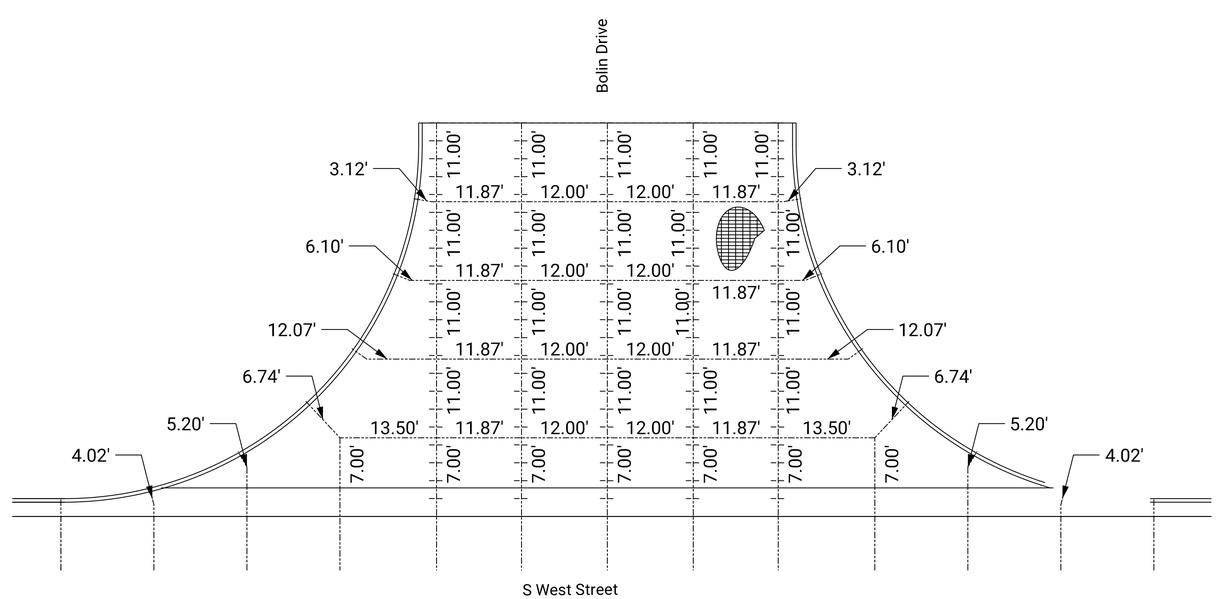
NO.	DATE	REVISIONS	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
24
SHEET 24 OF 128



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



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

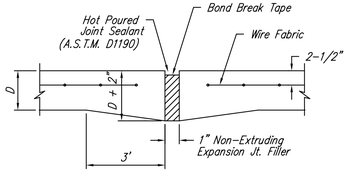
WEST STREET - I-235 TO MACARTHUR

VALLEY GUTTER GRADING & JOINT PLAN

REVISIONS			DESCRIPTION
			DATE
			NO.

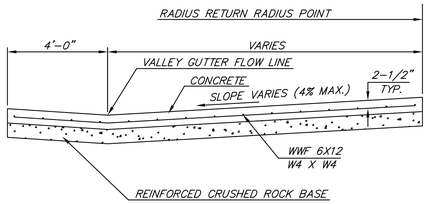
PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
25
SHEET 25 OF 128

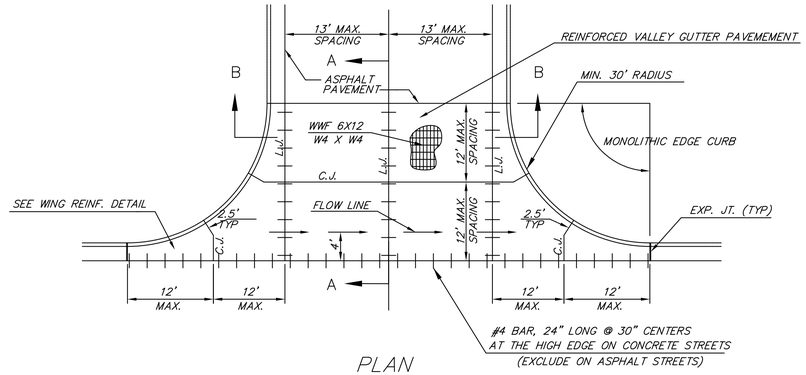


EXPANSION JOINT

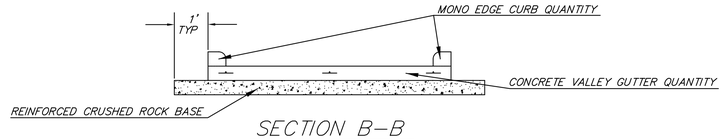
NOTE: Extra Thickness to be Subsidiary to Price of Square Yards Pavement



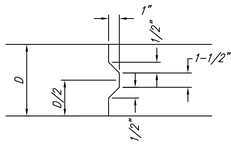
SECTION A-A



PLAN

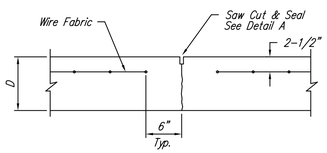


SECTION B-B

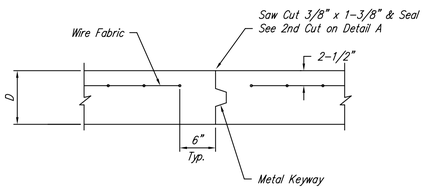


KEYWAY DETAIL

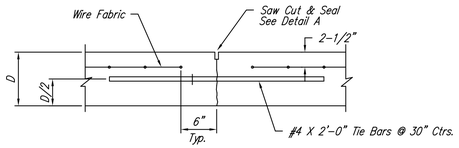
REINFORCED VALLEY GUTTER DETAIL



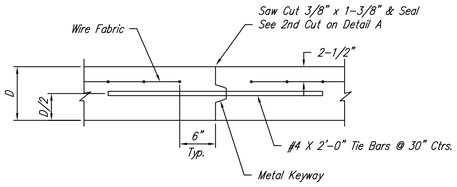
CONTRACTION JOINT DETAIL (C.J.)



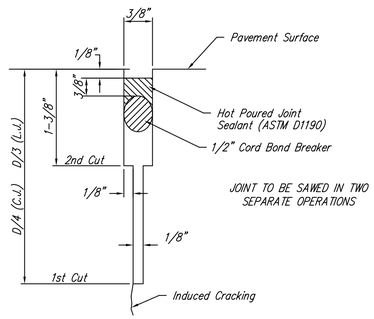
OPTIONAL CONTRACTION JOINT



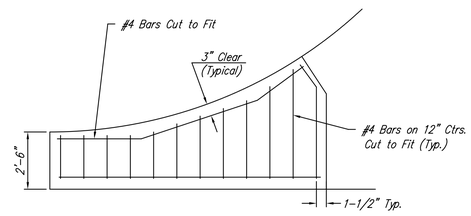
LONGITUDINAL JOINT DETAIL (L.J.)



OPTIONAL LONGITUDINAL JOINT DETAIL (L.J.)



SAW JOINT DETAIL
(DETAIL A)



WING REINFORCING DETAIL

REVISION MAY 2017	SECTION B-B, ROCK EXTENDED ONE FOOT BEYOND PAVEMENT

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

VALLEY GUTTER DETAILS

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET

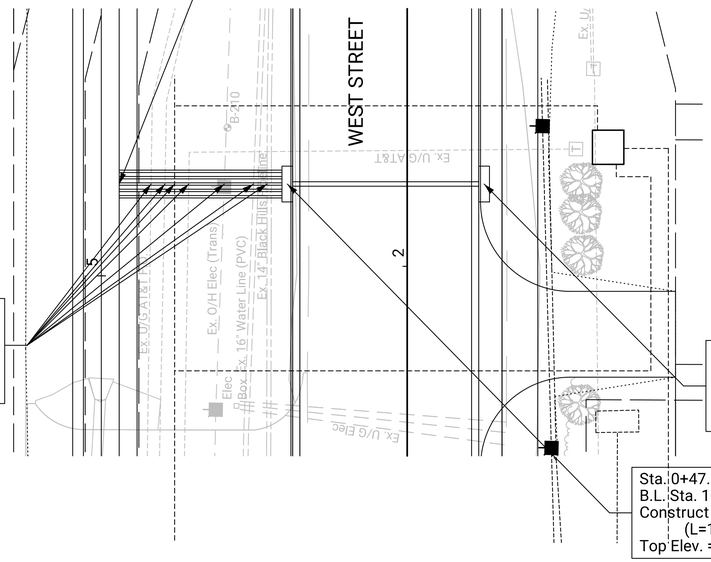
PV-109

BENCHMARK:

BM #210 - T-Post flush with the ground 250' north of MacArthur Road, 24.5' west of the west edge of West Street
B.L. Sta. 112+38.72, 50.22' Lt.
Elev. 1287.98

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 0 5'

Sta. 0+00.00, Begin SWS Line 1 =
B.L. Sta. 102+23.00, 80.50' Lt.



Caution!
Ex. AT&T F.O. (x3)
Ex. O/H Elec.
Ex. 16" Water
Ex. 14" Black Hills
Prop. AT&T F.O.

Sta. 1+02.00, End SWS Line 1 =
B.L. Sta. 102+23.00, 21.50' Rt.
Construct Inlet, Curb (Type 1)
(L=10' W=3')
Top Elev. = 1288.11

Sta. 0+47.00, SWS Line 1 =
B.L. Sta. 102+23.00, 33.50' Lt.
Construct Inlet, Curb (Type 1)
(L=10' W=3')
Top Elev. = 1287.75

SWS Line 1

The Contractor Shall Note that the SWS Pipe Connections to the Concrete Lined Ditch May Require Additional Reinforcement, Temporary Formwork, and Grouting. The Costs of this Labor and Materials shall be SUBSIDIARY to the Installation of the Pipe.

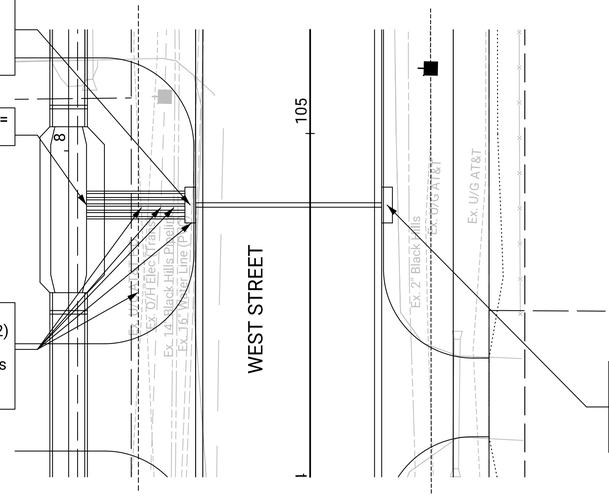
BENCHMARK:

BM #210 - T-Post flush with the ground 250' north of MacArthur Road, 24.5' west of the west edge of West Street
B.L. Sta. 102+38.72, 50.22' Lt.
Elev. 1287.98 (NAVD 88)

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 0 5'

Sta. 0+29.00, SWS Line 2 =
B.L. Sta. 104+80.00, 33.50' Lt.
Construct Inlet, Curb (Type 1)
(L=10' W=3')
Top Elev. = 1286.78

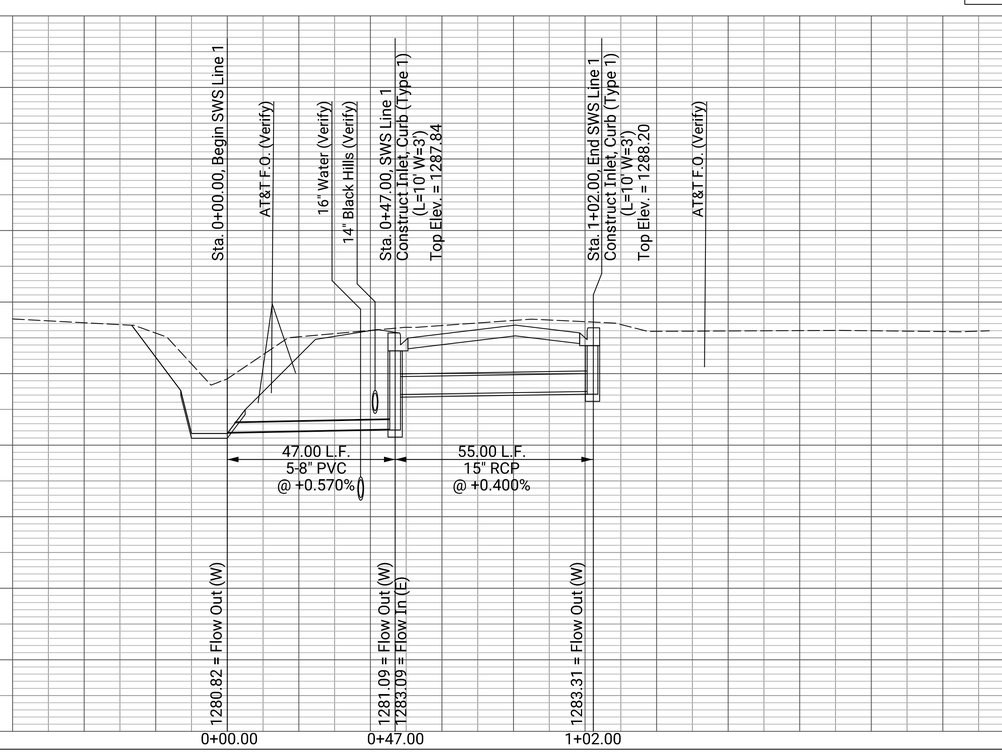
Sta. 0+00.00, Begin SWS Line 2 =
B.L. Sta. 104+80.00, 62.50' Lt.

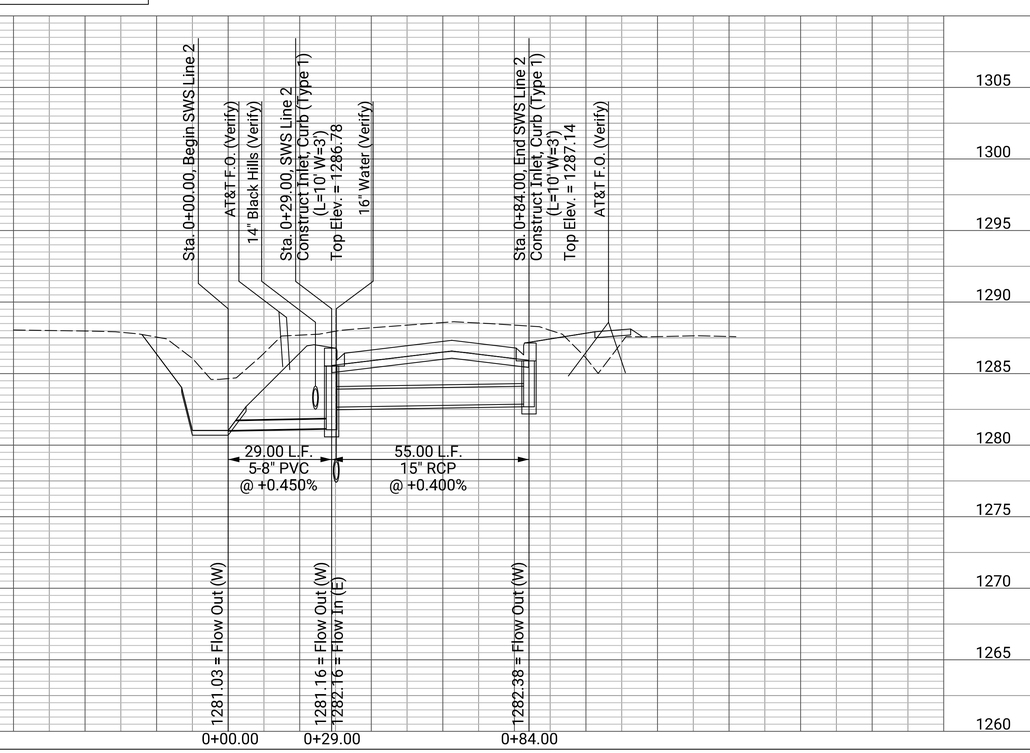


Caution!
Ex. AT&T F.O. (x2)
Ex. O/H Elec.
Ex. 14" Black Hills
Ex. 16" Water
Prop. AT&T F.O.

Sta. 0+84.00, End SWS Line 2 =
B.L. Sta. 104+80.00, 21.50' Rt.
Construct Inlet, Curb (Type 1)
(L=10' W=3')
Top Elev. = 1287.14

SWS Line 2





CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR
SWS PLAN & PROFILE
SWS LINE 1 & SWS LINE 2

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
27
SHEET 27 OF 128

10/29/2024 4:11:56 PM Files\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193SWPLN01.dgn

BENCHMARK:

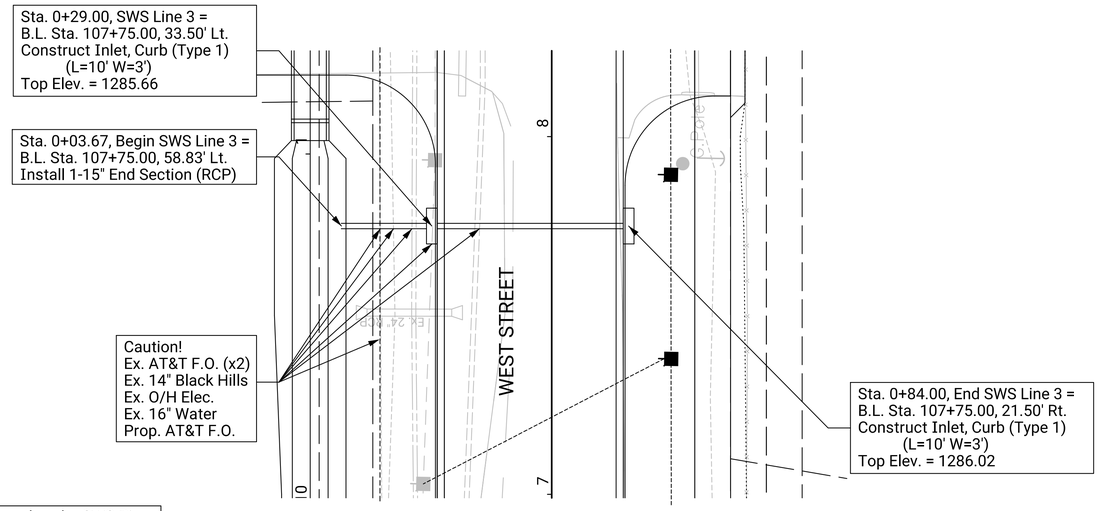
BM #211 - Chisled "□" on top of the south curb of the north entrance to Phat An Temple of the east side of West Street
B.L. Sta. 109+33.74, 38.23' Rt.
Elev. 1288.87 (NAVD 88)

SCALE

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

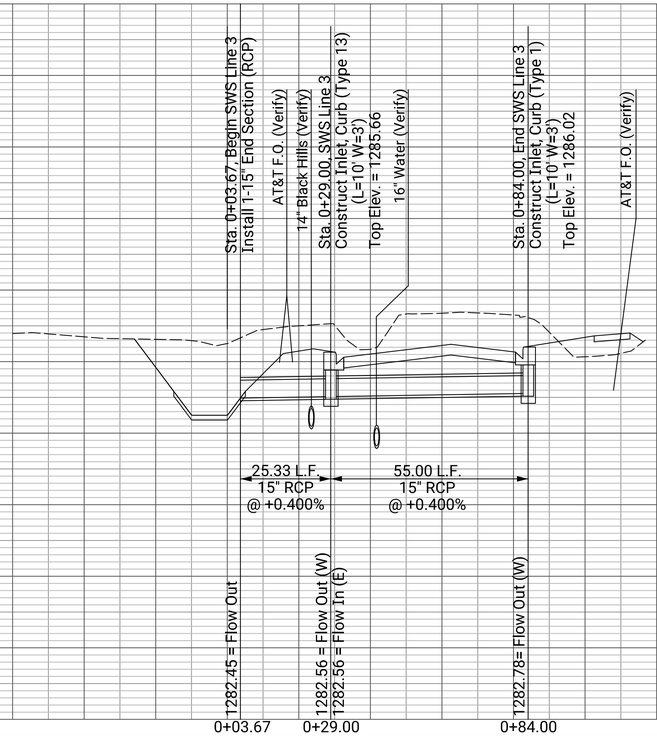
PROFILE: Horiz. same as above

Vert. 5 0



The Contractor Shall Note that the SWS Pipe Connections to the Concrete Lined Ditch May Require Additional Reinforcement, Temporary Formwork, and Grouting. The Costs of this Labor and Materials shall be SUBSIDIARY to the Installation of the Pipe.

SWS Line 3



WEST STREET - I-235 TO MACARTHUR

SWS PLAN & PROFILE
SWS LINE 3

REVISIONS			
NO.	DATE	DESCRIPTION	

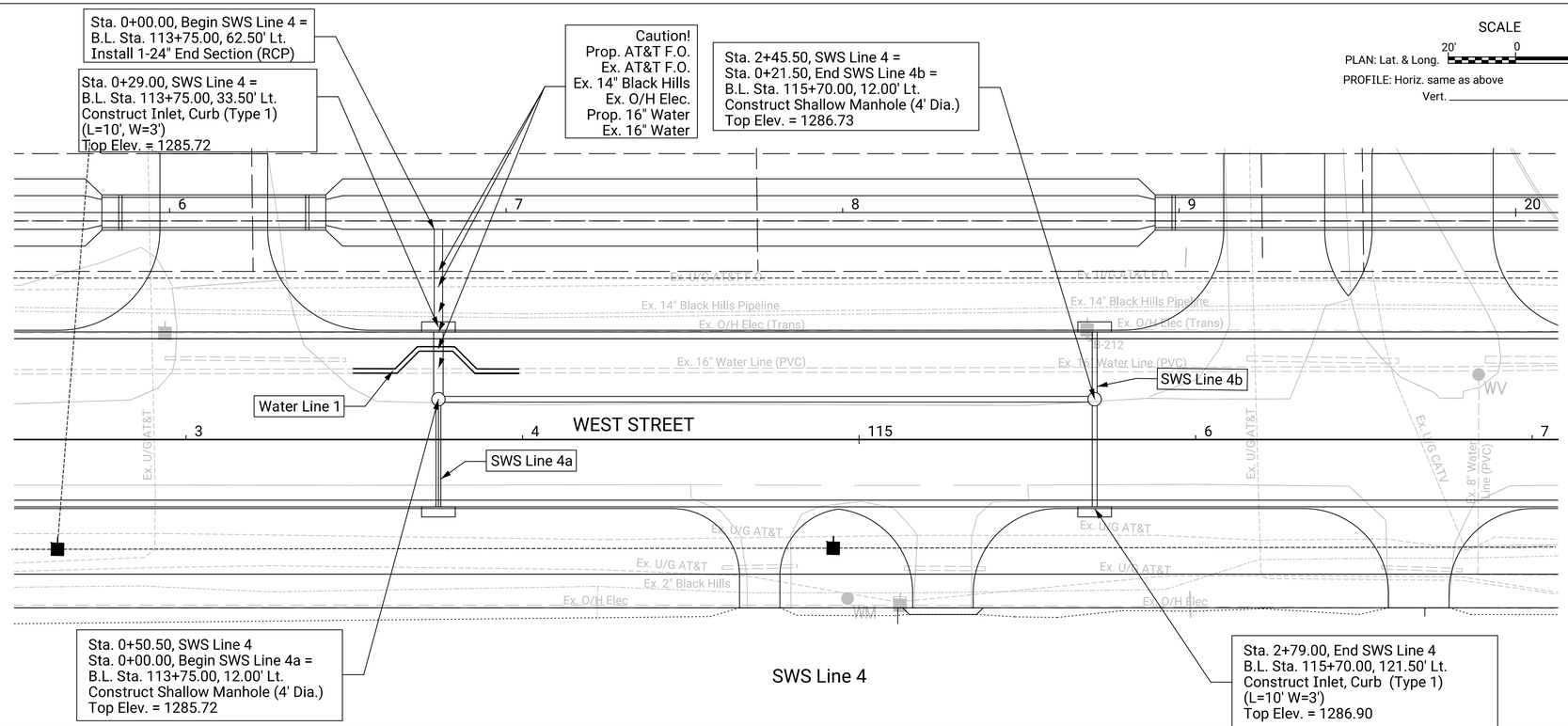
PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
28
SHEET 28 OF 128

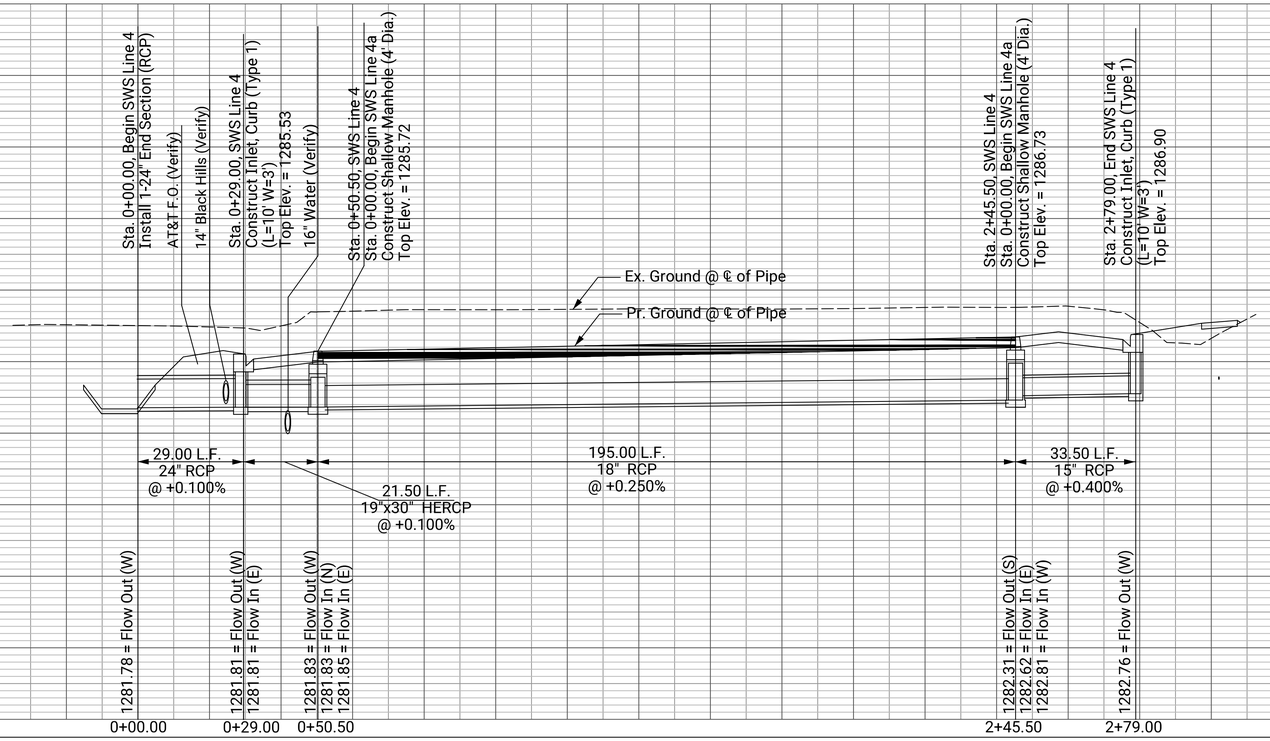
BENCHMARK:

BM #212 - T-Post flush with the ground 59' south of the entrance to Professional Cargo Service (PCS), 24.6' west of the west edge of West Street.
B.L. Sta. 115+68.49, 30.23' Lt.
Elev. 1288.76 (NAVD 88)

The Contractor Shall Note that the SWS Pipe Connections to the Concrete Lined Ditch May Require Additional Reinforcement, Temporary Formwork, and Grouting. The Costs of this Labor and Materials shall be SUBSIDIARY to the Installation of the Pipe.



SWS Line 4



CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

SWS PLAN & PROFILE
SWS LINE 4

REVISIONS			
		DESCRIPTION	DATE	NO.

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

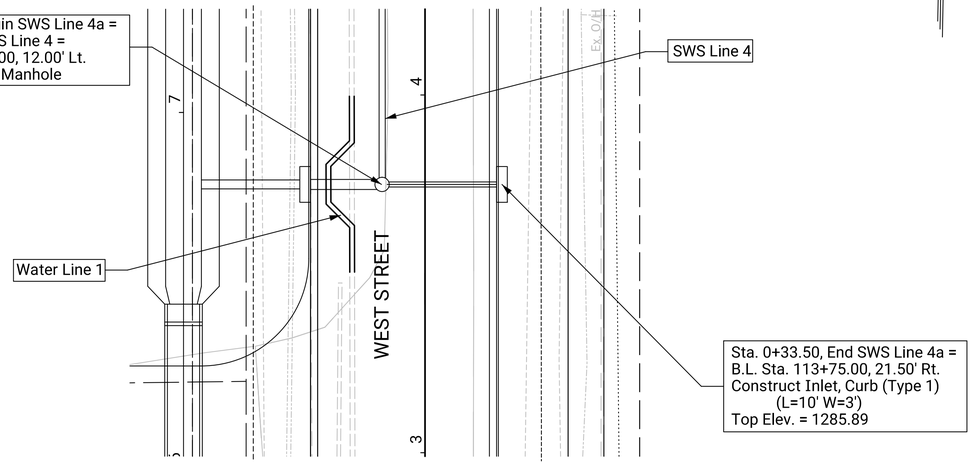
SHEET NO
29
SHEET 29 OF 128

10/29/2024 4:12:12 PM File:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193SWPLN03.dgn

BENCHMARK:

BM #212 - T-Post flush with the ground 59' south of the entrance to Professional Cargo Service (PCS), 24.6' west of the west edge of West Street.
B.L. Sta. 115+68.49, 30.23' Lt.
Elev. 1288.76 (NAVD 88)

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 5' 0

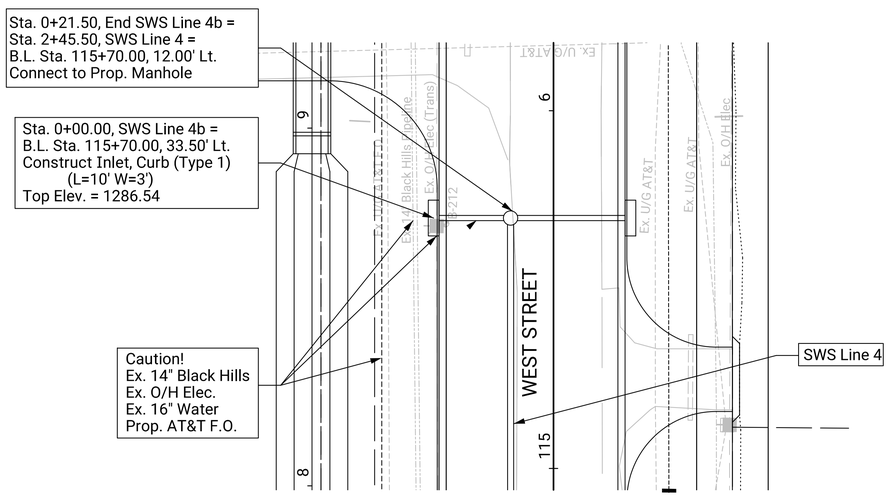


SWS Line 4a

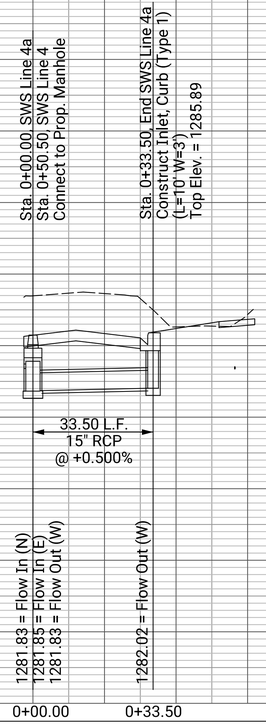
BENCHMARK:

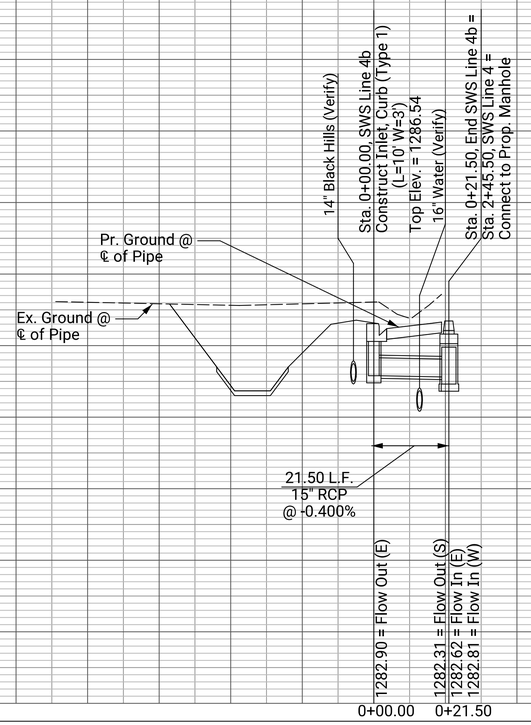
BM #212 - T-Post flush with the ground 59' south of the entrance to Professional Cargo Service (PCS), 24.6' west of the west edge of West Street.
B.L. Sta. 115+68.49, 30.23' Lt.
Elev. 1288.76 (NAVD 88)

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 5' 0



SWS Line 4b





WEST STREET - I-235 TO MACARTHUR

SWS PLAN & PROFILE
SWS LINE 4a & SWS LINE 4b

REVISIONS			
NO.	DATE	DESCRIPTION	

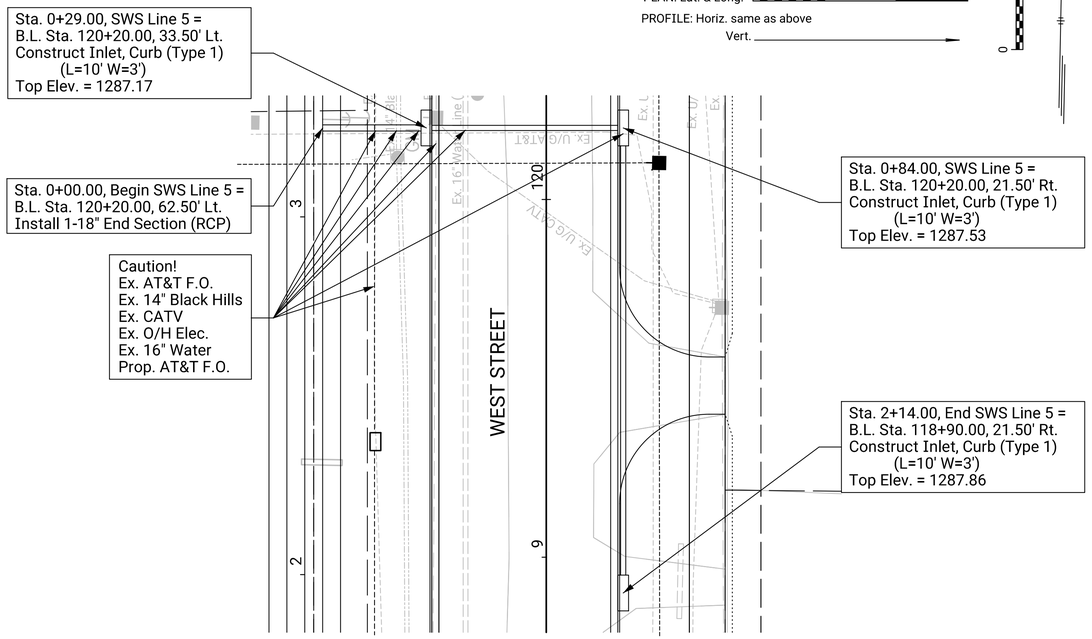
PROJ NO:	3090119
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
30
SHEET 30 OF 128

BENCHMARK:

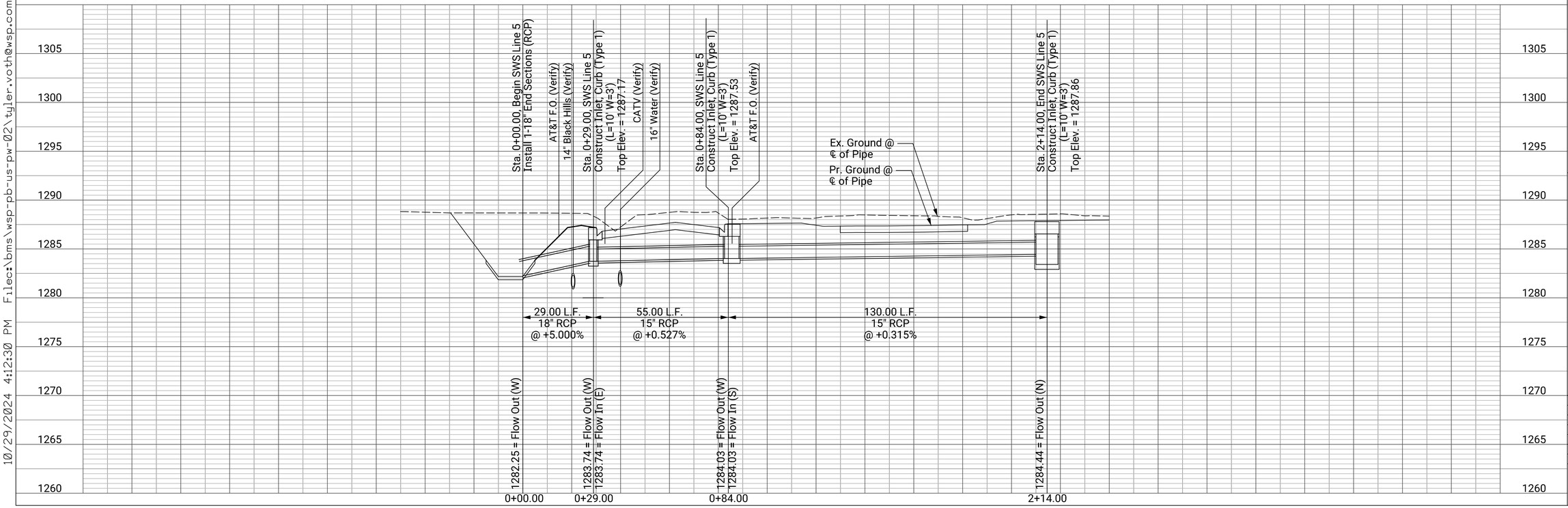
BM #213 - T-Post flush with the ground 45.4' north of an asphalt drive, 29.2' east of the east edge of West Street, 10' west of a power pole.
B.L. Sta. 122+39.98, 41.22' Rt.
Elev. 1286.85 (NAVD 88)

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert. 5' 0



SWS Line 5

The Contractor Shall Note that the SWS Pipe Connections to the Concrete Lined Ditch May Require Additional Reinforcement, Temporary Formwork, and Grouting. The Costs of this Labor and Materials shall be SUBSIDIARY to the Installation of the Pipe.



WEST STREET - I-235 TO MACARTHUR

SWS PLAN & PROFILE
SWS LINE 5

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
31
SHEET 31 OF 128

10/29/2024 4:12:30 PM File:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193SWPLN05.dgn

Sta. 0+29.00, SWS Line 6 =
Begin Sta. 0+00.00, SWS Line 6a =
B.L. Sta. 122+50.00, 33.50' Lt.
Construct Inlet, Curb (Type 1)
(L=10' W=3')
Top Elev. = 1286.60

Sta. 0+00.00, Begin SWS Line 6 =
B.L. Sta. 122+50.00, 62.50' Lt.
Install 1-29"x45" End Section (HERCP)

Caution!
Prop AT&T FO
Ex. U/G AT&T
Ex. 14" Black Hills
Ex. 2" Black Hills

Caution!
Ex. O/H Elec.
Ex. U/G Elec
Ex. AT&T (x3)
Ex. 2" Black Hills

The Contractor Shall Note that the SWS Pipe Connections to the Concrete Lined Ditch May Require Additional Reinforcement, Temporary Formwork, and Grouting. The Costs of this Labor and Materials shall be SUBSIDIARY to the Installation of the Pipe.

BENCHMARK:

BM #213 - T-Post flush with the ground 45.4' north of an asphalt drive, 29.2' east of the east edge of West Street, 10' west of a power pole.
B.L. Sta. 122+39.98, 41.22' Rt.
Elev. 1286.85 (NAVD 88)

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 5 0

Caution!
Ex. O/H Elec.
Ex. 16" Water
Prop 16" Water

Water Line 2

SWS Line 6a

WEST STREET

Caution
Ex. U/G Elec

SWS Line 6b

Sta. 0+84.50, SWS Line 6 =
Sta. 0+00.00, Begin SWS Line 6b =
B.L. Sta. 122+50.00, 22.00' Rt.
Construct Inlet, Curb (Type 1)
(L=10' W=4')
Top Elev. = 1286.96

Sta. 3+34.50, SWS Line 6 =
B.L. Sta. 125+00.00, 22.00' Rt.
Construct Inlet, Curb (Type 1)
(L=10' W=4')
Top Elev. = 1287.83

Sta. 3+77.50, End SWS Line 6 =
B.L. Sta. 124+78.92, 58.94' Rt.
Construct Area Inlet
(L=5' W=4')
Top Elev. = 1288.01

SWS Line 6

Sta. 0+00.00, SWS Line 6
Install 1:29"x45" End Section (HERCP)
1282.36 = Flow Out (W)

AT&T F.O. (Verify)

14" Black Hills (Verify)

Sta. 0+29.00, SWS Line 6
Begin Sta. 0+00.00, SWS Line 6a
Construct Inlet, Curb (Type 1)
(L=10' W=4') Top Elev. = 1286.60
1282.39 = Flow Out (W)
1282.39= Flow In (E)
1282.50= Flow In (N)

16" Water (Verify)

Sta. 0+84.50, SWS Line 6
Sta. 0+00.00, Begin SWS Line 6b
Construct Inlet, Curb (Type 1)
(L=10' W=4')
Top Elev. = 1286.96
1282.45 = Flow Out (W)
1282.45 = Flow In (N)
1282.50= Flow In (E)

Ex. U/G Elec

Sta. 3+34.50, SWS Line 6
Construct Inlet, Curb (Type 1)
(L=10' W=4')
Top Elev. = 1287.83
1283.20 = Flow Out (S)
1284.00 = Flow In (SE)

AT&T F.O. (Verify)

U/G Elec (Verify)

X" Black Hills (Verify)

Sta. 3+77.50, SWS Line 6
Construct Inlet, Curb (Type 1)
(L=10' W=4')
Top Elev. = 1288.01
1284.54 = Flow Out (NW)

55.50 L.F.
2-18" RCP
@ +0.100%

250.00 L.F.
19"x30" RCP
@ +0.300%

43.00 L.F.
24" RCP
@ +1.260%

29.00 L.F.
29"x45" HERCP
@ +0.100%

1305 1300 1295 1290 1285 1280 1275 1270 1265 1260

0+00.00 0+29.00 0+84.50 3+34.50 3+77.50

WEST STREET - I-235 TO MACARTHUR

SWS PLAN & PROFILE
SWS LINE 6

REVISIONS			DESCRIPTION	DATE	NO.

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
32
SHEET 32 OF 128

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Begin Sta. 0+00.00, SWS Line 6a =
Sta. 0+29.00, SWS Line 6 =
B.L. Sta. 122+50.00, 33.50' Lt.
Connect to Prop. Inlet

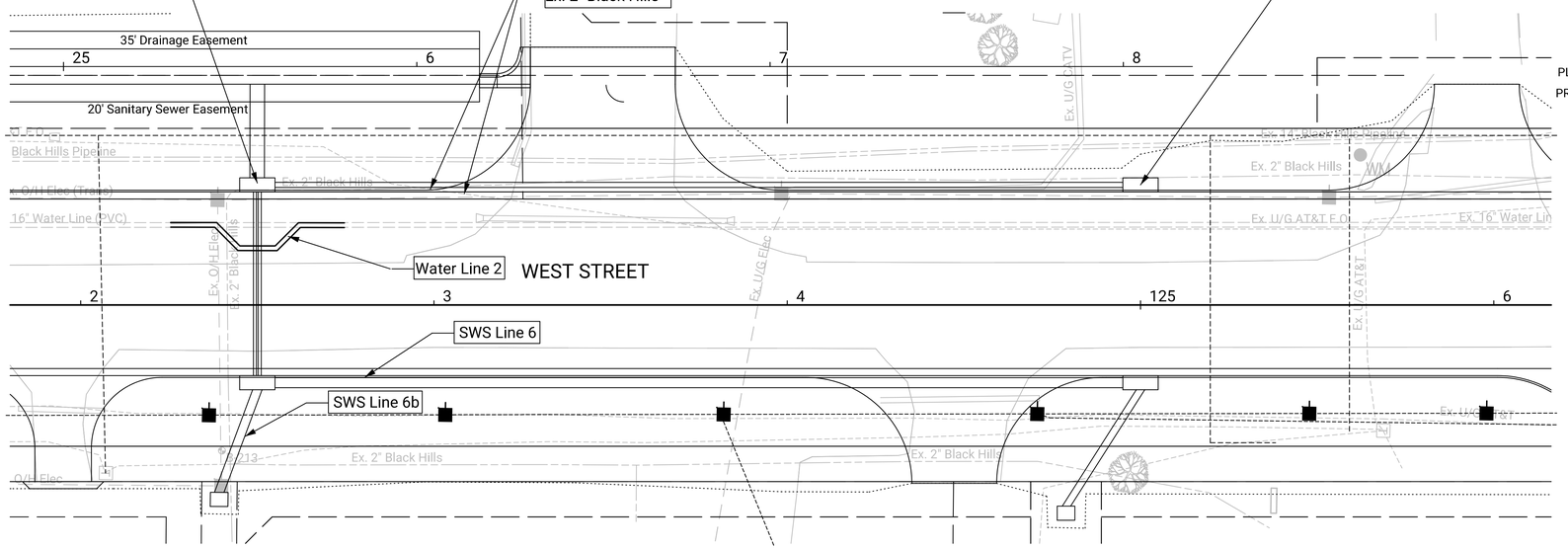
Caution!
Ex. AT&T F.O.
Ex. 2" Black Hills

End Sta. 2+50.00, SWS Line 6a =
B.L. Sta. 125+00.00, 33.50' Lt.
Construct Inlet, Curb (Type 1)
(L=10' W=3')
Top Elev. = 1287.47

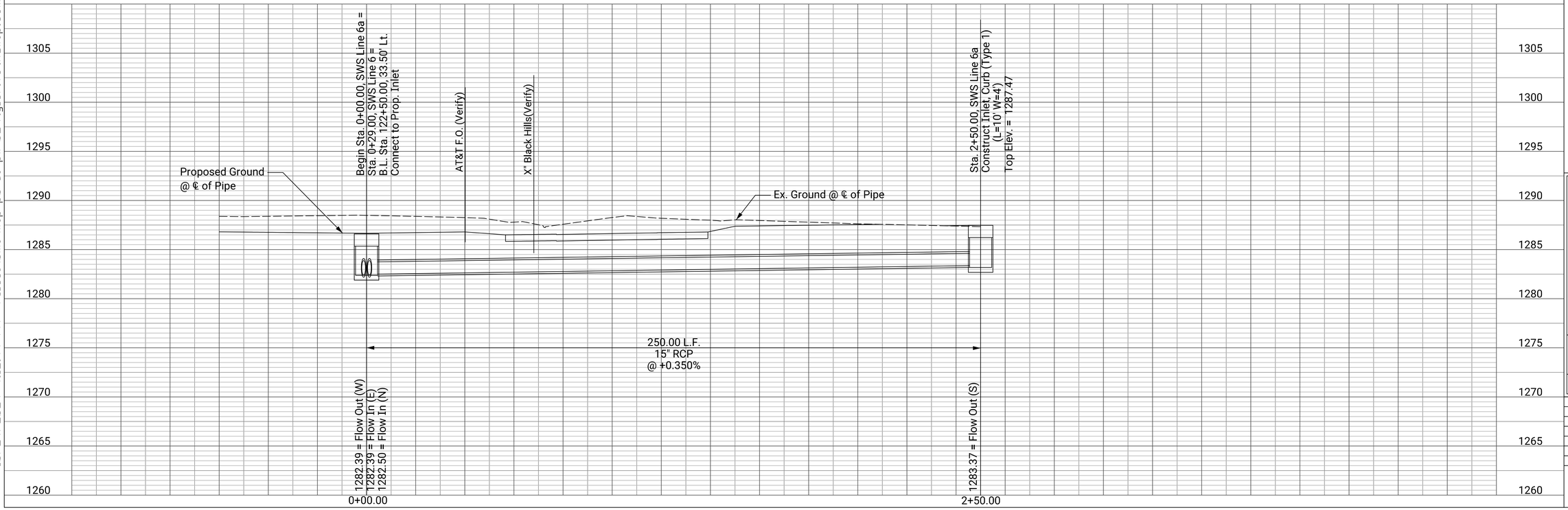
BENCHMARK:

BM #213 - T-Post flush with the ground 45.4' north of an asphalt drive, 29.2' east of the east edge of West Street, 10' west of a power pole.
B.L. Sta. 122+39.98, 41.22' Rt.
Elev. 1286.85 (NAVD 88)

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 5 0



SWS Line 6a



WEST STREET - I-235 TO MACARTHUR

SWS PLAN & PROFILE
SWS LINE 6a

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	3090119
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
33
SHEET 33 OF 128

BENCHMARK:

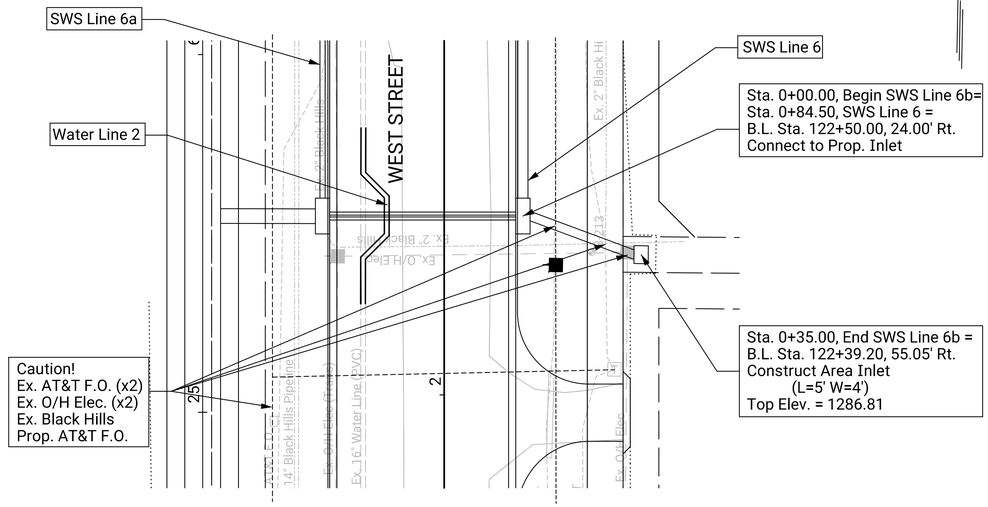
BM #213 - T-Post flush with the ground 45.4' north of an asphalt drive, 29.2' east of the east edge of West Street, 10' west of a power pole.
B.L. Sta. 122+39.98, 41.22' Rt.
Elev. 1286.85 (NAVD 88)

SCALE

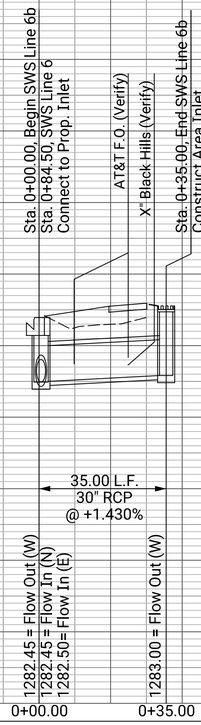
PLAN: Lat. & Long. 20' 0 20' 40'

PROFILE: Horiz. same as above

Vert. 5' 0



SWS Line 6b



BENCHMARK:

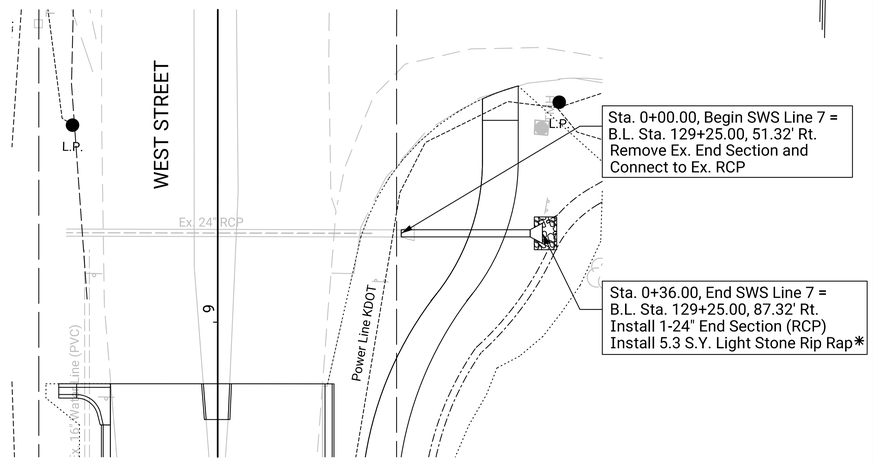
BM #214 - Chisled "□" on the west end of the south bullnose of the island south of the east bound I-235 Ramp
B.L. Sta. 128+50.25, 1.47' Lt.
Elev. 1288.54 (NAVD 88)

SCALE

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

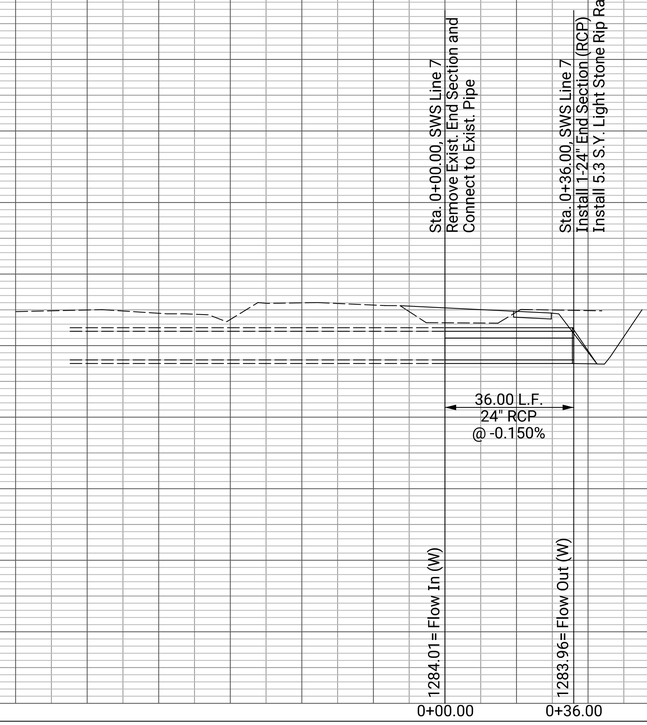
PROFILE: Horiz. same as above

Vert. 5' 0



SWS Line 7

* All Costs Associated with the Installation of the Light Stone Rip Rap Shall be SUBSIDIARY to the Installation of the 24" RCP.



CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

SWS PLAN & PROFILE
SWS LINE 6b & SWS LINE 7

REVISIONS		
NO.	DATE	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO 34

SHEET 34 OF 128

10/29/2024 4:12:50 PM File:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193SWPLN08.dgn

Sta. 0+00.00, Begin Drainage Ditch
B.L. Sta. 96+98.59, 84.93' Lt.
Construct 10' Wide Concrete
Ditch Liner (5" Thick)
Sta. 0+51.03, Drainage Ditch
B.L. Sta. 97+49.05, 92.50' Lt.
Deflect Concrete Ditch Liner
8°31'48" Rt.
Sta. 3+04.53, Drainage Ditch
B.L. Sta. 100+02.60, 92.50' Lt.
Install 72.72' L.F. 9'x4' Reinf.
Concrete Box Culvert (Precast)
and 9'x4' Reinf. Concrete
Wingwalls (Precast) on Both Sides
Sta. 2+62.17, Drainage Ditch
B.L. Sta. 99+60.19, 92.50' Lt.
Tie Concrete Ditch Liner to
Precast Wingwall Section.
See Detail, Sheet 49.
BENCHMARK:
BM #210 - T-Post flush with the ground 250' north of
MacArthur Road, 24.5' west of the west edge of West Street
B.L. Sta. 102+38.72, 50.22' Lt.
Elev. 1287.98 (NAVD 88)
SCALE
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert.
Sta. 5+30.00 Match Line
Sta. 3+46.89, Drainage Ditch
B.L. Sta. 100+44.36, 85.50' Lt.
Tie Concrete Ditch Liner to
Precast Wingwall Section.
See Detail, Sheet 49.
Sta. 3+78.07, Drainage Ditch
B.L. Sta. 100+75.41, 85.50' Lt.
Deflect Concrete Ditch Liner
12°24'29" Lt.
10' Temp Esmt.
Temp. Esmt.
Perm. Drainage Esmt.
Prop. 35' Drain. Esmt.
Exist. R/W
75' R/W
MACARTHUR ROAD
WEST STREET
Ex. 20' SS Esmt.
Ex. 35' Drain. Esmt.
Ex. O/H Elec
Ex. 16" KGS Pipeline (Abandoned)
Ex. 14" Black Hills Pipeline
Ex. O/H Elec (Trans)
Ex. 12" Water Line (PVC)
Ex. 14" Black Hills Pipeline
Ex. U/G AT&T F.O.
Ex. 16" Water Line (PVC)
Caution!
Abnd. 10" KGS
Ex. 6" Black Hills
Ex. O/H Elec
Ex. 8" KGS
Caution!
Abnd. 4" Conoco
Ex. 4" Conoco
Ex. Elec. Duct
Ex. U/G AT&T
Ex. 12" Water
Ex. AT&T F.O.
Prop. 4" Phili
SWS LINE 1
2.05%
1.81%
Drainage Ditch
Sta. 0+00.00, Begin Drainage Ditch
Construct 10' Wide Concrete
Ditch Liner (5" Thick)
Abnd. 10" KGS (Verify)
Sta. 2+62.17, Drainage Ditch
Tie Concrete Ditch Liner to
Precast Wingwall Section
Sta. 3+46.89, Drainage Ditch
Tie Concrete Ditch Liner to
Precast Wingwall Section
Sta. 5+30.00
Match Line
Proposed Ground
@ ℄ of Drainage Ditch
Ex. Ground @ ℄ of Drainage Ditch
262.17 L.F.
10' Wide Concrete Ditch Liner
@ +0.08%
72.72 L.F.
9'x4' RCBC
@ +0.080%
183.11 L.F.
10' Wide Concrete Ditch Liner
@ +0.070%
1280.42 = Flow Out (S)
℄ Elev. = 1280.50
℄ Elev. = 1280.58
℄ Elev. = 1280.63
℄ Elev. = 1280.68
℄ Elev. = 1280.70
℄ Elev. = 1280.74
℄ Elev. = 1280.81
1305
1300
1295
1290
1285
1280
1275
1270
1265
1260
0+00
1+00
2+00
2+62.17
3+00
3+46.89
4+00
5+00
5+30.00

WEST STREET - I-235 TO MACARTHUR

DRAINAGE DITCH PLAN & PROFILE STA. 0+00.00 TO STA. 5+30.00

CITY OF WICHITA

WSP

NO.	DATE	REVISIONS	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024
SHEET NO	35

SHEET 35 OF 128

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Sta. 5+30.00
Match Line

Sta. 5+83.25, Drainage Ditch B.L. Sta. 102+80.60, 85.50' Lt. Deflect Concrete Ditch Liner 14°03'30" Rt.

Sta. 6+57.36, Drainage Ditch B.L. Sta. 103+52.48, 67.50' Lt. Deflect Concrete Ditch Liner 14°03'30" Lt.

Sta. 6+96.84, Drainage Ditch B.L. Sta. 103+96.96, 67.50' Lt. Tie Concrete Ditch Liner to Precast Wingwall Section. See Detail, Sheet 49.

Sta. 7+26.11, Drainage Ditch B.L. Sta. 104+26.23, 67.50' Lt. Install 46.54' L.F. 9'x4' Reinf. Concrete Box Culvert (Precast) and 9'x4' Reinf. Concrete Wingwalls (Precast) on Both Sides

Sta. 7+55.38, Drainage Ditch B.L. Sta. 104+55.50, 67.50' Lt. Tie Concrete Ditch Liner to Precast Wingwall Section. See Detail, Sheet 49.

Sta. 8+06.75, Drainage Ditch B.L. Sta. 105+01.87, 67.50' Lt. Tie Concrete Ditch Liner to Precast Wingwall Section. See Detail, Sheet 49.

Sta. 8+40.02, Drainage Ditch B.L. Sta. 105+35.14, 67.50' Lt. Install 54.54' L.F. 9'x4' Reinf. Concrete Box Culvert (Precast) and 9'x4' Reinf. Concrete Wingwalls (Precast) on Both Sides

Sta. 8+73.29, Drainage Ditch B.L. Sta. 105+68.41, 67.50' Lt. Tie Concrete Ditch Liner to Precast Wingwall Section. See Detail, Sheet 49.

Sta. 11+03.77 Drainage Ditch B.L. Sta. 107+98.89, 67.50' Lt. Tie Concrete Ditch Liner to Precast Wingwall Section. See Detail, Sheet 49.

Sta. 11+10.00
Match Line

SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert. 5' 0

10' Temp. Esmt.
Ex. 35' Drain. Esmt.
Ex. 20' SS Esmt.
50' R/W
Exist. R/W

Caution!
Ex. Gas S/L
Ex. U/G AT&T
Ex. O/H Elec
Ex. U/ G Duct

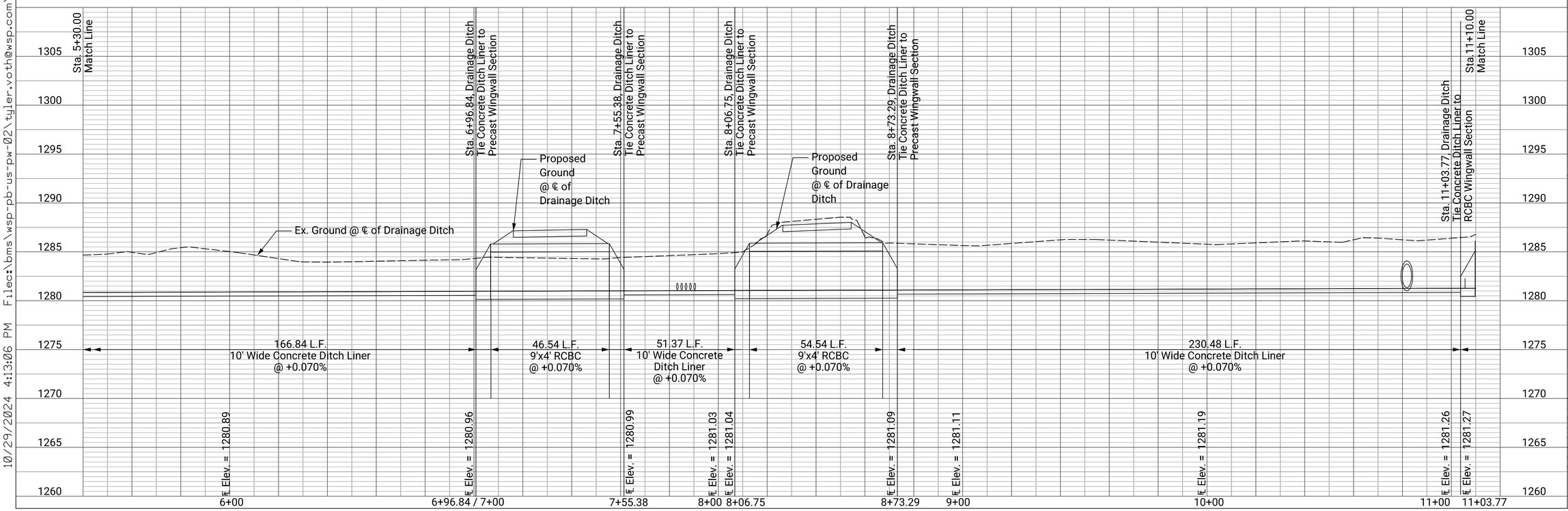
Caution!
Ex. Gas S/L
Ex.U/G AT&T

WEST STREET

SWS LINE 2

SWS LINE 3

Drainage Ditch



CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR
DRAINAGE DITCH PLAN & PROFILE STA. 5+30 STA. 11+10

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
36
SHEET 36 OF 128

10/29/2024 4:13:06 PM File:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193CDTPLN02.dgn

BENCHMARK:

BM #211 - Chisled "□" on top of the south curb of the north entrance to Phat An Temple of the east side of West Street
B.L. Sta. 109+33.74, 38.23' Rt.
Elev. 1288.87 (NAVD 88)

Sta. 11+10.00 Match Line

Sta. 11+40.07, Drainage Ditch
B.L. Sta. 108+35.19, 67.50' Lt.
Install 60.60' L.F. 9'x3' Reinf. Concrete Box Culvert (Precast) and 9'x3' Reinf. Concrete Wingwalls (Precast) on Both Sides

Sta. 11+76.37, Drainage Ditch
B.L. Sta. 108+71.49, 67.50' Lt.
Tie Concrete Ditch Liner to Precast Wingwall Section.
See Detail, Sheet 49.

Sta. 14+15.52 Drainage Ditch
B.L. Sta. 111+10.64, 67.50' Lt.
Install 60.60' L.F. 9'x3' Reinf. Concrete Box Culvert (Precast) and 9'x3' Reinf. Concrete Wingwalls (Precast) on Both Sides

Sta. 13+79.22, Drainage Ditch
B.L. Sta. 110+74.34, 67.50' Lt.
Tie Concrete Ditch Liner to Precast Wingwall Section.
See Detail, Sheet 49.

Sta. 14+51.82, Drainage Ditch
B.L. Sta. 111+46.94, 67.50' Lt.
Tie Concrete Ditch Liner to Precast Wingwall Section.
See Detail, Sheet .

Sta. 16+46.42, Drainage Ditch
B.L. Sta. 113+41.54, 67.50' Lt.
Tie Concrete Ditch Liner to Precast Wingwall Section.
See Detail, Sheet 49.

Sta. 16+13.15 Drainage Ditch
B.L. Sta. 113+08.27, 67.50' Lt.
Install 54.52' L.F. 9'x3' Reinf. Concrete Box Culvert (Precast) and 9'x3' Reinf. Concrete Wingwalls (Precast) on Both Sides

Sta. 15+79.88, Drainage Ditch
B.L. Sta. 112+75.00, 67.50' Lt.
Tie Concrete Ditch Liner to Precast Wingwall Section.
See Detail, Sheet 49.

SCALE
20' 0 20' 40'
PLAN: Lat. & Long.
5' 0
PROFILE: Horiz. same as above
Vert.

Sta. 16+90.00 Match Line

10' Temp Esmt.

Ex. 20' SS Esmt.

Ex. 35' Drain. Esmt.

50' R/W

Exist. R/W

Ex. U/G AT&T F.O.
Ex. 14" Black Hills Pipeline
Ex. O/H Elec (Trans)
Ex. 16" Water Line (PVC)
WV
Water (PVC)
GM
Ex. U/G CATV
Black Hills U/G AT&T

Caution!
Ex. Elec Duct
Ex.Gas S/L
Ex. U/G AT&T

Caution!
Ex. Elec Duct
Ex. U/G AT&T

WEST STREET

SWS LINE 4

Drainage Ditch

Sta. 11+00.00 Match Line
Sta. 11+76.37, Drainage Ditch Tie Concrete Ditch Liner to Precast Wingwall Section
Sta. 13+79.22, Drainage Ditch Tie Concrete Ditch Liner to Precast Wingwall Section
Sta. 14+46.94, Drainage Ditch Tie Concrete Ditch Liner to Precast Wingwall Section
Sta. 15+79.88, Drainage Ditch Tie Concrete Ditch Liner to Precast Wingwall Section
Sta. 16+48.41, Drainage Ditch Tie Concrete Ditch Liner to RCBC Wingwall Section
Sta. 16+90.00 Match Line

1305 1300 1295 1290 1285 1280 1275 1270 1265 1260

60.60 L.F.
9'x3' RCBC
@ +0.070%

202.85 L.F.
10' Wide Concrete Ditch Liner
@ +0.070%

60.60 L.F.
9'x3' RCBC
@ +0.070%

132.94 L.F.
10' Wide Concrete Ditch Liner
@ +0.070%

54.52 L.F.
9'x3' RCBC
@ +0.070%

41.59 L.F.
10' Wide Concrete Ditch Liner
@ +0.070%

ft Elev. = 1281.32
ft Elev. = 1281.36
ft Elev. = 1281.41
ft Elev. = 1281.47
ft Elev. = 1281.49
ft Elev. = 1281.53
ft Elev. = 1281.56
ft Elev. = 1281.62
ft Elev. = 1281.64
ft Elev. = 1281.67

11+76.37 12+00 13+00 13+79.22 14+00 14+52.81 15+00 15+80.66 16+00 16+48.42

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10/29/2024 4:13:14 PM
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CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR
DRAINAGE DITCH PLAN & PROFILE STA. 11+10 TO STA. 16+90

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
37
SHEET 37 OF 128

BENCHMARK:
BM #212 - T-Post flush with the ground 59' south of the entrance to Professional Cargo Service (PCS), 24.6' west of the west edge of West Street.
B.L. Sta. 115+68.49, 30.23' Lt.
Elev. 1288.76 (NAVD 88)
Sta. 16+90.00 Match Line
Sta. 18+92.85, Drainage Ditch
B.L. Sta. 115+87.97, 67.50' Lt.
Tie Concrete Ditch Liner to Precast Wingwall Section.
See Detail, Sheet 49.
Sta. 20+26.11 Drainage Ditch
B.L. Sta. 117+21.23, 67.50' Lt.
Install 254.52' L.F. 9'x3' Reinf. Concrete Box Culvert (Precast) and 9'x3' Reinf. Concrete Wingwalls (Precast) on Both Sides
Sta. 21+00.00 Drainage Ditch
B.L. Sta. 117+95.13, 67.50' Lt.
Install 9.00 L.F. 15" RCP* and 1-15" End Section (RCP) (W)
Upstream FL Elev. = 1287.00
Install 3.7 S.Y. Light Stone Rip Rap*
Install Access Manhole & Frame*
Top Elev. = 1289.00
SCALE
PLAN: Lat. & Long. 20' 0 20' 40'
PROFILE: Horiz. same as above
Vert.
5' 0
Sta. 22+70.00 Match Line
Sta. 21+59.37, Drainage Ditch
B.L. Sta. 118+54.49, 67.50' Lt.
Tie Concrete Ditch Liner to Precast Wingwall Section.
See Detail, Sheet 49.
15' Temp Esmt.
Temp. Esmt.
Ex. 35' Drain. Esmt.
Ex. 20' SS Esmt.
7
8
9
20
1
2
Exist. R/W
Ex. 14" Black Hills Pipeline
Ex. O/H Elec (Trans)
Ex. 16" Water Line (PVC)
50' R/W
SWS LINE 4b
SWS LINE 4
WV
WM
WEST STREET
Caution!
Ex. Water S/L
Ex. Elec Duct
4
115
6
7
8
9
*
All Costs Associated with the Installation of the 15" RCP, Rip Rap, and Access Manhole Shall be SUBSIDIARY to the Installation of the Reinforced Concrete Box Culvert.
Drainage Ditch
16+90.00 Match Line
22+70.00 Match Line
Sta. 18+92.85, Drainage Ditch
Tie Concrete Ditch Liner to Precast Wingwall Section
Sta. 21+00.00, Drainage Ditch
Tie 15" RCP to to Precast Culvert
Install Access Manhole & Frame
Top Elev. = 1289.00
Sta. 21+59.37, Drainage Ditch
Tie Concrete Ditch Liner to Precast Wingwall Section
Ex. Ground @ ℄ of Drainage Ditch
Proposed Ground @ ℄ of Drainage Ditch
1305
1300
1295
1290
1285
1280
1275
1270
1265
1260
202.85 L.F.
10' Wide Concrete Ditch Liner
@ +0.070%
254.52 L.F.
9'x3' RCBC
@ +0.080%
110.63 L.F.
10' Wide Concrete Ditch Liner
@ +0.080%
℄ Elev. = 1281.71
℄ Elev. = 1281.79
℄ Elev. = 1281.86
℄ Elev. = 1281.94
℄ Elev. = 1282.01
1283.25 = Flow In (W)
℄ Elev. = 1282.05
℄ Elev. = 1282.09
17+00
18+00
18+92.85
19+00
20+00
21+00
21+59.37
22+00

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CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

DRAINAGE DITCH PLAN & PROFILE
STA. 16+90.00 TO STA. 22+70.00

NO.	DATE	REVISIONS	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024
SHEET NO	38

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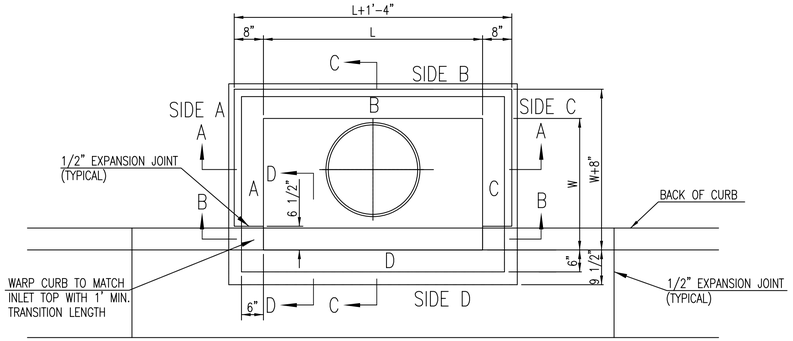
CITY OF WICHITA
WSP

WEST STREET - I-235 TO MACARTHUR
DRAINAGE DITCH PLAN & PROFILE
STA. 22+70.00 TO 26+17.76

NO.	DATE	REVISIONS DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
39

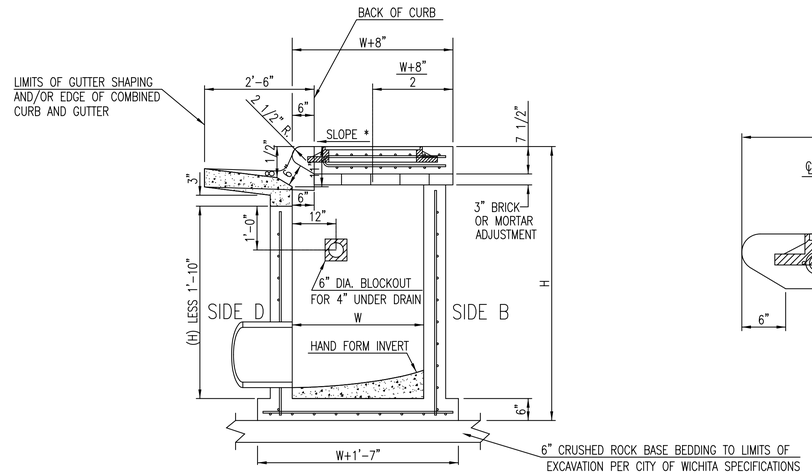


TOP VIEW

BAR SCHEDULE		
INLET OPENING	B1 BARS	SPACING
5'-0"	#4	4"
10'-0"	#6	3.5"

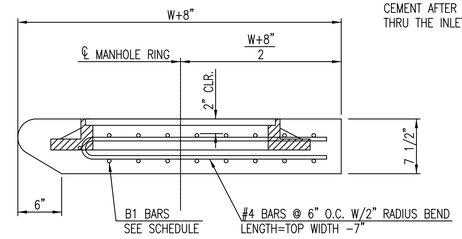
PRECAST CURB INLET WIDTHS				
W	PRE-CAST TOP SIZE			PIPE DIA.**
	WIDTH	LENGTH	TOP	
3'-0"	W+8"	L+1'-4"	7 1/2"	21" & SMALLER
4'-0"	W+8"	L+1'-4"	7 1/2"	24" & 30"
5'-0"	W+8"	L+1'-4"	7 1/2"	36" & 42"
6'-0"	W+8"	L+1'-4"	7 1/2"	48" & 54"
7'-0"	W+8"	L+1'-4"	7 1/2"	60" & 66"

** FOR PIPES PERPENDICULAR TO INLET WALL



SECTION "C-C"

NOTES:
* SLOPE OF INLET TOP TO MATCH SIDEWALK OR PARKING SLOPES WITHIN LIMITS INDICATED.



GENERAL NOTES

1. CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP OF THIS INLET WHEN W=5'-0" AND H=7'-0" OR LESS.
3. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
4. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
5. INLET FRAME AND COVER TO BE DEETER #2014, EJIW #1936 Z4, OR APPROVED EQUAL, SEE SW-303.
6. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.

SECTION "A-A"

SECTION "B-B"

SECTION "D-D"

REVISED: MARCH 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

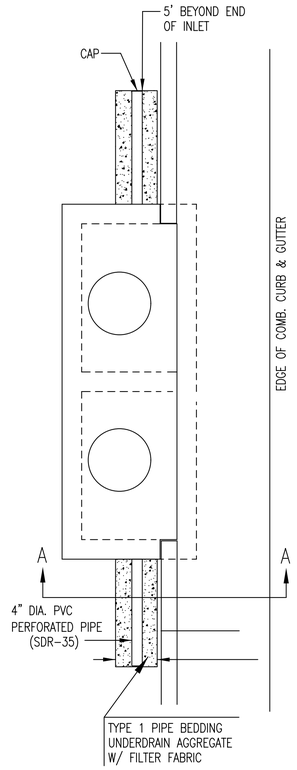
STANDARD TYPE 1
CURB INLET
5'-0" OR 10'-0" OPENING

CITY ENGINEER
PAUL GUNZELMAN, P.E.

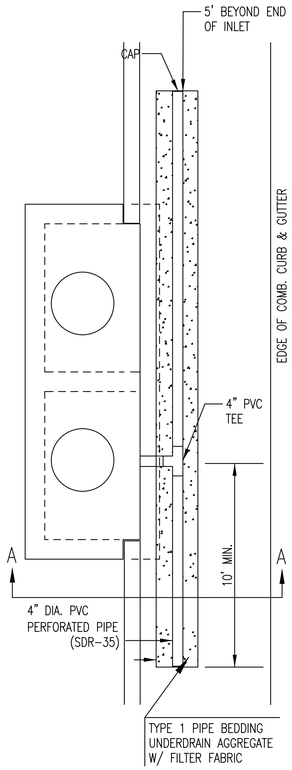
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

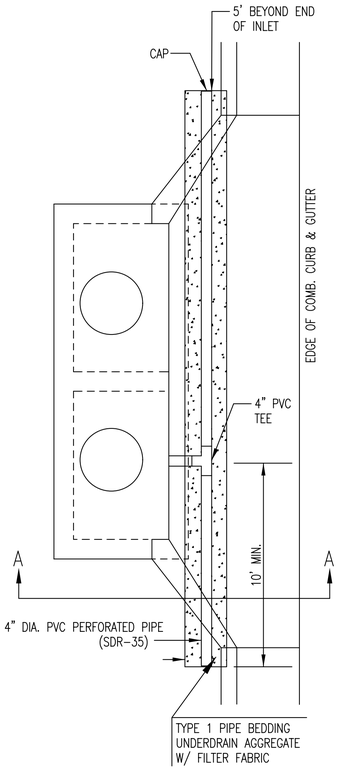
SW-101



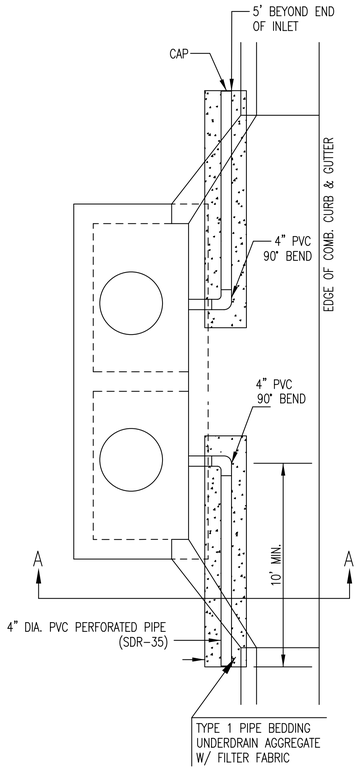
TYPE 1
OPTION 1



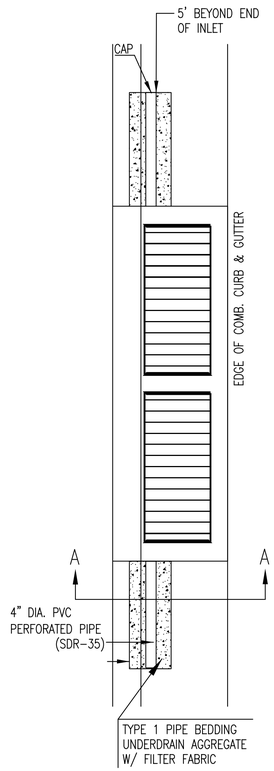
TYPE 1
OPTION 2



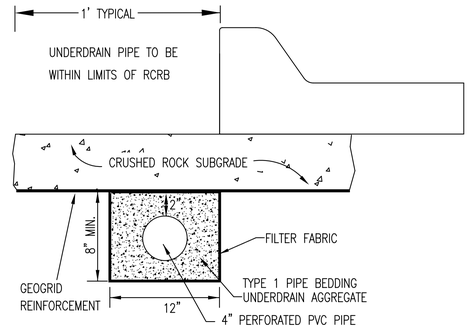
TYPE 1-A INLET
OPTION 1



TYPE 1-A INLET
OPTION 2



TYPE 2

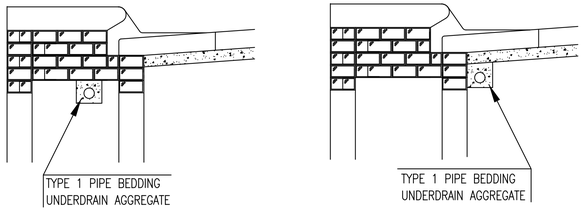


SECTION A-A (TYPICAL)

GENERAL NOTES

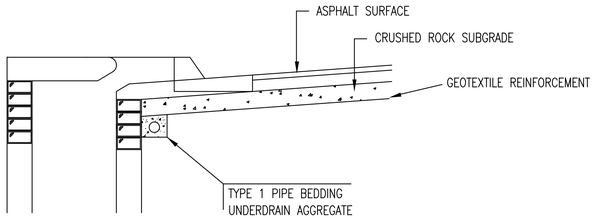
1. PAVEMENT CONTRACTOR WILL BE REQUIRED TO INSTALL SDR 35, 4" PERFORATED DRAIN PIPE AND TEE AS INDICATED IN THE DETAILS.
2. WHEN SWS CONSTRUCTED BY SEPARATE PROJECT, SWS CONTRACTOR SHALL INSTALL SDR 35, 4" DRAIN PIPE STUB ONLY THROUGH WALLS OF CURB INLETS AND CAP TO ALLOW FUTURE CONNECTION OF TEE AND ADDITIONAL DRAIN PIPE BY OTHERS.
2. UNDERDRAIN PIPE SHALL BE PAID AS A MEASURED QUANTITY BY THE LINEAL FOOT.

PAVEMENT UNDERDRAIN SHALL BE INSTALLED ON ALL CURB INLETS.



(MIN. 16 PERFORATIONS PER LIN. FT. @ 1/4" DIA.)
PERFORATIONS TO BE ON BOTTOM HALF

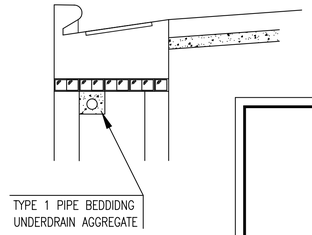
SECTION A-A



SECTION A-A

PAVEMENT UNDERDRAIN DETAIL

BID ITEM TO BE PROVIDED PER 4" PERFORATED UNDERDRAIN PIPE.



SECTION A-A

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

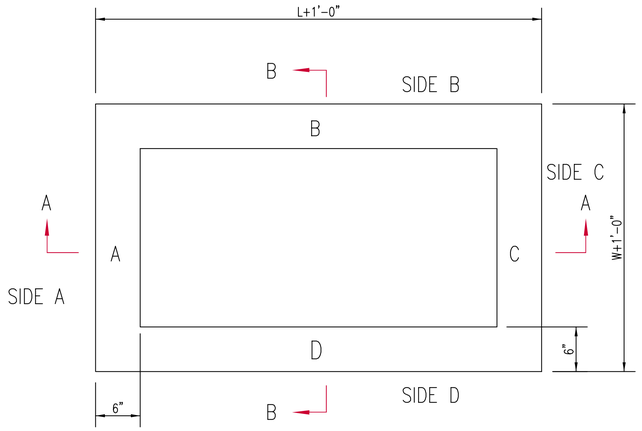
CURB INLET PAVEMENT UNDERDRAIN DETAIL

CITY ENGINEER
PAUL GUNZELMAN, P.E.

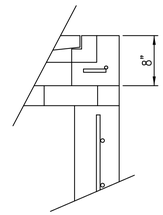
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

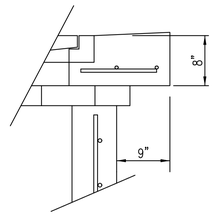
SW-111



TOP VIEW

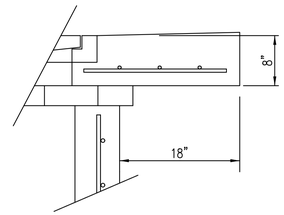


FLUSH STYLE TOP
NO APRON



9" APRON

* APRON TO EXTEND ON ALL 4 SIDES OF INLET. DESIGNER TO DESIGNATE APRON SIZE.



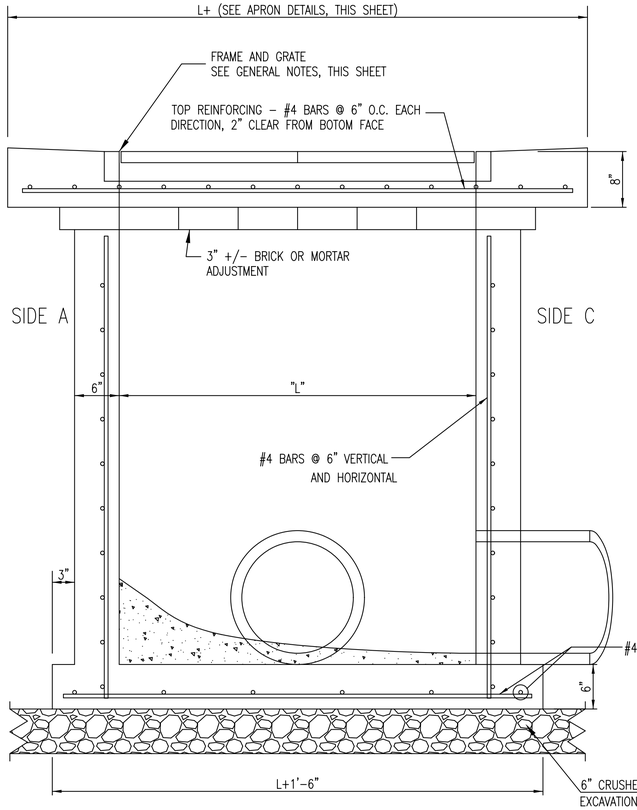
18" APRON

W=2' and L=2' for SINGLE DROP INLET
W=2' and L=4' for DOUBLE DROP INLET

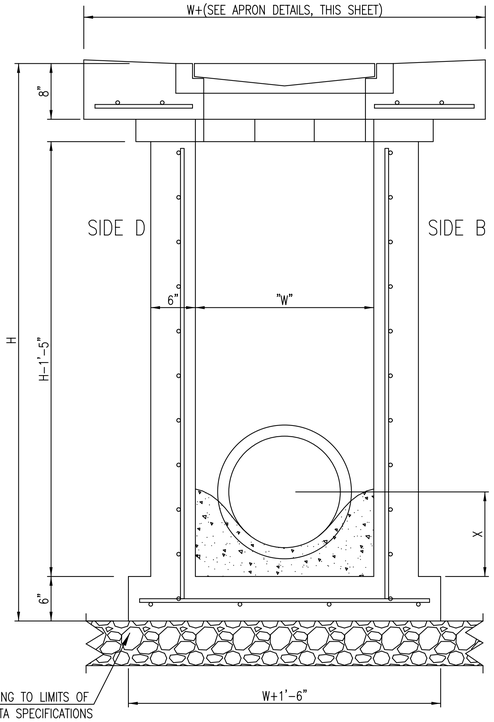
The structure(s) on this detail sheet are designed for HS-20 loading at these specific dimensions only. If larger dimensions are required, the ENGINEER shall provide a project specific structure design for approval by the City Engineer's office.

GENERAL NOTES

1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
3. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
4. INLET FRAME AND GRATE TO BE DEETER #2433, EJIW #5391-Z1 OR APPROVED EQUAL FOR 2'x2' SINGLE DROP INLET AND DEETER #2434, EJIW #5391 Z3 OR APPROVED EQUAL FOR 2'x4' DOUBLE DROP INLET.
5. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.

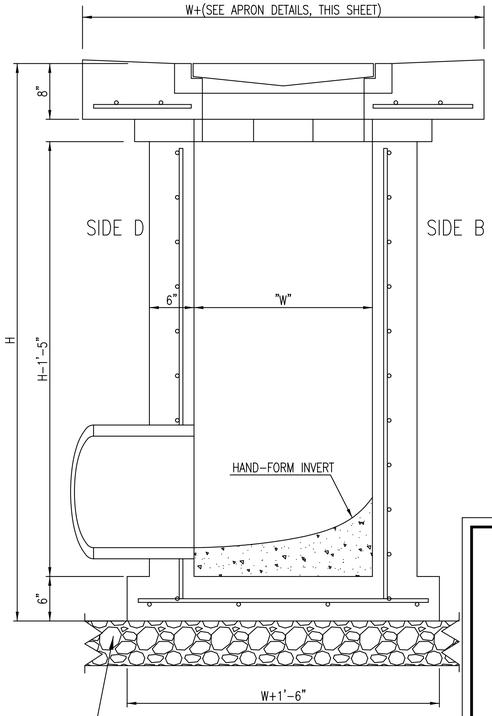


SECTION "A-A"



SECTION "B-B"
END OUTLET

6" CRUSHED ROCK BASE BEDDING TO LIMITS OF EXCAVATION PER CITY OF WICHITA SPECIFICATIONS



SECTION "B-B"
SIDE OUTLET

6" CRUSHED ROCK BASE BEDDING TO LIMITS OF EXCAVATION PER CITY OF WICHITA SPECIFICATIONS

REVISED: MARCH 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

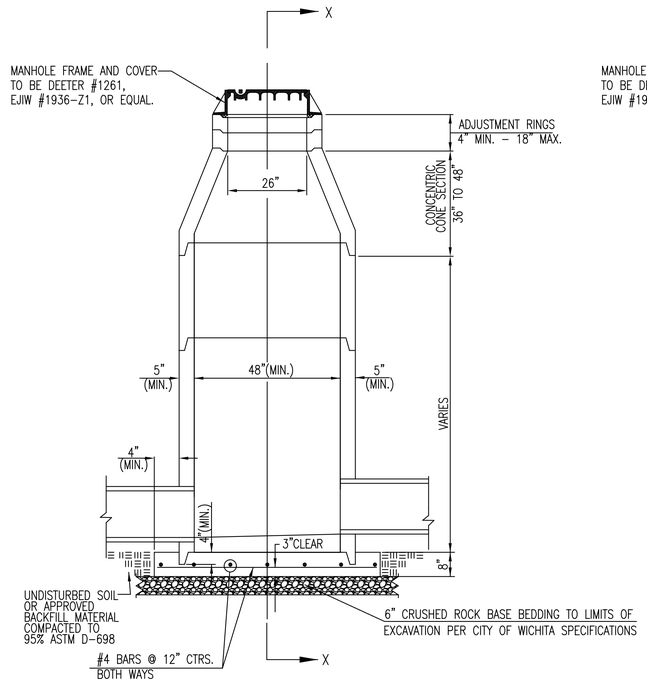
SINGLE/DOUBLE DROP INLET

CITY ENGINEER
PAUL GUNZELMAN, P.E.

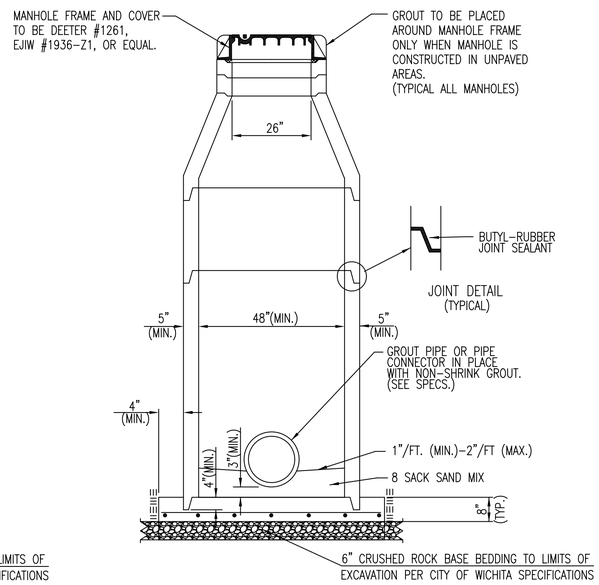
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

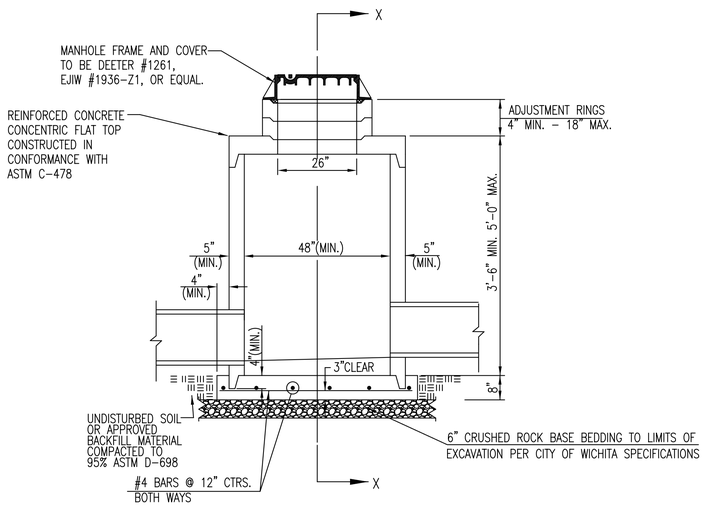
SW-201



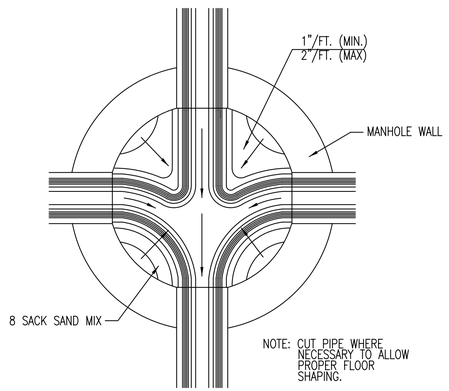
PRECAST
STANDARD MANHOLE
TYPE "A"



SECTION X-X
(TYPICAL)



PRECAST
SHALLOW MANHOLE
TYPE "B"



TYPICAL MANHOLE
FLOOR SHAPING

GENERAL NOTES

1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
2. STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
3. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
4. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
5. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
6. CONCRETE USED FOR MANHOLE CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE.
8. MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5 FOOT INSIDE DIAMETER (MIN.)
9. MANHOLES WITH PRECAST BASES MAY BE USED AT THE CONTRACTORS OPTION. THESE MANHOLES SHALL HAVE AN 8" MINIMUM BASE THICKNESS AND SHALL BE PLACED ON AN 8" MIN. CRUSHED ROCK BASE. PIPES SHALL BE ENCASED WITH CRUSHED ROCK TO AT LEAST 3 FEET FROM THE MANHOLE WALL.
10. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
11. THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE MANHOLE WALL.
12. MANHOLE INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE MANHOLE WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
13. MANHOLE FRAME AND COVER TO BE DEETER #1261, EJIW #1936-Z1, OR APPROVED EQUAL, SEE SW-303.
14. FOR FLAT GRATED INLET APPLICATION, GRATE TO BE DEETER #1933, EJIW #1205 MDI, OR APPROVED EQUAL.
15. FOR BEEHIVE GRATE APPLICATION, GRATE TO BE DEETER #4495, EJIW #120545, OR APPROVED EQUAL.

REVISED: MARCH 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

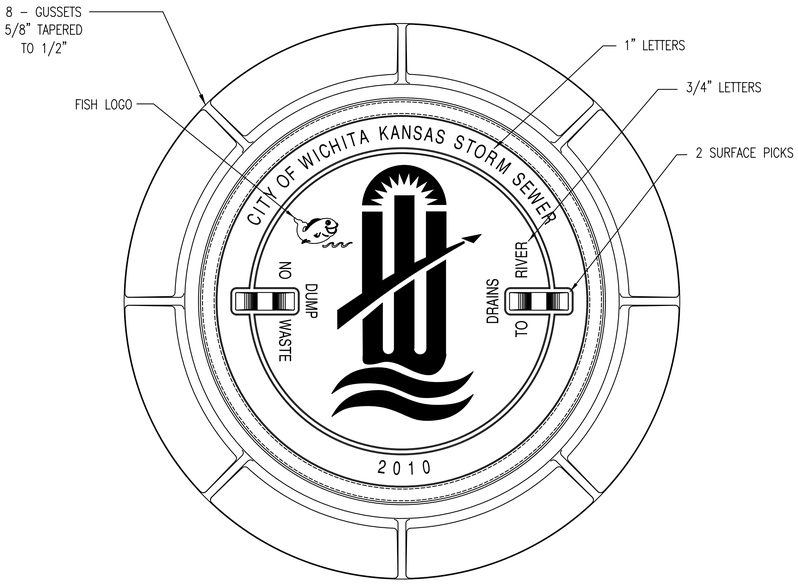
PRECAST CONCRETE
MANHOLE
(STORM SEWER)

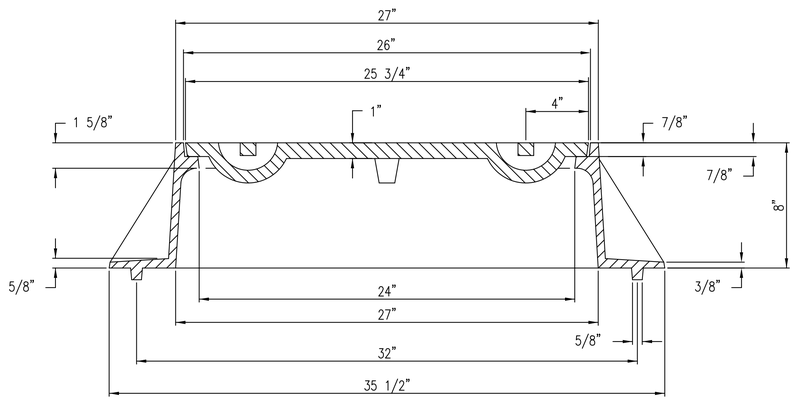
CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SW-301

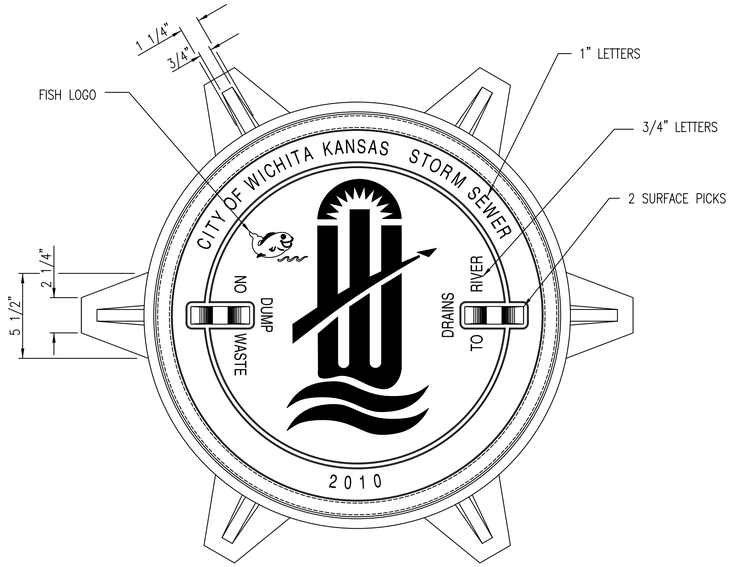


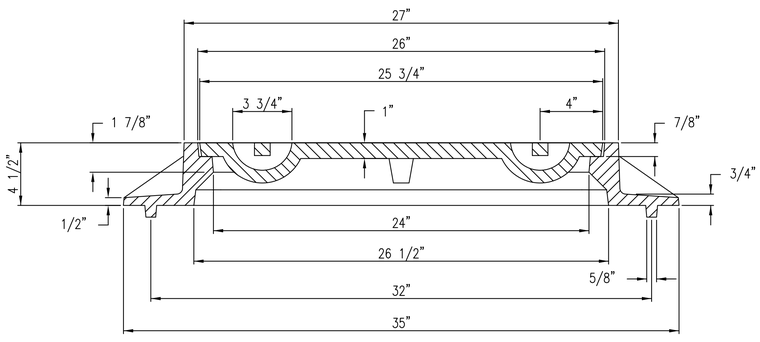


MANHOLE FRAME

DEETER #1261 OR EJIW #1936-Z1

NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
2. COVER TO BE DEETER #1261 OR EJIW #1936A.





INLET FRAME

DEETER #2014 OR EJIW #1936-Z4

NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES.
2. NOT TO BE USED UNDER PAVEMENT.
3. COVER TO BE DEETER #1261 OR EJIW #1936A.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

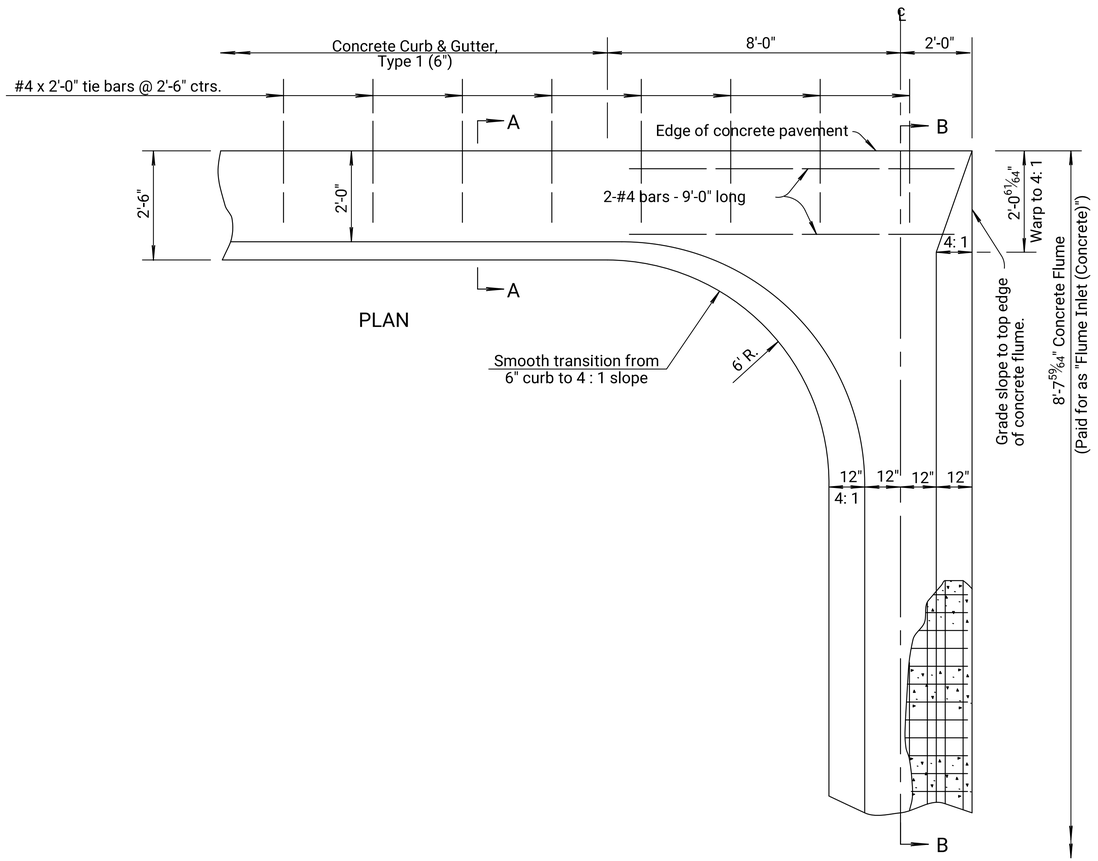
MANHOLE/INLET FRAME AND COVER (STORM SEWER)

CITY ENGINEER
PAUL GUNZELMAN, P.E.

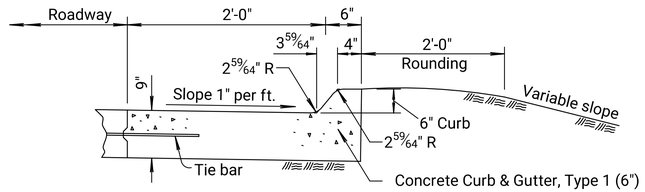
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

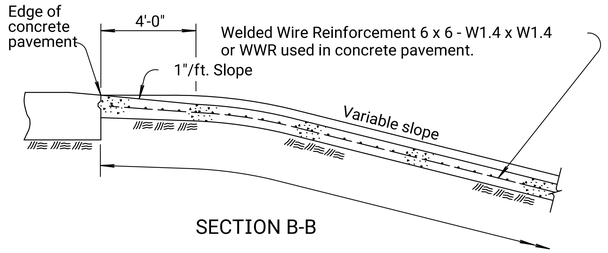
SW-303



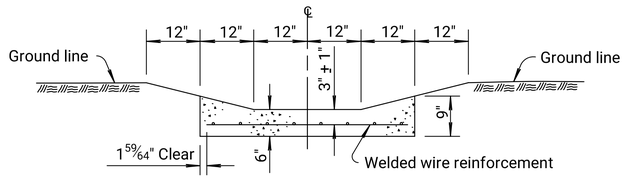
CONCRETE FLUME



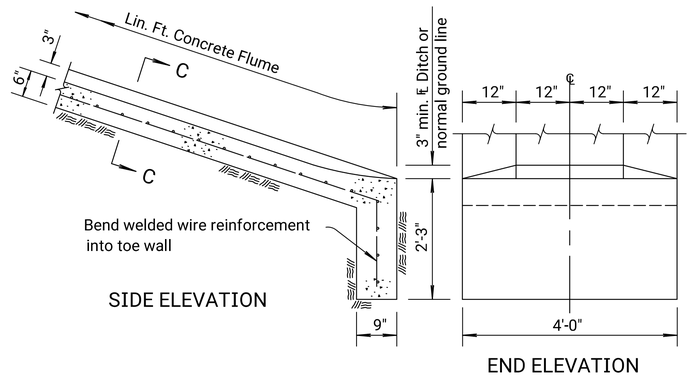
SECTION A-A



SECTION B-B



SECTION C-C



SIDE ELEVATION

END ELEVATION

CONCRETE FLUME & TOE WALL DETAILS

Notes:
Concrete Flumes shall be paid for by unit price per Each.

Reinforcing steel & welded wire reinforcement are SUBSIDIARY to Concrete Flume.

The entire area of the Concrete Flume shall be placed monolithic and struck off with a uniform thickness of 6 inches.

Concrete used for concrete flume construction shall conform to the City of Wichita Standard Specifications for concrete pavement mix or as approved by Engineer.

Transverse expansion and contraction joints of same type in pavement are to extend through the concrete flume, omitting load transfer devices.

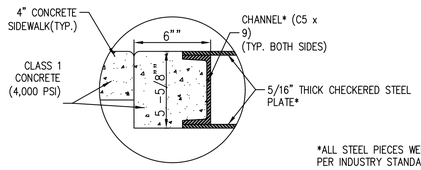
All exposed edges shall be finished with an edging tool.

WEST STREET - I-235 TO MACARTHUR
CONCRETE FLUME DETAIL

NO.	DATE	DESCRIPTION
		REVISIONS

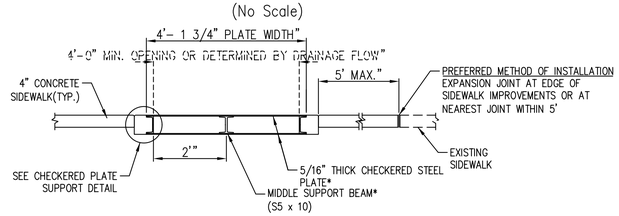
PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
45
SHEET 45 OF 128



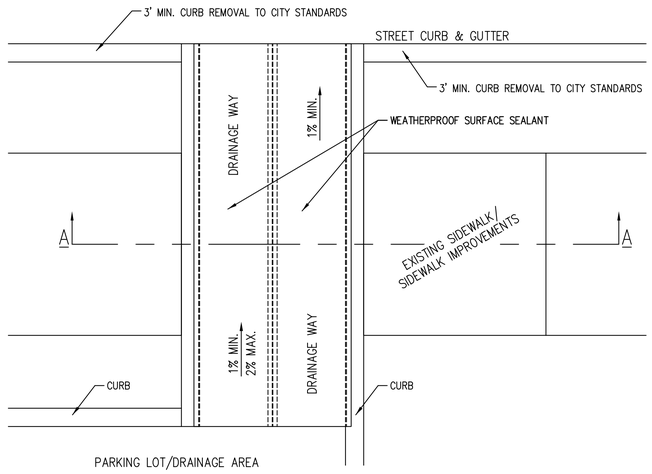
CHECKERED PLATE SUPPORT DETAIL

(No Scale)



SECTION A-A

(No Scale)

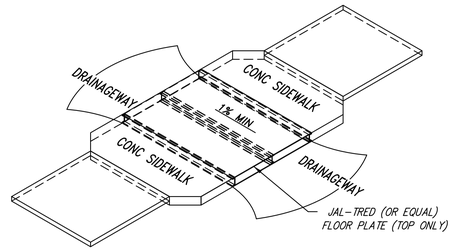


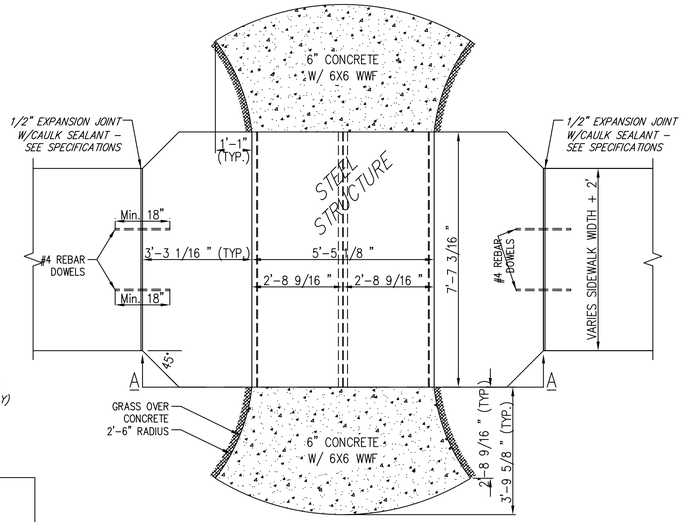
PLAN VIEW *

(No Scale)

CHECKERED PLATE

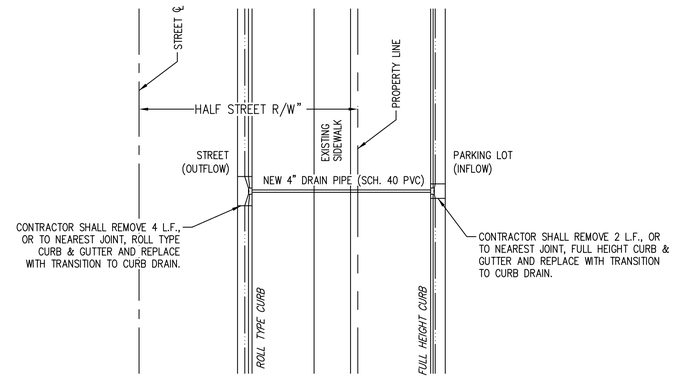
(PREFERRED OPTION)



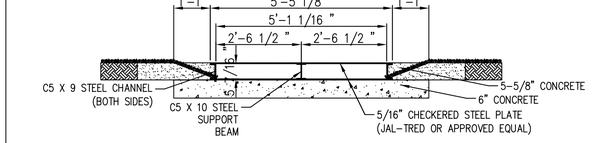


PLAN *

(No Scale)

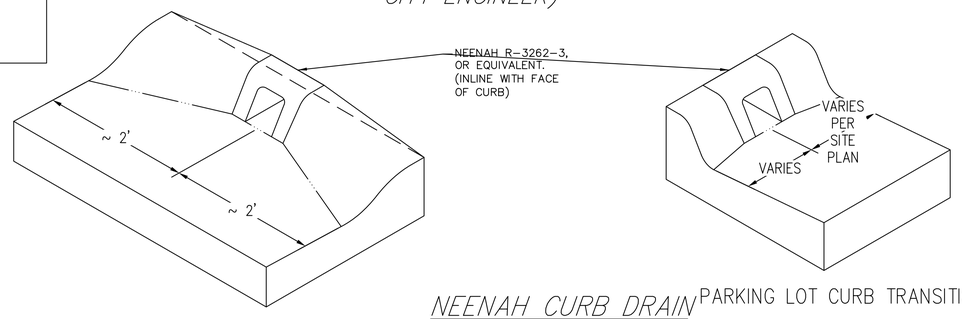


(ALTERNATIVE INSTALLATION WITH PRIOR APPROVAL FROM CITY ENGINEER)



SECTION A-A

(NO SCALE)



NEENAH CURB DRAIN

STREET CURB TRANSITION (USE ONLY WITH PRIOR APPROVAL FROM CITY ENGINEER.) PARKING LOT CURB TRANSITION

*NOTE: OWNER'S ENGINEER SHALL CONTACT PUBLIC WORKS AND ENGINEERING DEPARTMENT AT 268-4501 TO OBTAIN UTILITY PAVEMENT CUT PERMIT PRIOR TO CONSTRUCTION IF PART OF A PRIVATE PROJECT.

REVISED MARCH 2017

CITY OF WICHITA

PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

COVERED CONCRETE FLUME THROUGH SIDEWALK & NEENAH CURB DRAIN

CITY ENGINEER

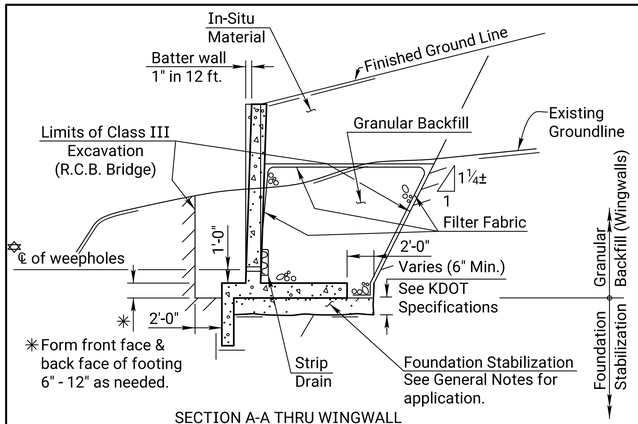
PAUL GUNZELMAN, P.E

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

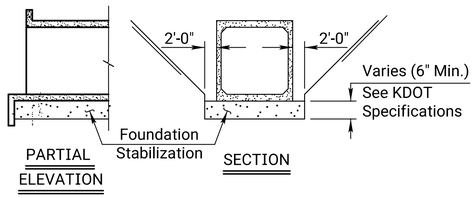
TR-112

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	47	128



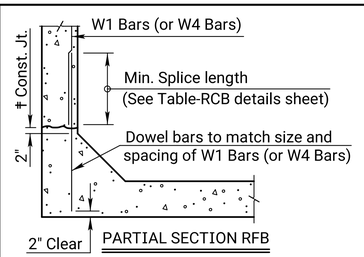
SECTION A-A THRU WINGWALL

Granular Backfill And Foundation Stabilization



PARTIAL ELEVATION

SECTION



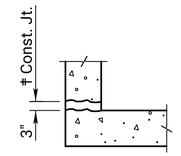
PARTIAL SECTION RFB

OPTIONAL BAR DETAIL

The Contractor shall have the option of using Dowel Bars to match vertical wall bars as shown, however no allowance will be made for additional steel required for bar laps.

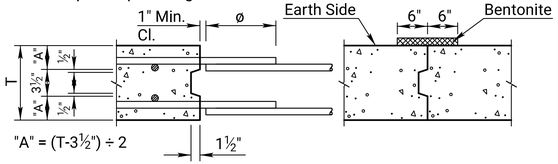
†OPTIONAL COLD JOINT

The Contractor has the option of placing the Lower Horizontal Construction Joint at the top of the slab for RCB's or at the top of the fillet for RFB's.



PARTIAL SECTION RCB

ø Longitudinal bars shall extend through the joint to provide a minimum lap equal to the required splice length. See RCB Details sheet for required splice length.

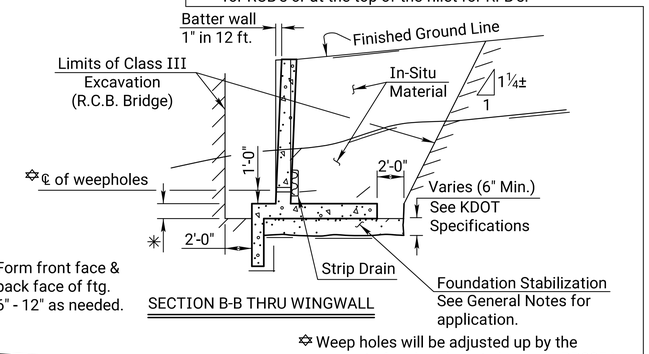


VERTICAL CONSTRUCTION JOINTS

NOTE: Vertical construction joints shall be perpendicular to the longitudinal axis of the RCB and shall be placed at any location as needed for construction and as approved by the Engineer.

NOTE: Horizontal construction joints shall be a roughened finish.

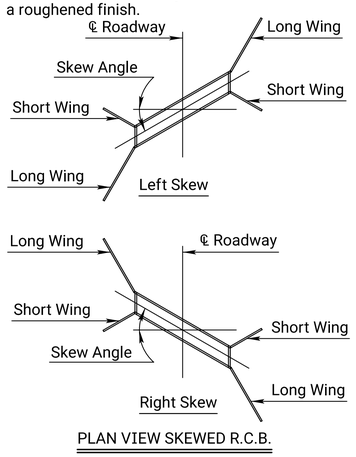
NOTE: Barrel Construction Joints located in a median with less than 5 ft. of fill or at locations specified by the Engineer, shall be protected by a bentonite based system as shown. Place the bentonite on the exterior walls and top slab. See requirements for bentonite in the KDOT Specifications for "Bridge Backwall Protection System". Material and installation of the bentonite system shall be subsidiary to the bid item "Grade 4.0 Concrete".



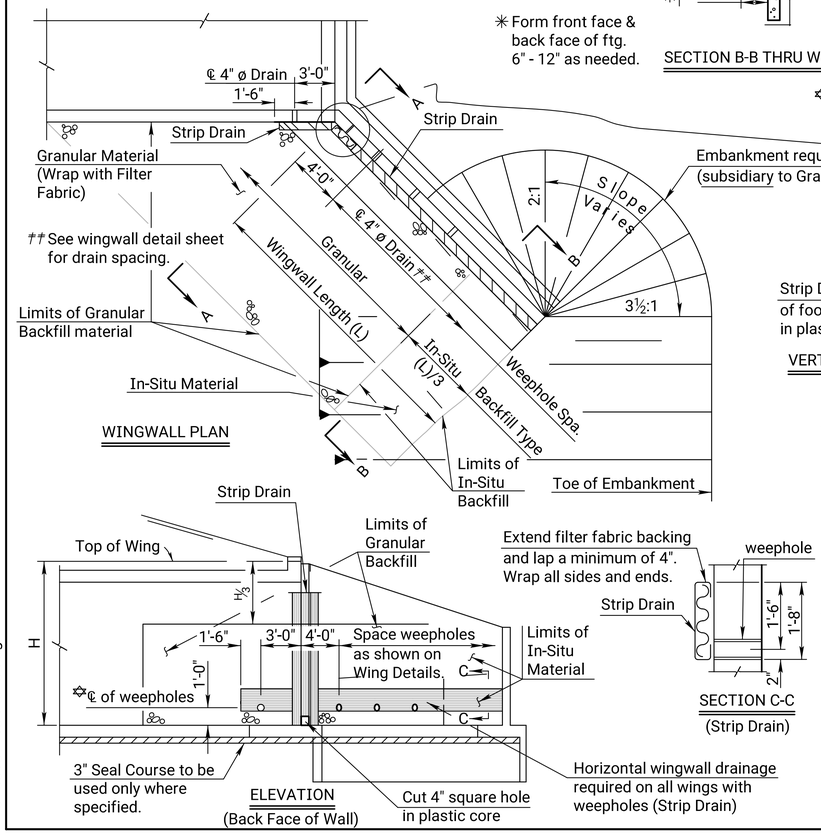
✳Form front face & back face of ftg. 6" - 12" as needed.

SECTION B-B THRU WINGWALL

✡Weep holes will be adjusted up by the amount of embeddment shown on BR025A if the structure is embedded.

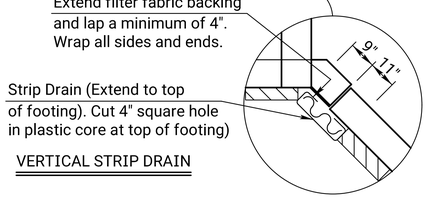


PLAN VIEW SKEWED R.C.B.



WINGWALL PLAN

ELEVATION
(Back Face of Wall)



VERTICAL STRIP DRAIN

SECTION C-C
(Strip Drain)

GENERAL NOTES

Wingwall Drainage:

1. All wingwalls with weepholes shall have horizontal and vertical wingwall drainage as shown. Strip drains will be used. See KDOT Specifications for "Abutment Strip Drains" for strip drain requirements.
2. Construction and materials for wingwall drainage, including weepholes, and strip drain shall be subsidiary to the bid item, "Grade 4.0 Concrete". Weepholes may be a formed opening or corrugated polyethylene tubing.

Wingwall Foundation Stabilization:
The Foundation Stabilization quantity has been calculated to the limits shown in the Section Thru Wingwall. The depth may be increased by the Engineer. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

Seal Course:
Seal Course consisting of 3" min. of Commercial Grade Concrete shall be constructed to the limits directed by the Engineer. No reinforcing in the floor of the slab or wall footing shall be placed until the Seal Course has gained sufficient strength to permit working upon it without injury.

GENERAL NOTES

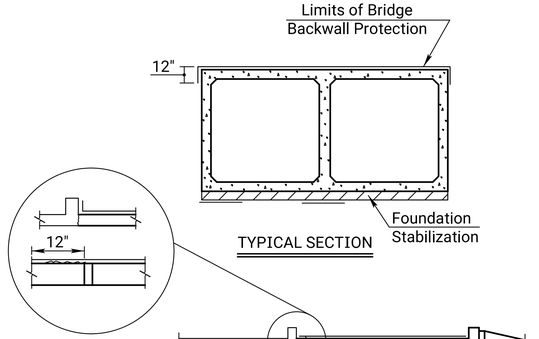
Foundation Stabilization:
The depth of Foundation Stabilization may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

Granular Backfill (Wingwalls):

1. Granular Backfill shall be used to backfill behind wingwalls to the limits shown in the WINGWALL PLAN and Elevation detail. Granular Backfill construction may be used separately or combined with Foundation Stabilization as directed by the Engineer.
2. Measurement for the bid item, "Granular Backfill (Wingwalls)", shall be measured in Cubic Yards to the theoretical limits as shown.
3. Material for Granular Backfill (Wingwalls) shall conform to the requirements of SB-1, SB-2, SCA-1 or SCA-2.
4. Consolidate Granular Backfill using hand equipment only. Avoid over consolidation.
5. Use filter fabric complying with Section 1710. Use only within the limits of Granular Backfill to separate from the In-Situ Material. Filter Fabric is subsidiary to "Granular Backfill".

In-Situ Backfill (Wingwalls):

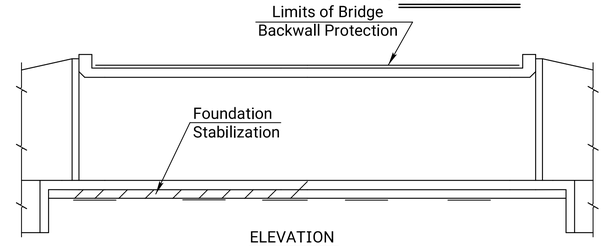
1. Use any material found within the project limits except Highly Plastic Clay(s) or organic material. The material is subsidiary to "Granular Backfill".
2. Use Type "B" Compaction.
3. Use only hand or walk behind equipment for Compaction.



TYPICAL SECTION

⊗ BOX EXTENSION

⊗See "Typical Culvert Extension" RD080 for additional information.



ELEVATION
(New Construction)

GENERAL NOTES

Bridge Backwall Protection System:

1. For all structures with less than or equal to 2'-0" of fill, apply a "Bridge Backwall Protection System" from Section 1700 to the limits shown. Do not place hot mix asphalt directly on this material.
2. Use a "non-coal tar" material from KDOT's approved list.
3. Protect this material from damage during backfilling. Repair at no additional cost.
4. When the Plans show hot mix asphalt placed directly on the slab, substitute "Pavement Water Proofing" material from Section 800, this material shall be subsidiary. Wait 28 days after top slab is completed before applying this material.

NO.	DATE	REVISIONS	BY	APP'D
07	02-06-18	Filter Fabric Clarification	M.L.L.	J.P.J.
06	06-07-17	Filter Fabric Modification	J.P.J.	J.P.J.
05	10-11-13	Granular Backfill Limits	J.P.J.	L.R.R.

KANSAS DEPARTMENT OF TRANSPORTATION

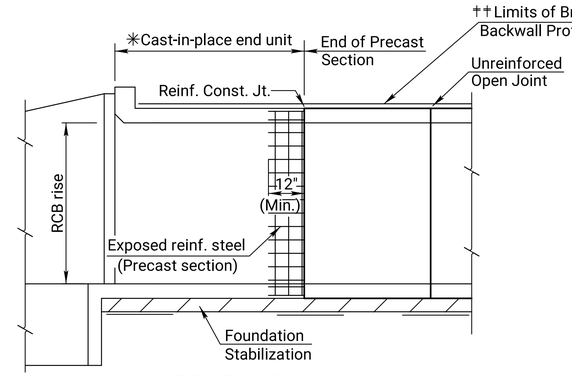
RCB AUXILIARY DETAILS (LRFD)

BR020B

FHWA APPROVAL			04-17-10	APP'D.		Terry L. Fleck	
DESIGNED	J.P.J.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	J.S.R.	DETAIL CK.	J.P.J.	QUAN.CK.		TRACE CK.	J.P.J.

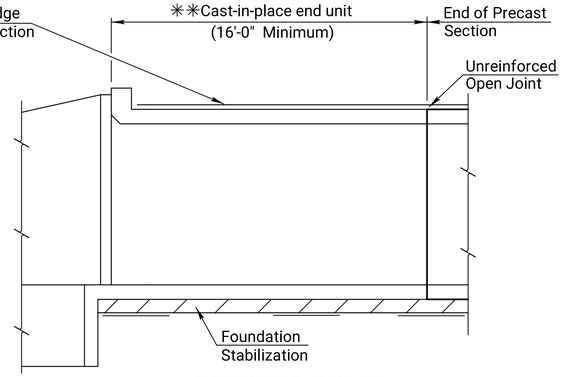
Plotted by : USTV690349 29-OCT-2024 16:17
File : 30901193BR020B.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	48	128



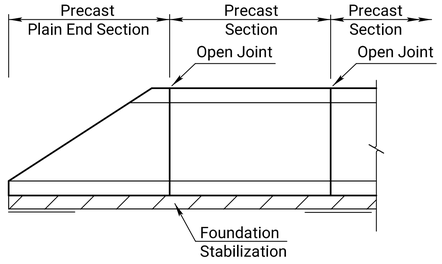
ELEVATION AT HEADWALL

✳ Minimum barrel length of cast-in-place end unit shall equal the RCB rise or 8'-0", whichever is less. This length can be used when the joint between the cast-in-place end unit and the precast section is reinforced as shown.



ELEVATION AT HEADWALL

✳✳ Minimum barrel length of cast-in-place end unit shall be 16'-0" when using an unreinforced open joint at the end of the precast section.



ELEVATION AT PRECAST END SECTION

(Precast End Sections are permitted where straight wings are shown in the plans or at the downstream end for single cell RCB with a rise of six feet or less.)

NOTE: See "Bridge Excavation" sheet, (Std. No. BR100B), for excavation details and basis of payment.

NOTE: Minimum length of precast section shall be 4'-0".

NOTE: A single cell box of equivalent area may be substituted for a double cell box with cell spans less than or equal to 6'-0". Any revision in the cell height from that shown on the plans will not be permitted, unless approved by the Engineer. Two single cell boxes may be substituted for a double cell box, when approved by the Engineer.

NOTE: See respective RCB Standard Sheets for cast-in-place details.

NOTE: When the fill height is 2'-0" or less "Bridge Backwall Protection" is required.

GENERAL NOTES

(All Items on this sheet are subsidiary)

PRECAST BOX CULVERTS: If precast boxes are specified, construct them at the locations shown in the plans and according to the requirement shown on this sheet. When approved by the Engineer, precast box culverts may be used in lieu of cast-in-place box culverts. If the Contractor chooses the precast option, use the cast-in-place quantities as the cost basis. This cost includes all labor equipment, material and incidentals necessary to complete the installation.

Unless otherwise approved by the Engineer, use cast-in-place collars at horizontal and vertical changes in RCB alignment. Use cast-in-place end sections and wingwalls except as noted on this sheet. The Engineer may require cast-in-place sections at junctions of drainage structures.

Cast-in-place concrete work shall conform to the requirements of the KDOT Specifications and Chapter 12 of KDOT's Bridge Design Manual. Use Grade 4.0 concrete and Grade 60 reinforcing steel conforming to ASTM A615 for cast-in-place construction.

Cast-in-place box sections shall have member thicknesses and reinforcement not less than the RCB Standard from the original design. Connections between the cast-in-place and precast members shall be drilled and grouted according to details shown on this sheet. When the wall thicknesses differ between the cast-in-place and precast, transition at a 4:1 without reducing the box opening size. See KDOT Specifications for further requirements.

SPECIFICATIONS: Single-cell Precast Concrete Box Culverts shall conform to the requirements of the following specifications except as noted in the KDOT Specifications. Design multiple-cell precast boxes in accordance with the criteria used to develop the single-cell precast boxes. (See Appendix of ASTM Specification C 1577-08, Table 2 and the latest AASHTO LRFD Specifications.)

DISTRIBUTION SLAB: Fill heights less than 2 feet require a distribution slab. Construct the distribution slab over the width of the exterior walls of the barrel to the outside edges of the roadway shoulders. Terminate the slab a minimum of 2 feet from the edge of a barrel segment.

If the fill height is less than or equal to one foot then:

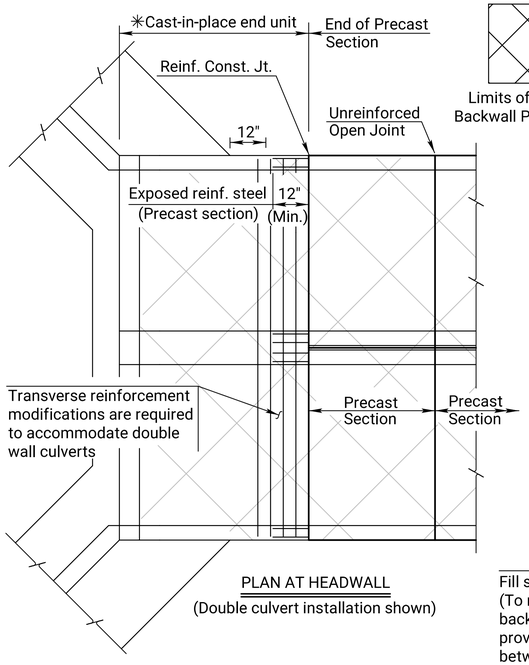
A distribution slab shall be a minimum of 6 inches thick, reinforced with #4 bars spaced at 18 inches, placed perpendicular to centerline of the box and with #5 bars spaced at 12 inches, placed parallel to centerline of the box. Substitution of an equivalent welded wire fabric is acceptable. Place a min. of 3" of granular material between the box and slab.

If the fill height is greater than one foot then:

(Use one of the following options)

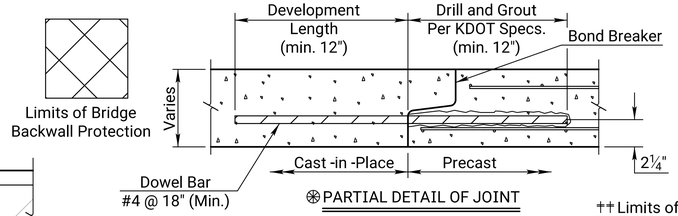
1. Use the cast-in-place criteria above.
2. Use precast distribution slabs with same criteria as the cast-in-place above. Center the joints in slabs over the box segments. Provide a minimum of 3 inches of granular material between the box and the slabs.
3. Reinforced concrete pavement (min. 6 inches thick) will meet the requirements of a distribution slab. Reinforce as noted above. Provide a minimum of 3 inches of granular material between the concrete pavement and the precast boxes.
4. Asphalt pavement (min. 6 inches thick) will meet the requirements of a distribution slab. Provide a minimum of 6 inches of granular material between the asphalt and the precast boxes. Also provide geogrid with 4" of cover to the asphalt within the granular material.

A special design will be required when the above options are not geometrically possible.

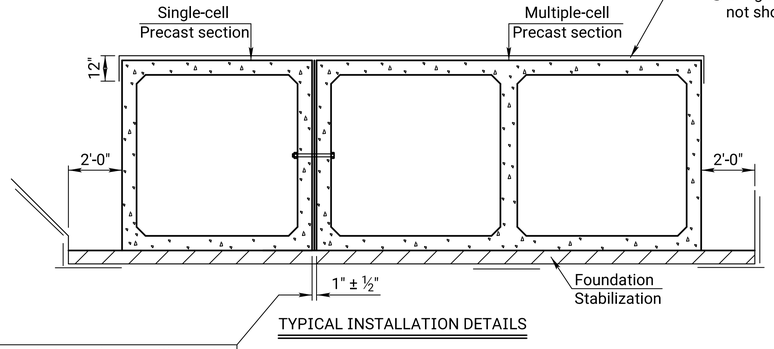


PLAN AT HEADWALL

(Double culvert installation shown)

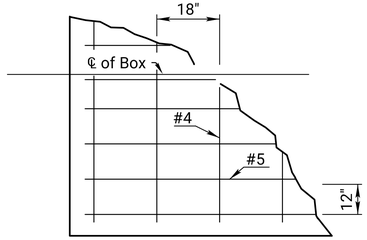


⊛PARTIAL DETAIL OF JOINT



TYPICAL INSTALLATION DETAILS

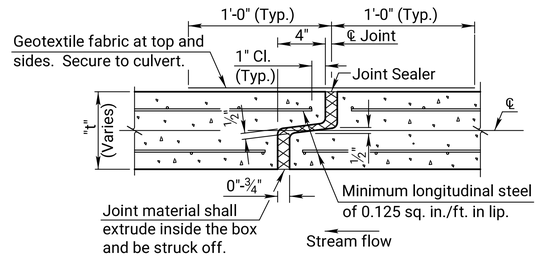
⊛Bridge Backwall Protection not shown for clarity.



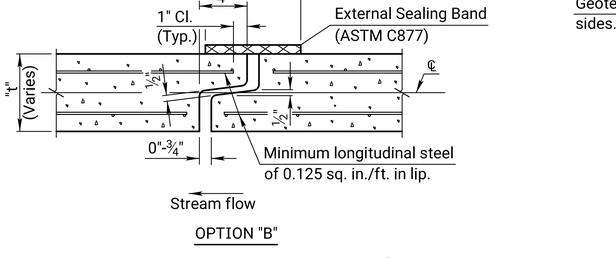
CAST IN PLACE DISTRIBUTION SLAB

(Partial plan of reinforcement)

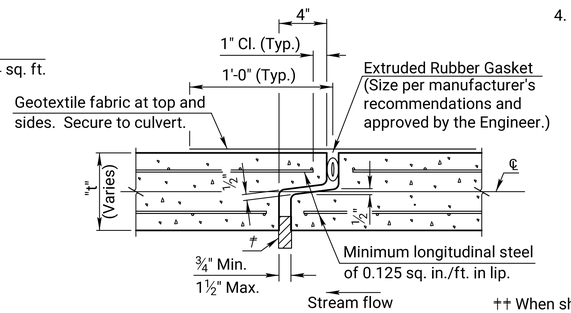
Fill space between boxes with grout. (To maintain proper joint gap, partially backfill boxes prior to grouting or provide a mechanical connection between boxes.)



OPTION "A"



OPTION "B"



OPTION "C"

†Insert temporary, ¾"-1" wide, hardwood wedges to prevent over-compressing gasket.

⊛OPEN JOINT DETAIL

††When shown on the shop details use a Bridge Backwall Protection conforming to Section 1700 of the KDOT Specifications.

NO.	DATE	REVISIONS	BY	APP'D
05	08-19-13	Edit Geogrid Placement	J.P.J.	T.L.F.
04	07-28-11	Added Bridge Backwall Protection	J.P.J.	K.F.H.
03	03-10-10	Clarification of Extension	J.P.J.	K.F.H.

KANSAS DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT DETAILS

BR031

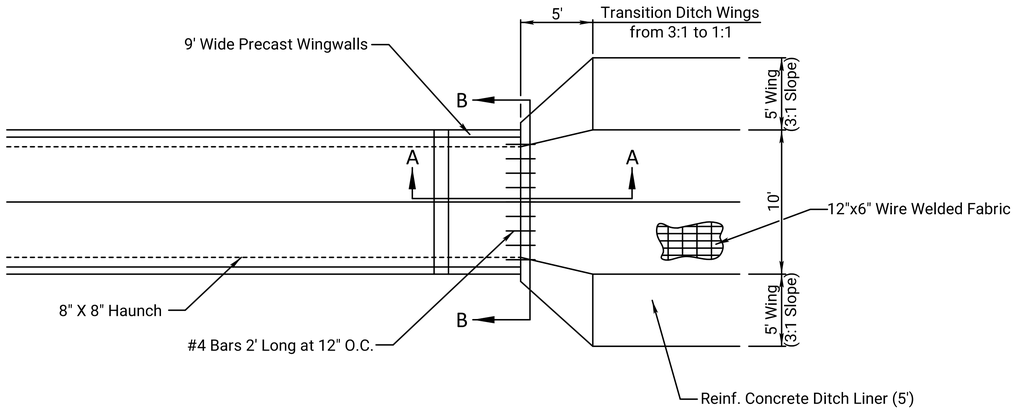
FHWA APPROVAL		09-20-11	APP'D.	Kenneth F. Hurst
DESIGNED	DETAILED P.F.		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK. R.A.M.		QUAN.CK.	TRACE CK.

Sh. No. 48

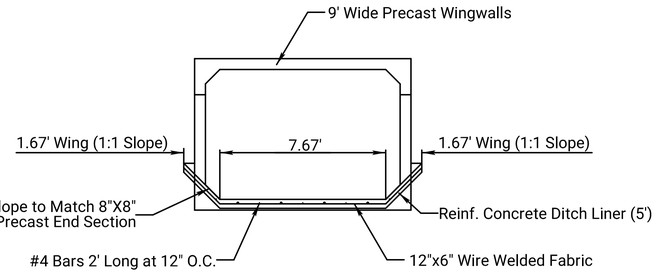
Plotted by : USTV690349 29-OCT-2024 16:17
File : 30901193BR031.dgn

CONNECTION GENERAL NOTES

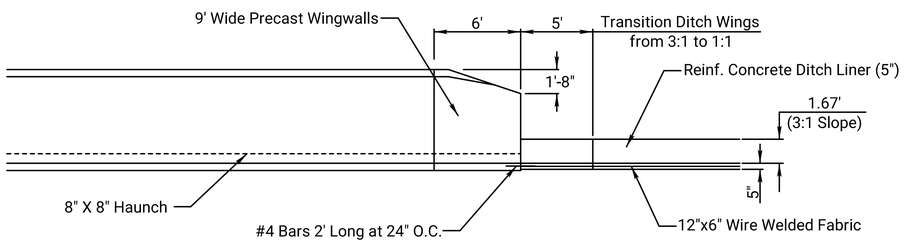
1. All costs associated with making the connection between precast wingwalls and the concrete ditch liner shall be SUBSIDIARY to the Lump Sum Bid Item "Ditch Liner".



Plan View



Section B-B



Section A-A

CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR
PRECAST WINGWALL/CONCRETE DITCH LINER CONNECTION DETAILS

REVISIONS	DESCRIPTION	DATE	NO.

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
49
SHEET 49 OF 128

BENCHMARK:

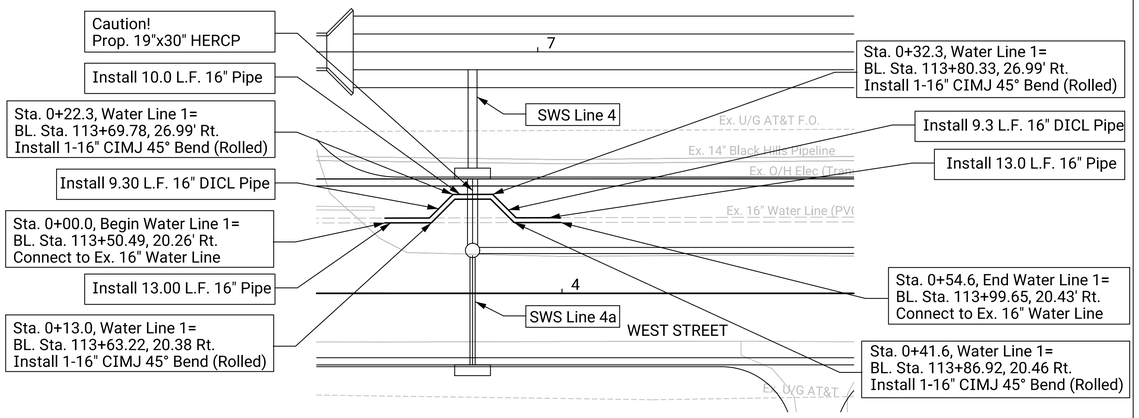
BM #212 - T-Post flush with the ground 59' south of the entrance to Professional Cargo Service (PCS), 24.6' west of the west edge of West Street.
B.L. Sta. 115+68.49, 30.23' Lt.
Elev. 1288.76 (NAVD 88)

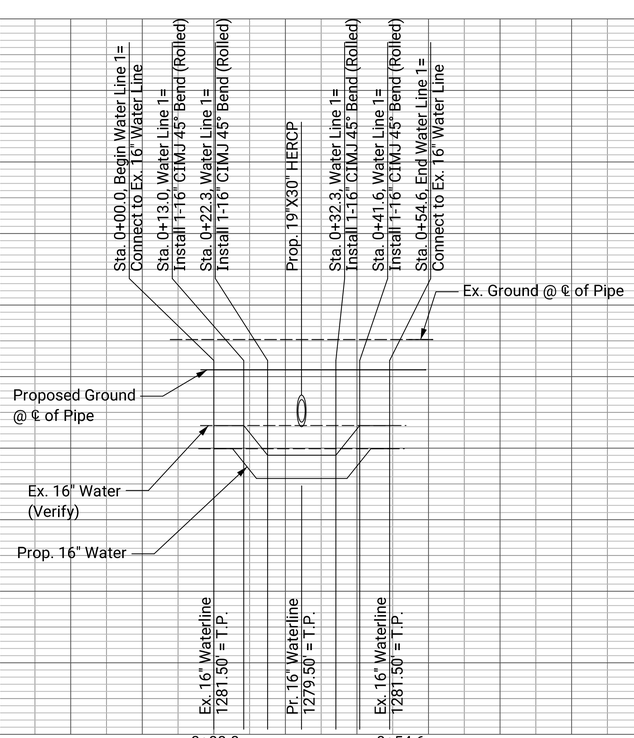
SCALE

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

PROFILE: Horiz. same as above

Vert. 5 0





BENCHMARK:

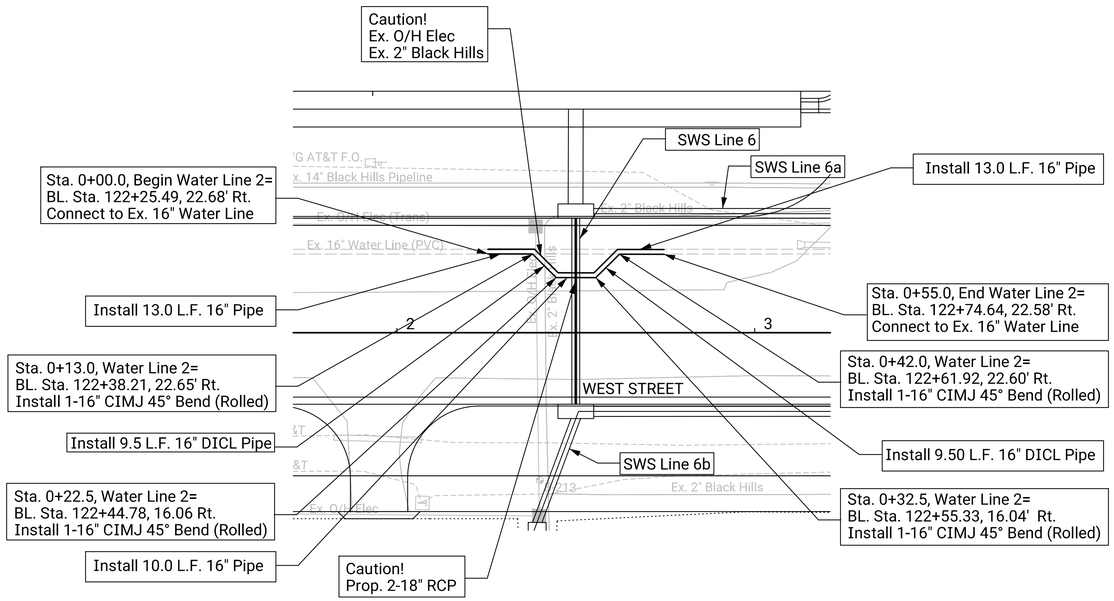
BM #213 - T-Post flush with the ground 45.4' North of an asphalt drive, 29.2' East of the East edge of West Street, 10' West of a power pole.
B.L. Sta. 122+39.98, 41.22' Rt.
Elev. 1286.85 (NAVD 88)

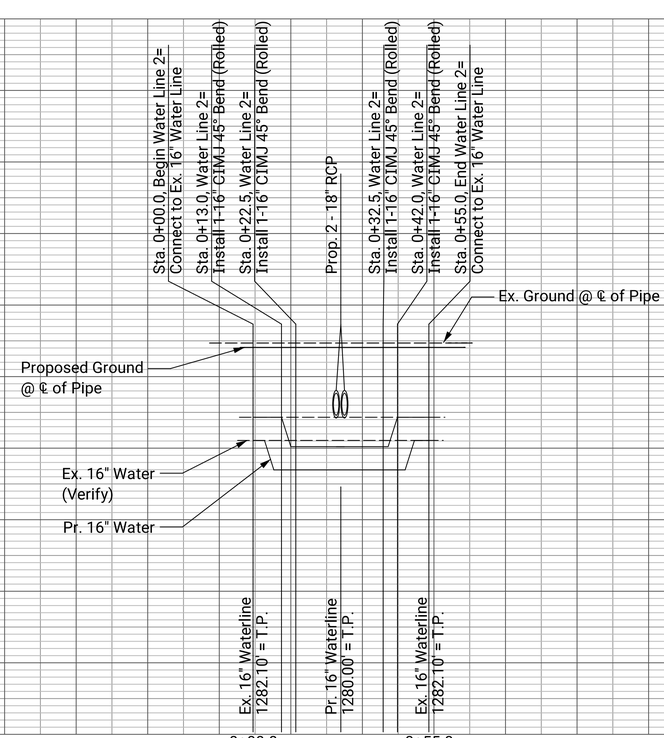
SCALE

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

PROFILE: Horiz. same as above

Vert. 5 0





WEST STREET - I-235 TO MACARTHUR

WATER LINE RELOCATION
WATER LINE 1 & WATER LINE 2

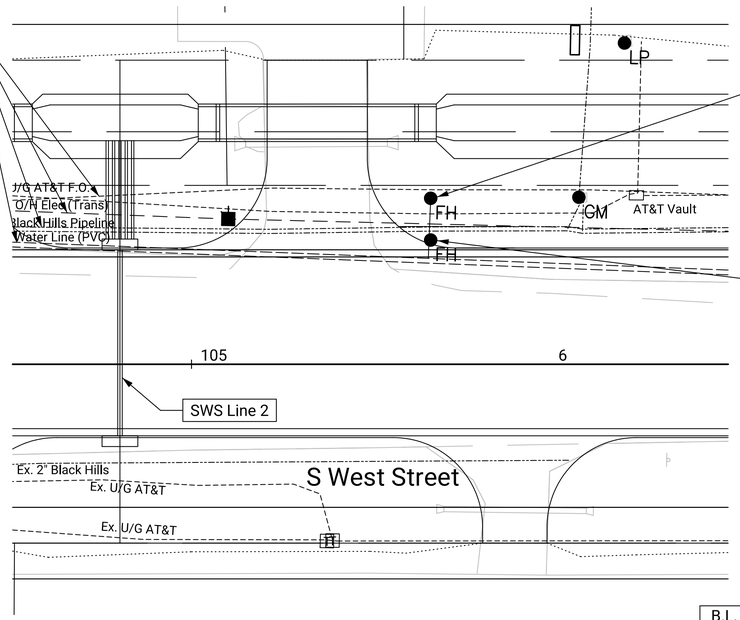
REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
50
SHEET 50 OF 128

10/29/2024 4:19:38 PM File : c:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193WTR.dgn

Caution!
Ex. AT&T F.O. (2)
Ex. O/H Elec
Ex. 14" Black Hills
Ex. 16" Water

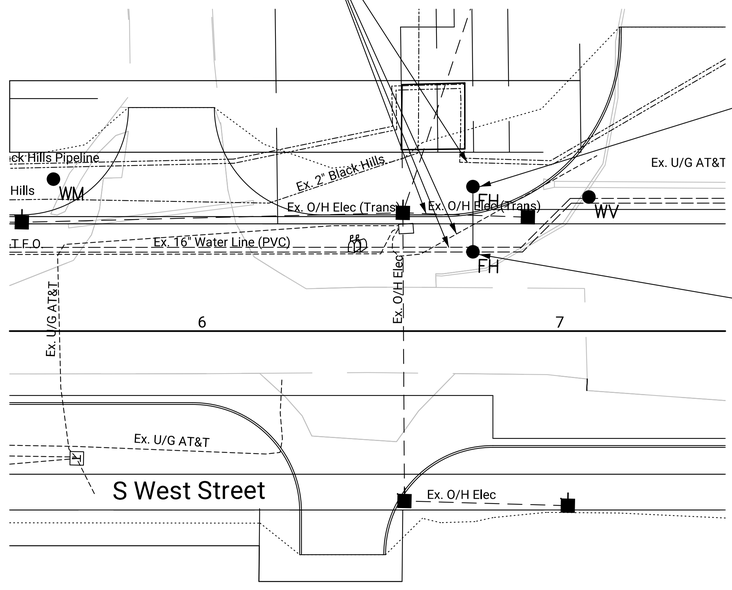


B.L. Sta. 105+66.85, 46.39 Lt.
Extend Ex. 6" Fire Hydrant Lead
14.96 L.F. (W)Install New Fire
Hydrant and Block as Necessary
Adjust Ex. Valve Box to Match
Propsed Grade.
Valve Box. Elev. = 1288.7
Bury Line Elev. =1288.8

B.L. Sta. 105+66.85, 34.7 Lt.
Remove, Salvage & Deliver Ex.
Fire Hydrant to City of Wichita.

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

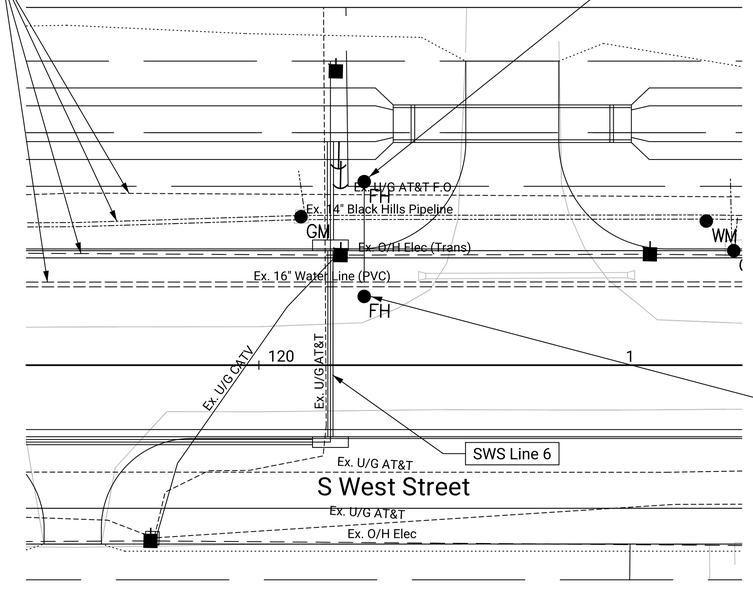
Caution!
Ex. AT&T F.O. (2)
Ex. O/H Elec
Ex. 14" Black Hills
Ex. 16" Water



B.L. Sta. 126+79.47, 40.38
Lt.Extend Ex. 6" Fire Hydrant Lead
15.00 L.F. (W). Install New Fire
Hydrant and Block as Necessary
Adjust Ex. Valve Box to Match
Propsed Grade.
Valve Box. Elev. = 1288.4
Bury Line Elev. =1288.5

B.L. Sta. 126+79.47, 22.15 Lt.
Remove, Salvage & Deliver Ex.
Fire Hydrant to City of Wichita.

Caution!
Ex. AT&T F.O. (2)
Ex. O/H Elec
Ex. 14" Black Hills
Ex. 16" Water



B.L. Sta. 120+29.44, 51.30 Lt.
Extend Ex. 6" Fire Hydrant Lead
26.20 L.F. (W). Install New Fire
Hydrant and Block as Necessary
Adjust Ex. Valve Box to Match
Propsed Grade.
Valve Box. Elev. = 1287.7
Bury Line Elev. =1287.8

B.L. Sta. 120+29.44, 19.23 Lt.
Remove, Salvage & Deliver Ex.
Fire Hydrant to City of Wichita.

All Cost Associated with Installing the Fire Hydrant Leads and Fire Hydrants shall be SUBSIDIARY to the "Fire Hydrant Relocation" Bid Item.

The Fire Hydrant Relocations Shall Require Ductile Iron Pipe and Restrained Joint Fittings.

CITY OF WICHITA

WSP

FIRE HYDRANT RELOCATIONS

WEST STREET - I-235 TO MACARTHUR

NO.	DATE	REVISIONS	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
51
SHEET 51 OF 128

VALVE BOX ADJUSTMENT TABLE			
STATION	ROADWAY	SIDE	VLV NO.
105+66.85	WEST STREET	46.39 Lt.	27023
120+29.44	WEST STREET	51.30 Lt.	25926
126+79.47	WEST STREET	40.38 Lt.	12986

WATER GENERAL NOTES

1. All water mains and appurtenances shall be installed in accordance with City of Wichita, Kansas Standard Specifications for Water Main Installations.

2. Opening and closing of water valves shall be done slowly to prevent damage to the distribution system by water hammer. All valves that are closed by the Contractor must be reopened as new construction permits. The Project Inspector must ascertain that any valve closed by the Contractor is reopened. The Contractor will be permitted to operate a water valve only when the Project Inspector assigned to the project is present.

3. The Contractor shall return all salvageable valves, hydrant fittings, etc. to the City of Wichita water distribution Department yard located at 1825 S. McLean Boulevard. The Contractor shall be required to have all salvaged material checked in by the Storekeeper.

4. Existing water mains and service connections are to remain in service until proposed new mains have been completed and tested. Some services found to be abandoned may require a new main connection and meter setter to allow for future business activity. The Contractor shall verify with the Water Department those services which are to be reconnected. All services found with two meters in one meter box shall be replaced with individual meter boxes.

5. All Existing Utilities crossing the Water Line Trench not in conflict with the Water Line shall be relocated, replaced, or supported by the Contractor. Such work shall not be paid for directly.

6. All abandoned Water Services encountered by the Contractor shall be exposed at the corporation on the water main and shut off. Water service tubing will be separated from the corporation and the meter box, ring and lid will be removed from the meter setter. The Contractor will provide measurements for the corporation in relation to the center line of the nearest streets. Any service not shown on the plans that are discovered during construction will require verification from the City before abandonment. All costs associated with the work shall be SUBSIDIARY to the Measured Quantity "Water Service Abandonment, 1" and Smaller".

CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

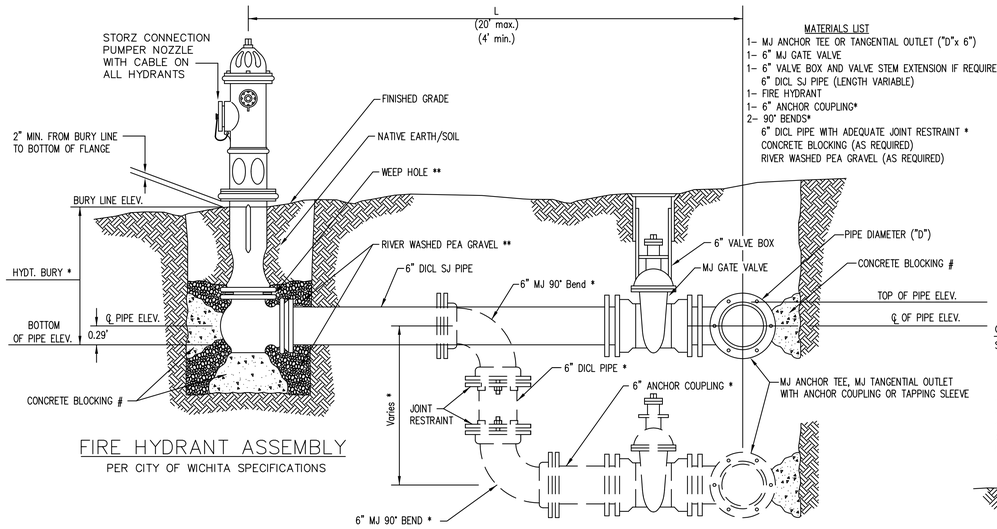
WATER VALVE TABLES and GENERAL WATER LINE NOTES

NO.	DATE	DESCRIPTION
		REVISIONS

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
52

SHEET 52 OF 128



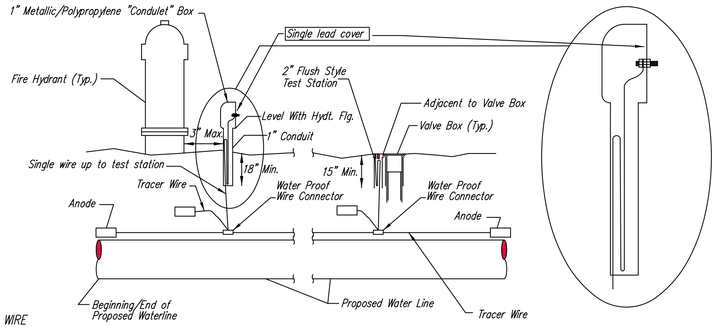
MATERIALS LIST
1- 6" MJ GATE VALVE
1- 6" VALVE BOX AND VALVE STEM EXTENSION IF REQUIRED *
6" DICL SJ PIPE (LENGTH VARIABLE)
1- FIRE HYDRANT
1- 6" ANCHOR COUPLING*
2- 90° BENDS*
6" DICL PIPE WITH ADEQUATE JOINT RESTRAINT *
CONCRETE BLOCKING (AS REQUIRED)
RIVER WASHED PEA GRAVEL (AS REQUIRED)

FIRE HYDRANT ASSEMBLY
PER CITY OF WICHITA SPECIFICATIONS

* IF THE REQUIRED HYDRANT BURY IS IN EXCESS OF 5', BUT LESS THAN 7', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY. IF THE REQUIRED HYDRANT BURY IS GREATER THAN 7', CONTRACTOR SHALL USE 5' HYDRANT BURY, 2-MJ 90 ° BENDS, 6" ANCHOR COUPLING AND 6" DICL PIPE AS NECESSARY FOR VERTICAL ADJUSTMENT. THE CONTRACTOR SHALL PROVIDE ADEQUATE THRUST BLOCKING AT HYDRANT AND MEGALUGS, OR SIMILAR RESTRAINT BETWEEN 90° BENDS TO SECURE ALL FITTINGS DURING TESTING AND OPERATION. THE CONTRACTOR SHALL PROVIDE A VALVE STEM EXTENSION PER DETAIL THIS SHEET.

** CAUTION: WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES. PLACE 1 CUBIC FOOT OF RIVER WASHED PEA GRAVEL AROUND EACH WEEP HOLE.

\# CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.



TRACER WIRE
Conductive type pipe locator/tracer wire shall be install to locate all waterline pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. A waterproof connector shall be used at splice locations. A complete list of approved tracer wire and waterproof connectors can be found on the City of Wichita's website at www.wichita.gov.

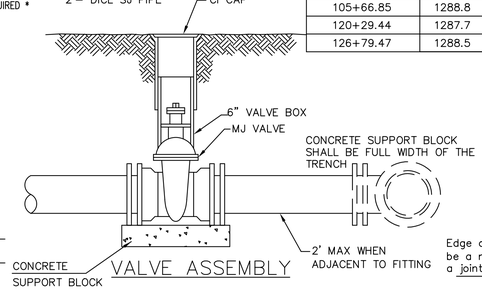
WIRE
The tracer wire shall be Blue No. 12 AWG CCS with 45 mil HDPE insulation. To allow for grade adjustment, a minimum of 12" of excess wire shall be coiled at the bottom of the test station for all wires. Wire connectors shall be installed per manufacturer recommendations. Contractor shall attach wire being installed with proposed water main to any tracer wire installed with adjacent waterline projects.

TEST STATIONS
*The test station for fire hydrant application shall be a 1" "condulet" style station as manufactured by AGRA Industries with a removable solid cover having a single lead extending from the face or approved equal. The "conduit" style test station shall be attached to a 1" rigid galvanized conduit with a minimum length of 36" and plastic end bushing. The flush style shall have the word "WATER" stamped or molded into the lid. The test station for valve applications shall be a 2" flush style test station with wire connector on lid. Model # T2PH7B1LP Handley Industries or CD14*TP SnakePit as manufactured by Copperhead Industries or approved equal. The flush style shall have the word "WATER" stamped or molded into the lid. All test stations shall be manufactured using molded blue tops or sufficiently coated with blue enamel paint. The tracer wire and the anode wire shall be install to allow 12" of wire within the test station. The location of all test stations shall be recorded, and shown in the as-built drawings. Flush style test stations shall not be installed in pavement or sidewalk unless approved by the Engineer. Contractor shall extend tracer wire & move flush mount test station to nearest location out of pavement or sidewalk.*

ANODES
The anodes shall be 3 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to 12 AWG CCS which shall be extended to the test station.

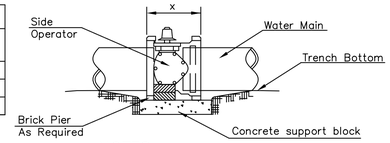
TRACER WIRE DETAIL
COST IS SUBSIDIARY TO PIPE INSTALLATION

MATERIALS LIST
1- MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1- 6" VALVE BOX
2'- DICL SJ PIPE



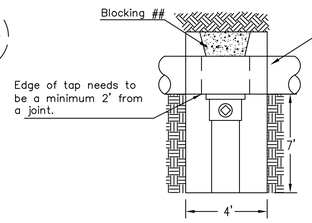
VALVE ASSEMBLY

FIRE HYDRANTS REQUIRED				
STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*	VALVE STEM EXT. REQUIRED (ft)*
105+66.85	1288.8	1280.3	8.93	8.40
120+29.44	1287.7	1282.8	5.29	4.80
126+79.47	1288.5	1284.3	4.64	4.10



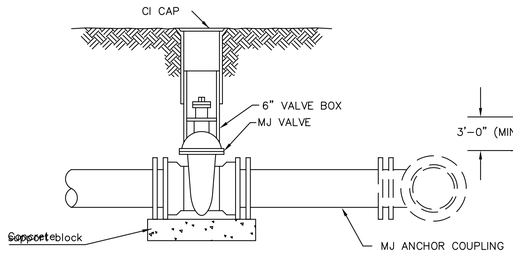
NOTES
1. This detail covers Butterfly Valve installation, inclusive, regardless of type of pipe or joint used. 24" and larger lines to be detailed on plans.
2. 6" Valve Box and Cover required per City of Wichita Std. Specifications.
3. Conc. Support Block to be full width of trench.

CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION

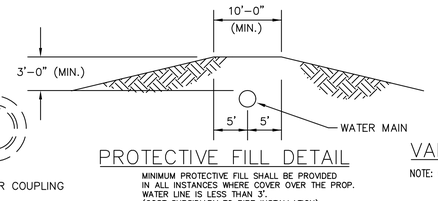


CITY TAP
When the City of Wichita makes tap, blocking is to be done by Contractor

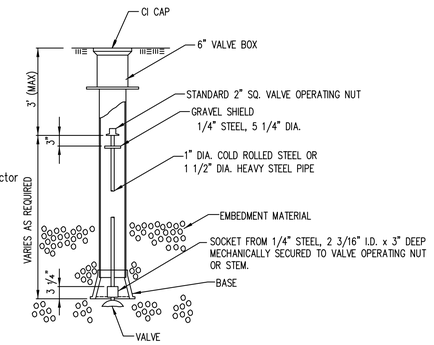
MATERIALS LIST
1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1-MJ ANCHOR COUPLING (12" OR SMALLER)
1-6" VALVE BOX
CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH



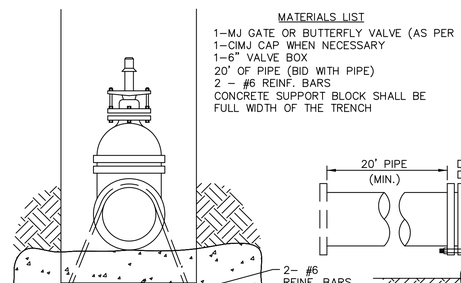
ANCHORED VALVE ASSEMBLY



PROTECTIVE FILL DETAIL
MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROP. WATER LINE IS LESS THAN 3'.
(COST SUBSIDIARY TO PIPE INSTALLATION)

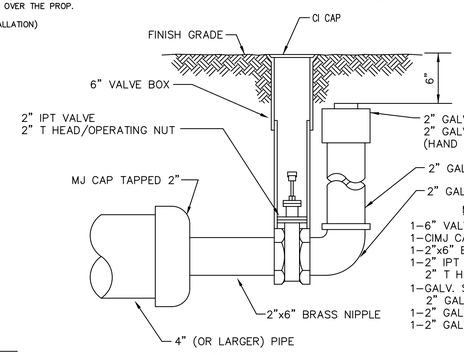


VALVE STEM EXTENSION DETAIL
NOTE: ONE VALVE STEM EXTENSION FOR EACH VALVE BURIED GREATER THAN 5'.



THRUST AT VALVES	
VALVE	THRUST AT 150 #/in²
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.

ANCHORED VALVE ASSEMBLY, SPECIAL



2" BLOWOFF ASSEMBLY

REVISED: OCTOBER 2016

CITY OF WICHITA
PUBLIC WORK& UTILITIES ENGINEERING DIVISION

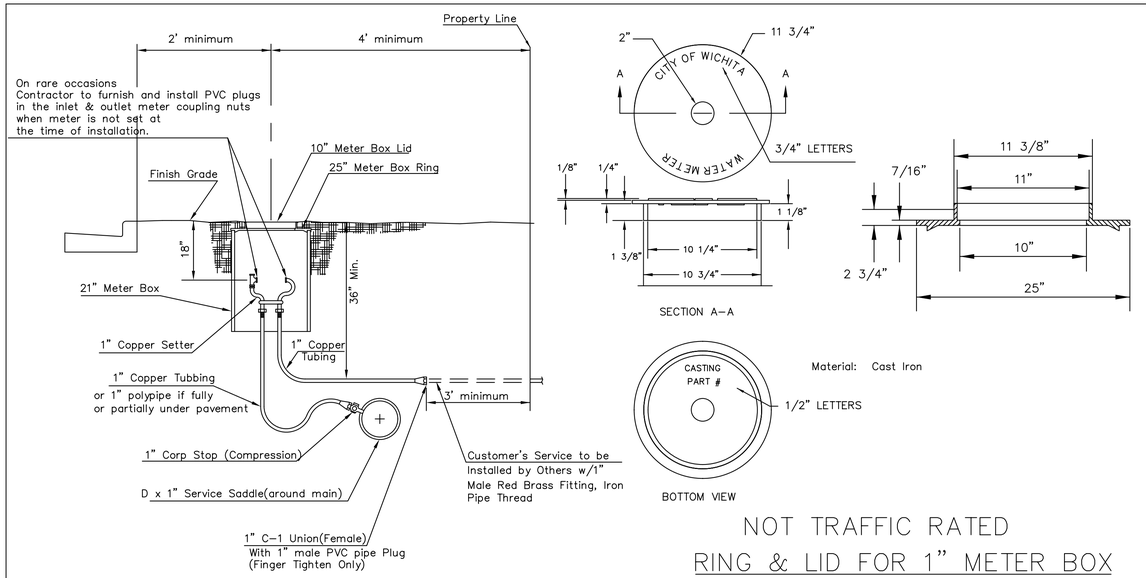
STANDARD WATER ASSEMBLY DETAIL

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

WL-101



Minimum length of pigtail on consumer side is 36" of copper tubing from meter set.

Bore hole under paving shall be a maximum of 2" in diameter and a minimum of 36" below top of pavement.

Service Saddles are required on all mains.

Meter boxes will be located on each lot to be served, as indicated in the SPECIAL PROVISIONS

TYPICAL 1" METER SETTING

NOT TRAFFIC RATED

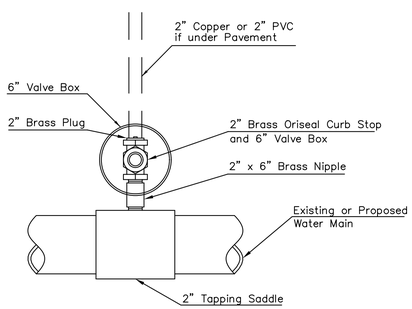
RING & LID FOR 1" METER BOX

1 – Ø Mueller Thread Corporation Stop
– Ø Type "K" Copper Tubing
1 – Ø Copper to Iron Union (Male)
1 – Ø Brass Curb Stop (Iron to Iron)
2 – Øx4" Brass Nipple

Air Release
2 – Ø Brass Elbows (90°)
1 – 1"x6" Brass Nipple
1 – 30" Monitor Cover
1 – 20" Meter Lid

NOTE:

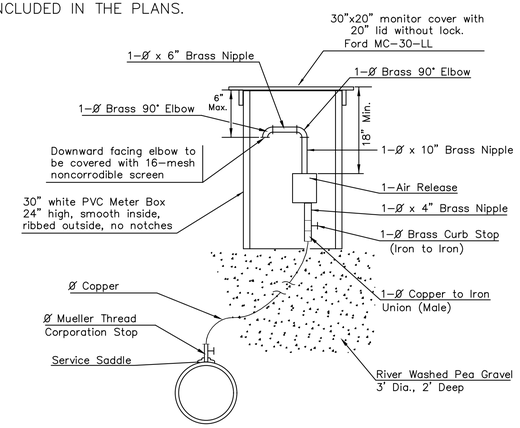
THE 1"/2" AIR RELEASE ASSEMBLY WILL TYPICALLY BE USED ON WATER MAINS 24" AND SMALLER, AS SPECIFICALLY DESIGNATED IN THE PLANS.
COMBINATION AIR RELAEASE ASSEMBLIES WILL BE SPECIFICALLY DESIGNED FOR PROJECTS WITH LARGER MAINS, AND WILL BE INCLUDED IN THE PLANS.



Note: Where the 2" Service Outlet Assembly is to be used to connect a 2" main to another main, the 2" valve shall be a 2" IPT Gate Valve. 2" ball or globe vavles shall not be approved for this use.

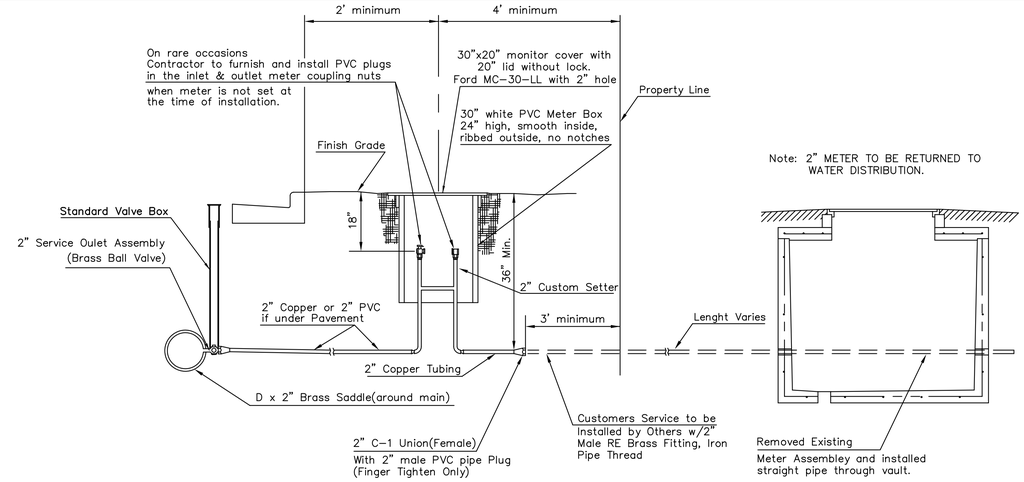
2" SERVICE OUTLET ASSEMBLY

TOP VIEW



MATERIALS FOR 1" or 2" AIR RELEASE ASSEMBLY

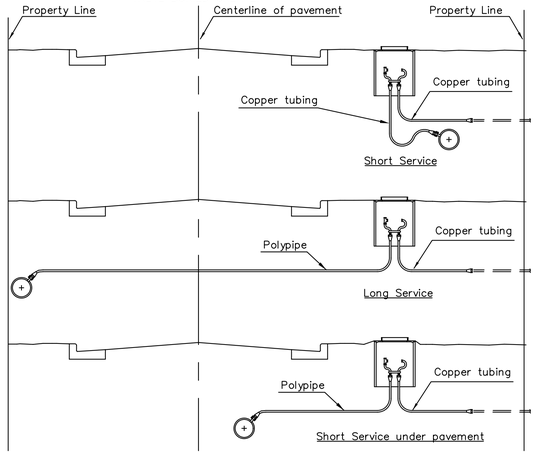
Ø = 1" or 2"



TYPICAL 2" METER SETTING

TYPICAL 2" METER SETTING INVOLVING EXISTING 2" METER VAULT

Note: ONE VALVE STEM EXTENSION FOR EACH VALVE BURIED GREATER THAN 5'.



SERVICE TYPES

REVISED: DECEMBER 2018	TM	BRASS NIPPLE LENGTH TO 10" ON THE 1" OR 2" AIR RELEASE ASSEMBLY

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

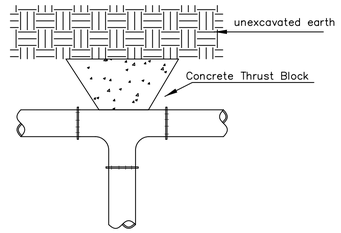
STANDARD WATER SERVICE DETAIL

CITY ENGINEER
PAUL GUNZELMAN, P.E.

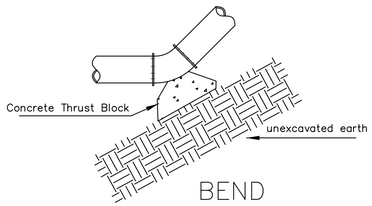
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

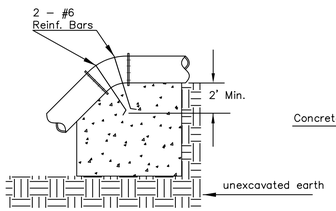
WL-102



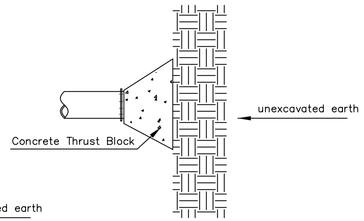
TEE



BEND



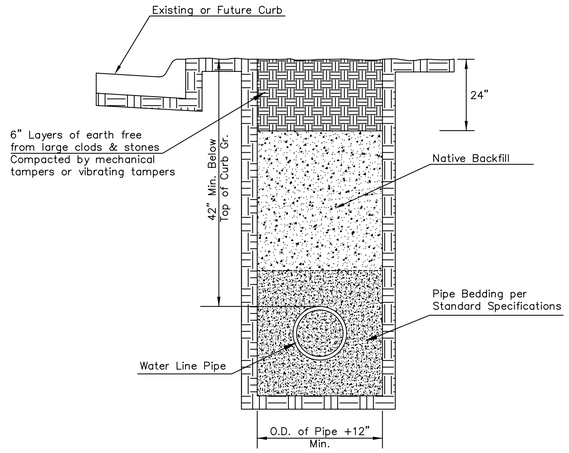
VERTICAL BEND



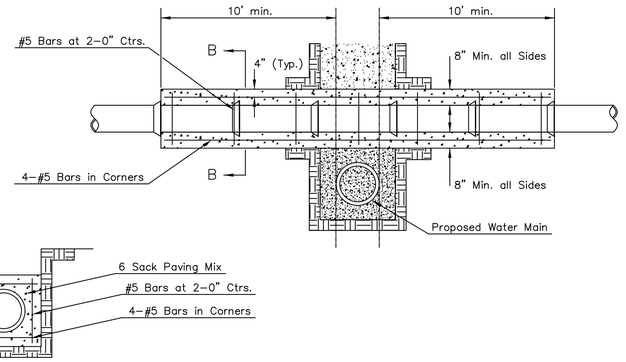
PLUG

PIPE SIZE	THRUST AT FITTINGS IN TONS–AT 150#/IN^{2}P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

TYPICAL THRUST BLOCKS



TRENCH COMPACTION IN ROAD RIGHT–OF–WAY

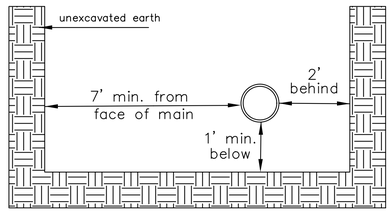


SECTION B–B

Note: Encasement to begin and end at a Bell on Sanitary Sewer Pipe.

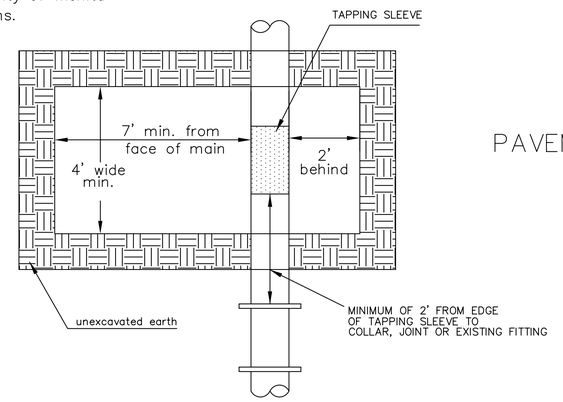
REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER

SIDE VIEW

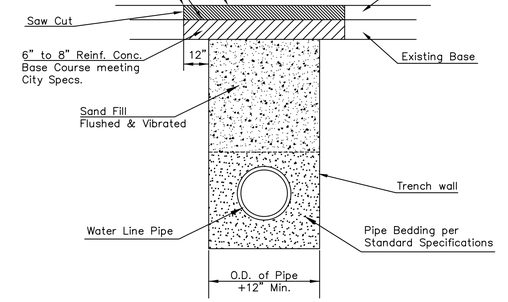


Note: When shoring is required it is to be per The City of Wichita Standard Specifications.

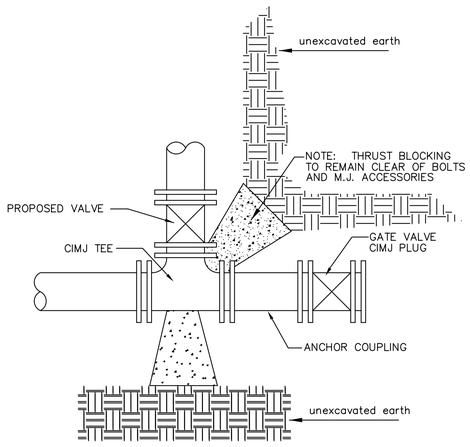
TOP VIEW



EXCAVATION FOR WET TAP



PAVEMENT REPLACEMENT & TRENCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS



KEY BLOCK DETAIL

* PLANS GOVERN UNLESS OTHERWISE NOTED ON PLANS

REVISED: JULY 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

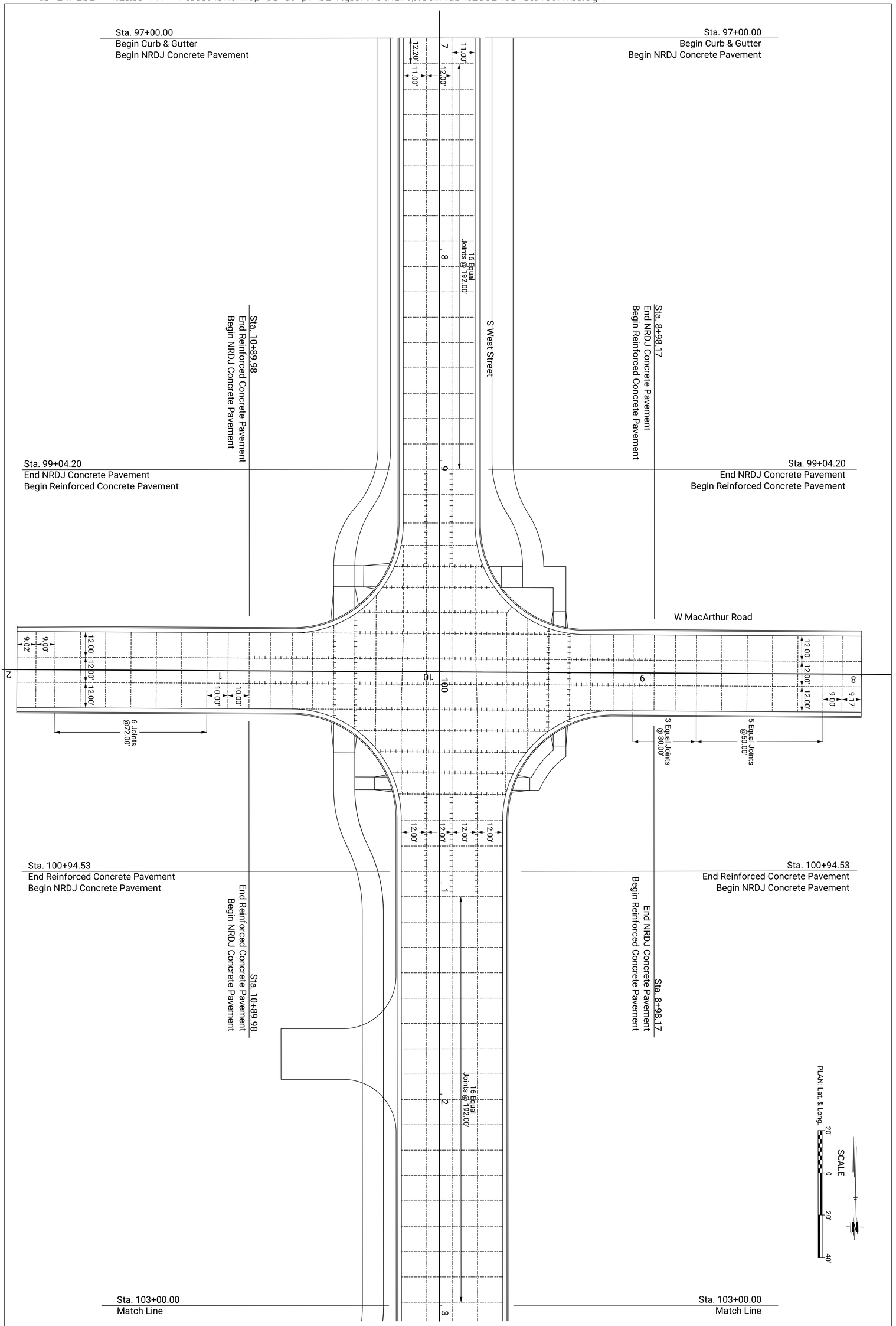
MISCELLANEOUS WATER DETAILS

CITY ENGINEER
PAUL GUNZELMAN, P.E..

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

WL-104



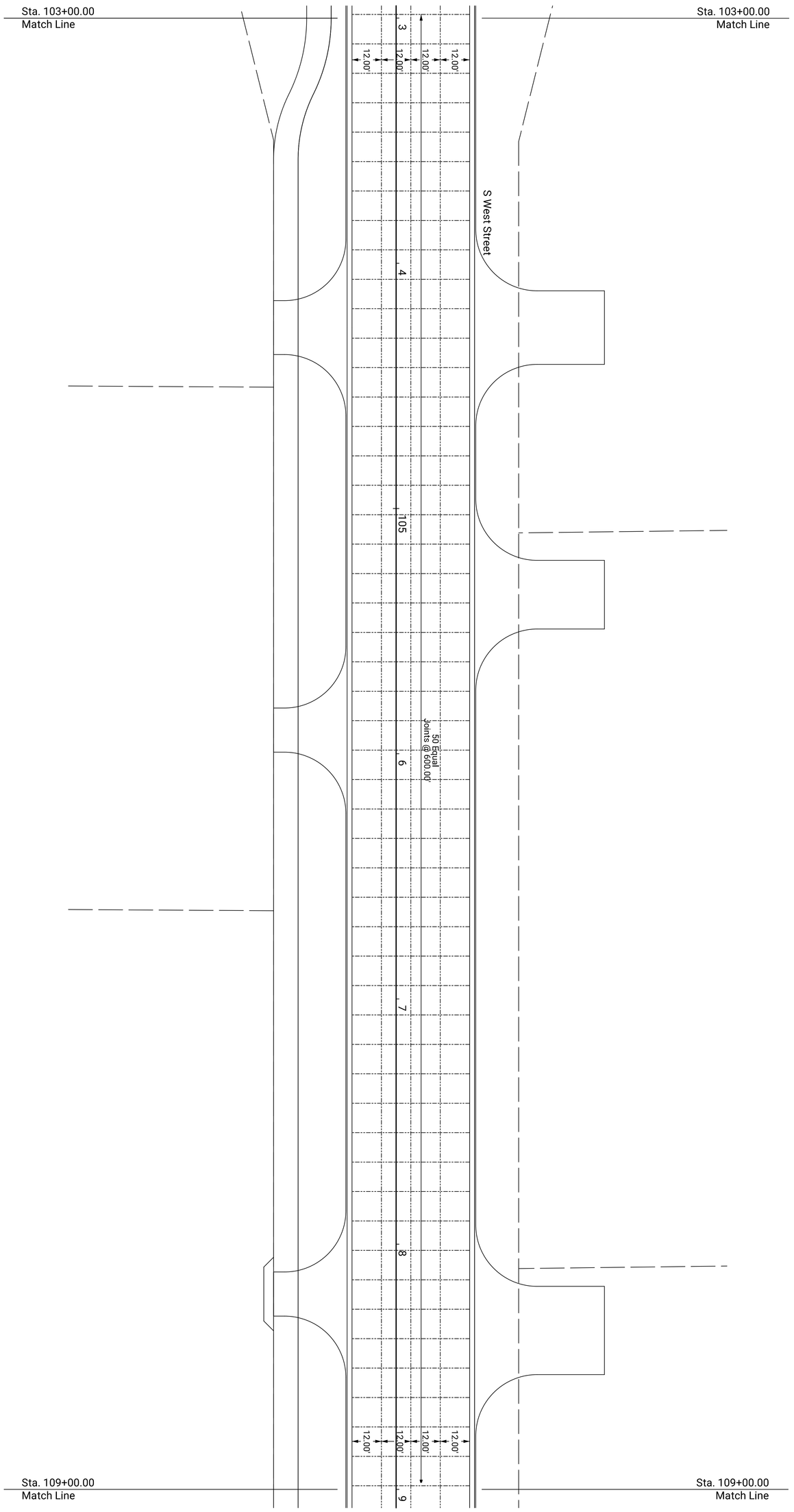
PROJ. NO:	30901193	
SCALE:	AS NOTED	
DATE:	10/9/2024	
DESIGNED BY:	PM	
DRAWN BY:	STAFF	
CHECKED BY:	TPW	
YEAR:	2024	
SHEET NO	56	

SHEET 56 OF 128

NO.	DATE	DESCRIPTION
		REVISIONS

WEST STREET - I-235 TO MACARTHUR

WEST STREET JOINT PLAN STA. 97+00 TO STA. 103+00



PLAN: Lat. & Long.

SCALE
20' 0 20' 40'

N

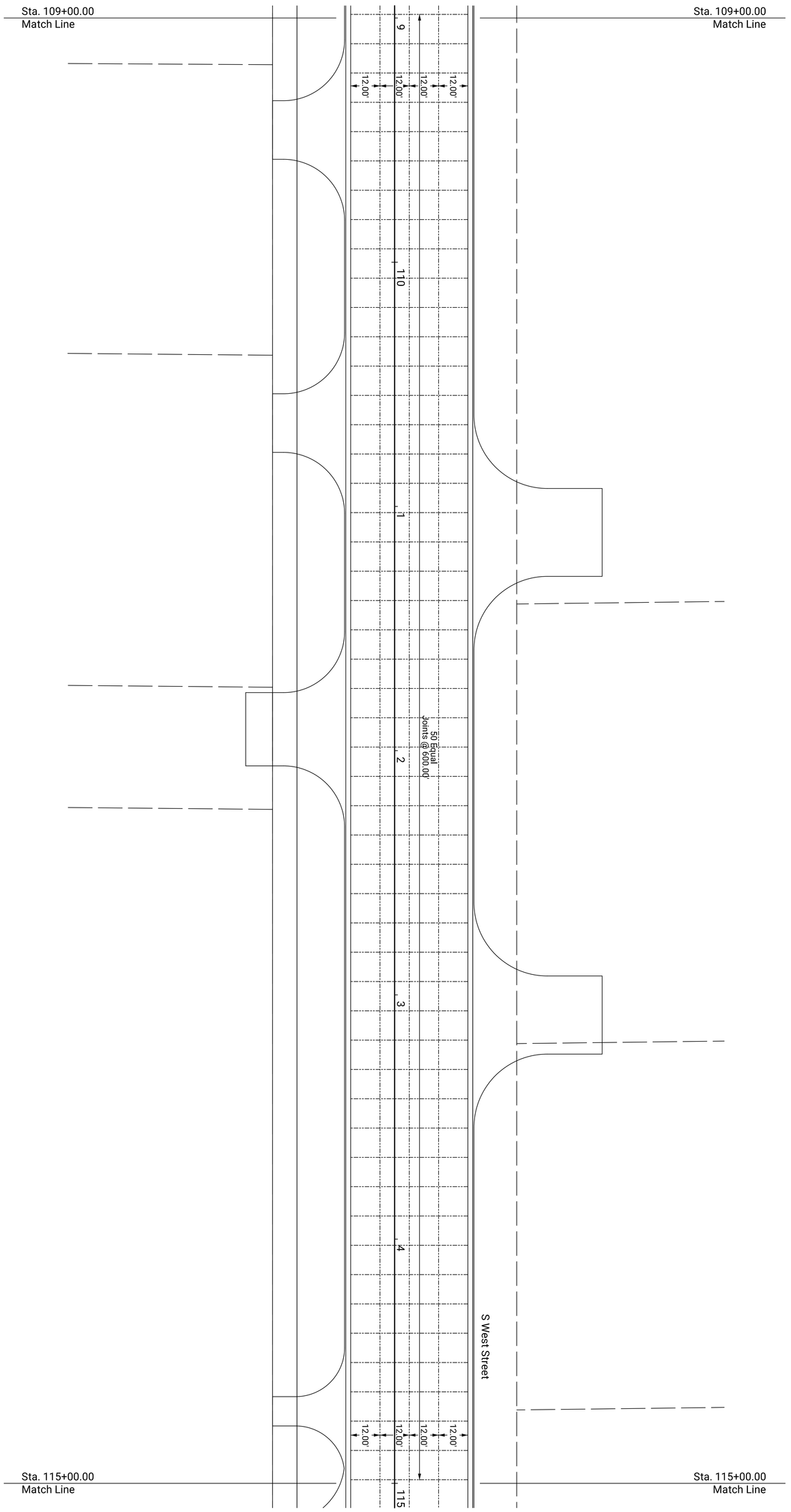
REVISIONS		
NO.	DATE	DESCRIPTION

PROJ. NO: 30901193
SCALE: AS NOTED
DATE: 10/9/2024
DESIGNED BY: STAFF
DRAWN BY: TPW
CHECKED BY: 2024
YEAR:
SHEET NO: 57
SHEET 57 OF 128

WEST STREET - I-235 TO MACARTHUR

WEST STREET JOINT PLAN
STA. 103+00 TO STA. 109+00

CITY OF WICHITA



PLAN: Lat. & Long.

SCALE

20' 0 20' 40'

N

PROJ. NO:	30901193	
SCALE:	AS NOTED	
DATE:	10/9/2024	
DESIGNED BY:	PM	
DRAWN BY:	STAFF	
CHECKED BY:	TPW	
YEAR:	2024	
SHEET NO	58	

SHEET 58 OF 128

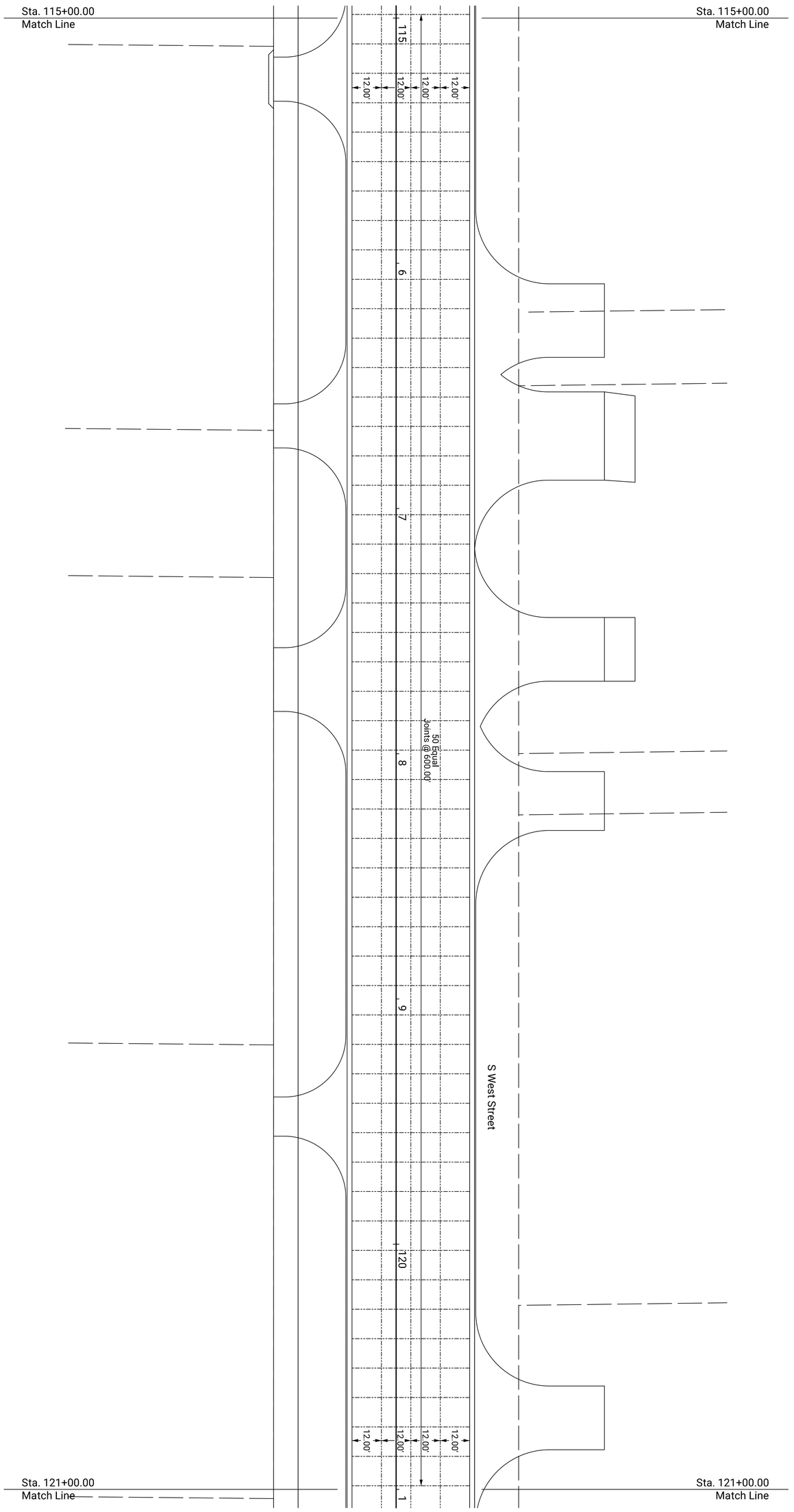
NO.	DATE	REVISIONS DESCRIPTION

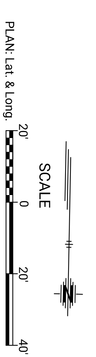
WEST STREET - I-235 TO MACARTHUR

WEST STREET JOINT PLAN
STA. 109+00 TO STA. 115+00

WSP

CITY OF WICHITA





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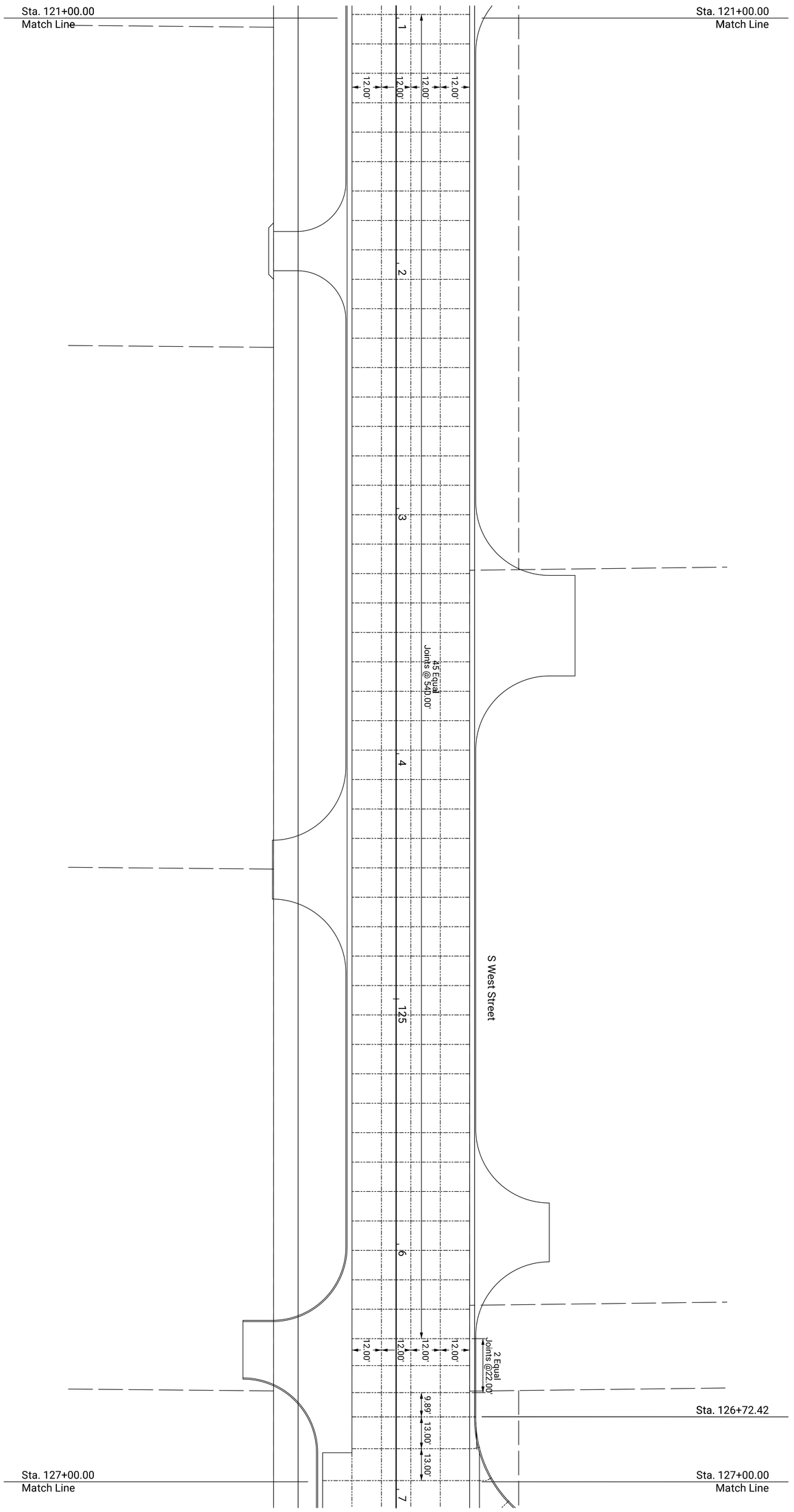
SCALE:	AS NOTED	
DATE:	10/9/2024	
DESIGNED BY:	STAFF	
DRAWN BY:	TPV	
CHECKED BY:		
YEAR:	2024	
SHEET NO	59	

SHEET 59 OF 128

NO.	DATE	DESCRIPTION
		REVISIONS

WEST STREET - I-235 TO MACARTHUR

WEST STREET JOINT PLAN
STA. 115+00 TO STA. 121+00



PROJ. NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	STAFF
DRAWN BY:	TPW
CHECKED BY:	
YEAR:	2024
SHEET NO	60

SHEET 60 OF 128

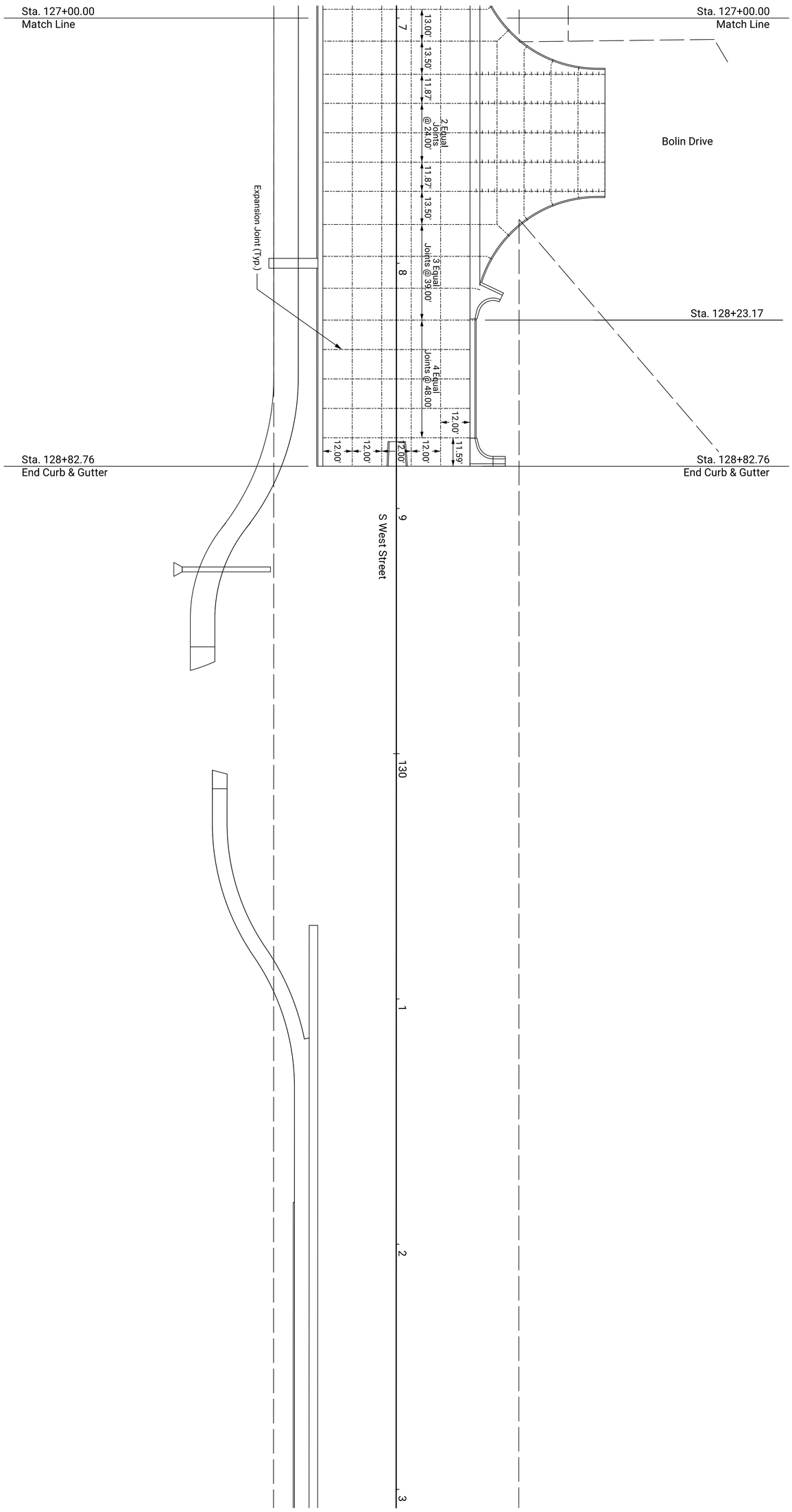
NO.	DATE	DESCRIPTION
		REVISIONS

WEST STREET - I-235 TO MACARTHUR

WEST STREET JOINT PLAN
STA. 121+00 TO STA. 127+00

WSP

CITY OF WICHITA



PLAN: Lat. & Long.

SCALE
20' 0 20' 40'

N

PROJ. NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	STAFF
DRAWN BY:	TPW
CHECKED BY:	
YEAR:	2024
SHEET NO	61
SHEET 61 OF 128	

NO.	DATE	REVISIONS / DESCRIPTION

WEST STREET - I-235 TO MACARTHUR

WEST STREET JOINT PLAN
STA. 127+00 TO STA. 133+00

WSP

CITY OF WICHITA

NOTE TO DESIGNER: Designer shall identify any project specific changes to the standard sheets or specifications. All changes shall be approved by City of Wichita and identified on "MODIFICATIONS TO SIGNAL STANDARDS OR SPECS". Design shall update peak hour volumes for the design intersection(s).

GENERAL NOTES

1. TRAFFIC SIGNAL SPECIFICATIONS (PART 700), STANDARD DRAWINGS, CHECKLISTS, AND OTHER INFORMATION MAY BE FOUND ONLINE AT: HTTPS://WICHITA.GOV/PWU/PAGES/REGULATIONS.ASPX
   IF THERE IS A DISCREPANCY BETWEEN OR AMONG THE FOLLOWING CONTRACT DOCUMENTS, THE GOVERNING RANKING OR ORDER OF PRECEDENCE IS:
   A. INFORMATION RECEIVED AT PREBID / ADDENDUM(S)
   B. PLANS
   C. PROJECT SPECIAL PROVISIONS
   D. SPECIAL PROVISIONS
   E. STANDARD SPECIFICATIONS

   THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY RELATED TO THE WORK BEING PERFORMED.

2. ALL WORK WILL BE CONFINED WITHIN THE EXISTING ROADWAY RIGHT-OF-WAY OR RIGHT-OF-WAY SHOWN PER PLAN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY AND KEEP INSTALLATION OF ALL EQUIPMENT AND DEVICES WITHIN THE APPROVED RIGHT-OF-WAY.

3. CONTRACTOR SHALL MAINTAIN 2 FT CONDUIT CLEARANCE FROM ALL LANDSCAPED FEATURES AND IRRIGATION SYSTEMS EXISTING WITHIN THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE INCURRED TO ANY EXISTING UNDERGROUND SPRINKLER SYSTEM DURING CONSTRUCTION. ANY LANDSCAPING OR IRRIGATION SYSTEMS DISTURBED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL CONDITION OR AS ACCEPTABLE BY THE ENGINEER AND OWNER THEREOF. NO ADDITIONAL PAYMENT WILL BE MADE.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ALL DISTURBED WORK AREAS. RESTORATION INCLUDES SEEDING, FERTILIZING, MULCHING, AND THE REMOVAL OF ALL UNUSED MATERIAL AND DEBRIS FROM THE WORK AREA ACCORDING TO THE STANDARD SPECIFICATIONS AND AS REQUIRED BY THE ENGINEER. ALL GRADING WORK SHALL SLOPE AWAY FROM FOUNDATIONS TO PREVENT PONDING. ADEQUATE TEMPORARY PROTECTION AGAINST EROSION SHALL BE PROVIDED ACCORDING TO CITY OF WICHITA SPECIFICATIONS.

5. THE CONTRACTOR SHALL DETERMINE ANY CONFLICTS WITH EXISTING UTILITIES PRIOR TO INITIATION OF CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE ENGINEER UPON DETERMINATION OF ANY UTILITY CONFLICTS.

6. LOCATING, TRACING, AND POTHOLING FOR EXISTING UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. DISTURBED AREAS SHALL BE RESTORED WITH SIMILAR MATERIAL AND CONSTRUCTION METHODS. NO ADDITIONAL PAYMENT WILL BE MADE FOR LOCATING OR POTHOLING EXISTING UTILITIES, INCLUDING PAVEMENT RESTORATION. ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY FOR LOCATING EXISTING UTILITIES SHALL NOT BE PAID FOR DIRECTLY BUT IS SUBSIDIARY TO OTHER ITEMS OF THE CONTRACT.

7. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CALL DIG SAFE AT 811 OR 1-800-344-7233 (1-800-DIG SAFE) TO REQUEST THE UTILITIES BE MARKED IN THAT AREA. THE CONTRACTOR SHALL ALSO CONTACT ANY AND ALL UTILITIES AND LOCAL GOVERNMENT AGENCIES NOT PARTICIPATING IN LOCATION SERVICES.

8. THE CITY WILL SURVEY AND STAKE LOCATIONS WHERE POLES, FOUNDATIONS, CABINETS, POWER SERVICES, AND SERVICE BOXES ARE TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE STAKING WITH THE CITY WITH ADVANCED NOTICE. STAKED LOCATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ANY EXCAVATION.

9. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. ALL TRAFFIC CONTROL PLANS AND LANE CLOSURES SHALL BE PRE-APPROVED BY THE ENGINEER IF NOT SPECIFICALLY PROVIDED IN THE CONTRACT DOCUMENTS.

10. THE PUBLIC PASSAGE ON THE EXISTING SIDEWALK OR PEDESTRIAN PATHWAY SHOULD BE SAFE, PROTECTED, AND ADA ACCESSIBLE. IF PUBLIC PASSAGE IS NOT POSSIBLE, A REROUTE AROUND THE WORK AREA IS REQUIRED. REROUTE MUST BE CLEARLY IDENTIFIED, ADA ACCESSIBLE, AND MEET ALL APPLICABLE REGULATIONS.

11. POWER COMPANY SHALL BE NOTIFIED AT LEAST TWO (2) WEEKS AND AGAIN AT 72 HOURS PRIOR TO THE ANTICIPATED SIGNAL TURN ON. THE CONTRACTOR SHALL NOTIFY THEM TO COORDINATE POWER HOOK-UP, INSTALLATION OF LUMINAIRES (IF APPLICABLE), AND ANY OTHER ITEMS REQUIRED FOR COMPLETION OF THE TRAFFIC SIGNAL. IF AVAILABLE, PROVIDE ENGINEER WITH ANY WORK ORDER/CASE NUMBERS.

12. HIGH VOLTAGE POWER LINES MAY BE WITHIN THE PROJECT LIMITS. ALL WORK IS TO BE PERFORMED IN CONFORMANCE WITH ALL STATE, LOCAL, FEDERAL, UTILITY, AND CONTRACT REQUIREMENTS. THE CITY HAS NO CONTROL OVER THE MEANS, METHODS, CHOICE OF EQUIPMENT, SEQUENCING OF WORK, AND SAFETY PRACTICES USED WHEN WORKING IN, ON, OR AROUND HIGH VOLTAGE LINES OR OTHER UTILITY STRUCTURES AS THESE ITEMS ARE THE RESPONSIBILITY OF THE PARTIES CONTROLLING THE PHYSICAL PERFORMANCE OF THE WORK.

13. ALL GROUNDING SYSTEMS SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND MANUFACTURER SPECIFICATIONS. FOLLOW APPLICABLE NEC REQUIREMENTS FOR INSTALLATION OF ALL PROJECT MATERIALS. THE CONTRACTOR SHALL PROPERLY GROUND ALL EQUIPMENT, CABINET, AND GROUND RODS PER APPLICABLE STANDARDS OR AS DIRECTED BY ENGINEER.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE ELECTRICAL SERVICE CONNECTION IN THE CITY'S NAME AT THE LOCATIONS SHOWN ON THE PLANS. DIRECT COSTS FOR PERMANENT ELECTRICAL SERVICES TO BE PAID BY CITY. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SERVICE (IF REQUIRED).

15. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT CATALOG CUTS OR SHOP DRAWINGS FOR ALL EQUIPMENT TO BE INSTALLED. IT IS THE PRIME CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL SHOP DRAWINGS, TESTING RESULTS, AND ALL OTHER REQUIRED SUBMITTALS PRIOR TO SUBMITTING FOR ENGINEER'S APPROVAL. THE ENGINEER WILL NOT REVIEW ANY SUBMITTED DOCUMENTATION OR BEGIN ANY TESTING PERIODS UNTIL THIS WORK IS COMPLETE.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND SALVAGING EXISTING EQUIPMENT AS NOTED. 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 MAINTENANCE DEPARTMENT (316) 268-4013. 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.

17. WHEN SALVAGED EQUIPMENT IS NOT TO BE REINSTALLED, IT SHALL BE DELIVERED UNDAMAGED TO THE CITY OF WICHITA OR RESPECTIVE OWNER. IF NOT OTHERWISE IDENTIFIED ON THE PLANS, EQUIPMENT SHOULD BE DELIVERED TO CENTRAL MAINTENANCE FACILITY (CMF) AT 1801 S MCLEAN BLVD, WICHITA, KS 67213. THE CONTRACTOR SHALL SCHEDULE THE DELIVERY WITH TRAFFIC SIGNAL MAINTENANCE A MINIMUM OF 24 HOURS IN ADVANCE. THE STORED EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL REMOVED BY OWNER FROM THE WORK SITE OR DELIVERED TO THE OWNER.

18. THE TRAFFIC SIGNAL CONTRACTOR SHALL NOTIFY THE ENGINEER 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 PROVIDE THE CITY AN ELECTRONIC LIST OF GPS READINGS (EXCEL FORMAT) FOR ALL INSTALLED DEVICES, PULL BOXES, SERVICE BOXES, CABINETS, POWER METERS, AND TRANSFORMERS. THE GPS READINGS SHALL MATCH THE CITY OF WICHITA'S CURRENT GEOGRAPHIC INFORMATION SYSTEM (GIS) WITH 'SUB-METER' ACCURACY. THE PROJECT SURVEY SHALL BE BASED ON NAD83, KANSAS STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, U.S. SURVEY FEET DEFINITION. THE VERTICAL DATUM SHALL BE NAVD88. GPS AND THREE TIE-POINT MEASUREMENTS SHALL BE OBTAINED FOR EACH BURIED ELECTRICAL PULL BOX PRIOR TO PLACING BACKFILL MATERIAL. CONDUITS WHICH ARE NOT PLACED IN A STRAIGHT LINE, SHALL BE LOCATED AS NEEDED IN ORDER TO ESTABLISH ITS EXACT LOCATION AND DEPTH.

TRAFFIC SIGNAL TURN-ON AND ACCEPTANCE PROCEDURE

1. AT LEAST TWO (2) WORKING DAYS PRIOR TO SCHEDULED SIGNAL ACTIVATION, ALL TESTING SHOULD BE COMPLETED AND SUCCESSFUL, ALL DEFECTS AND DEFICIENCIES CORRECTED, ALL INDICATIONS OPERATIONAL AND PROPERLY AIMED, CABLES TAGGED, CABINETS AND SURROUNDING AREAS CLEANED OF DEBRIS, 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.

2. THE CONTRACTOR SHALL REVIEW AND SUBMIT TO THE ENGINEER A COMPLETED "CITY OF WICHITA TRAFFIC SIGNAL INSPECTION CHECKLIST" AVAILABLE ONLINE AT WWW.WICHITA.GOV. THE CHECKLIST MUST BE COMPLETED PRIOR TO CITY, TRAFFIC SIGNAL MAINTENANCE, OR ENGINEERING FULL INSPECTION.

3. THE ENGINEER AND CITY WILL CONDUCT A FULL INSPECTION OF THE SIGNAL SYSTEM. UPON SATISFACTORY CONDITIONS OF THE SIGNAL SYSTEM, THE TURN-ON SCHEDULE WILL BE CONFIRMED. THE CITY SHALL BE NOTIFIED AT LEAST ONE (1) WEEK IN ADVANCE OF THE ANTICIPATED SIGNAL TURN-ON DATE. ANY DEFICIENCIES FOUND DURING THE FINAL INSPECTION SHALL RESULT IN THE RESCHEDULING OF THE ACTIVATION.

4. ACTUAL ACTIVATION SHALL CONSIST OF THE FOLLOWING STEPS:
   A. INSTALLATION OF ALL REQUIRED EQUIPMENT IN THE CONTROLLER CABINET
   B. TESTING OF INSTALLED EQUIPMENT
   C. UNBAGGING OF ALL SIGNAL HEADS AND SIGNS (IF APPLICABLE)
   D. ACTIVATION OF THE SIGNAL WITH THE CONTRACTOR'S FLAGGER STOPPING ALL TRAFFIC MOMENTARILY AS THE SIGNAL IS TURNED ON.
   E. MINOR RE-AIMING OF SIGNAL HEADS, IF NECESSARY

5. ACTIVATION OF THE TRAFFIC SIGNAL SHALL NOT BE SCHEDULED FOR WEEKENDS, FRIDAYS OR DAYS RIGHT BEFORE PUBLIC HOLIDAYS. ENERGIZING OF SIGNAL (TURN-ON) TO OCCUR MONDAY - THURSDAY, 9:00 AM - 3:00 PM UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE ENGINEER.

6. TEST PERIOD - FOLLOWING COMPLETION OF ALL ELECTRICAL APPARATUS HOOKUPS AND THE SYSTEM TURN-ON, THE SIGNALS SHALL OPERATE SATISFACTORILY FOR 30 DAYS UNDER NORMAL OPERATION PRIOR TO ACCEPTANCE BY THE CITY. DURING THE TEST PERIOD, THE SIGNALS SHALL OPERATE TROUBLE-FREE WITH NO MAJOR OR MINOR FAILURES OF THE CONTROLLER OR ITS COMPONENTS AS DETERMINED BY THE TRAFFIC ENGINEER. SHOULD ANY DEFECT DEVELOP UNDER NORMAL AND PROPER OPERATING CONDITIONS DURING THE TESTING PERIOD AND PRIOR TO ACCEPTANCE BY THE CITY, THIS MALFUNCTION SHALL BE CORRECTED BY AND AT THE EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, MATERIALS AND ASSOCIATED COSTS. MINOR FAILURES SUCH AS LAMP FAILURES OR LOOP DETECTOR RE-TUNING WILL NOT BE THE BASIS FOR STARTING A NEW TEST PERIOD, PROVIDED THE FAILURES ARE REPAIRED IMMEDIATELY AND THE SAME FAILURES DO NOT RECUR DURING THE REMAINDER OF THE TEST PERIOD. A MAJOR MALFUNCTION OR FAILURE OF THE CONTROLLER AND ITS COMPONENTS WILL RESULT IN A NEW 30 DAY TEST PERIOD BEING IMPLEMENTED AFTER THE REPAIRS HAVE BEEN MADE. COMPLETION OF THE TEST PERIOD DOES NOT ABSOLVE THE CONTRACTOR OF ANY WARRANTY.

7. 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 MAINTENANCE DIVISION MAY TAKE CORRECTIVE ACTION AND HAS THE DISCRETION TO BILL THE CONTRACTOR FOR ALL RELATED EXPENSE, INCLUDING OVERHEAD.

8. FINAL ACCEPTANCE BY THE CITY IS CONDITIONAL UNTIL THE CONTRACTOR HAS CORRECTED ALL DEFECTS AND PUNCH LIST ITEMS. FINAL ACCEPTANCE WILL BE BY WRITTEN NOTICE OF ENGINEER.

9. WARRANTY - THE WARRANTY PERIOD BEGINS ONCE THE FINAL ACCEPTANCE BY THE CITY HAS OCCURRED. CONFIRMATION OF THE ACCEPTANCE SHOULD BE PROVIDED IN WRITTEN DOCUMENTATION.

LEGEND

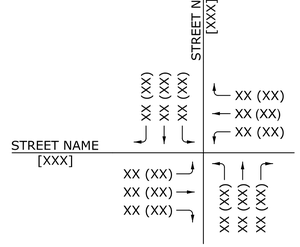
- LUMINAIRE
- TRAFFIC SIGNAL POLE
- TRAFFIC SIGNAL PEDESTAL
- APS PUSHBUTTON STATION
- TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION
- TRAFFIC SIGNAL HEAD W/TYPE DESIGNATION & BACKPLATE
- PEDESTRIAN SIGNAL & PUSHBUTTON
- PAD MOUNTED CONTROLLER
- SERVICE BOX
- SECONDARY SERVICE POINT
- P.B. PEDESTRIAN PUSH BUTTON
- DETECTION ZONE
- 3" CONDUIT
- 2" CONDUIT
- 1 1/2" CONDUIT
- SIGN ON 1 BRACKET
- SIGN ON 2 BRACKETS
- SB / ADV RADAR DETECTION (ADVANCE OR STOP BAR)
- VIDEO DETECTOR
- PTZ CCTV
- 23 DETECTOR NUMBER
- 6 POLE/PEDESTAL NUMBER
- 2 SERVICE BOX NUMBER

EXISTING EQUIPMENT REMOVAL SUMMARY

LOCATION	DESCRIPTION OF ITEM	QUANTITY
STA 99+38.32	Existing Traffic Signal Controller	1
STA 99+45.83	West Street Signal Pole & Mast Arm	1
STA 100+50.59	West Street Signal Pole & Mast Arm	1
STA 09+28.33	MacArthur Road Signal Pole & Mast Arm	1
STA 10+64.61	MacArthur Road Signal Pole & Mast Arm	1

PEAK HOUR VOLUMES

A.M. (P.M.) PEAK HOUR VOLUME
[XXX] 24-HOUR VOLUME (TWO-WAY ADT)

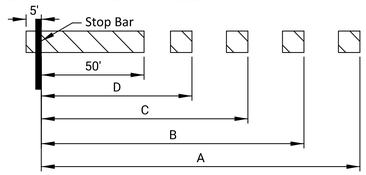


A.M. PEAK HOUR = X:XX - X:XX AM
P.M. PEAK HOUR = X:XX - X:XX PM
COUNTS CONDUCTED XX/XX/XX

ADVANCE DETECTION DISTANCE & TIMING CALCULATION

SPEED (MPH)	MIN. ADVANCE DETECTION ZONE DISTANCES (FEET)				*TOTAL EXT. (SEC.)
	A	B	C	D	
60	610	420	260	92	2.0
55	490	320	210	92	2.0
50	420	260	92	-	2.0
45	320	210	92	-	2.0
40	260	92	-	-	2.0
35	210	92	-	-	2.0
<35 MPH NO ADVANCE DETECTION. STOP BAR ZONE ONLY (55' TYP.)					

* DETECTOR EXTENSION TIMINGS SHALL BE PROGRAMMED INTO THE TRAFFIC SIGNAL CONTROLLER.



MODIFICATIONS TO SIGNAL STANDARDS OR SPECS

NO.	DESCRIPTION OF ITEM	SPEC. NO.	SHEET NO.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

TRAFFIC SIGNAL GENERAL NOTES

TRAFFIC ENGINEER: MIKE ARMOUR, P.E. APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

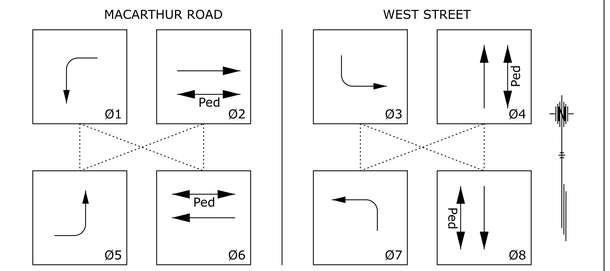
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET: 62 of 128

TR-101

NOTE TO DESIGNER: Designer to update signal faces and applicable phases. Associated phase to cardinal direction shall not change. Northing and easting should be to the 0.XX. Other than signal phasing, changes to this sheet do not need to be listed as "Modifications" on the general notes.

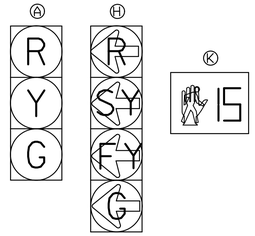
PHASE DIAGRAM



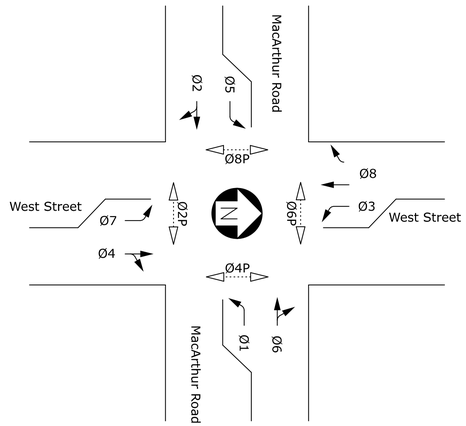
NOTE: DOTTED LINES CONNECTING PHASES INDICATE PHASES THAT CAN OCCUR CONCURRENTLY. PEDESTRIAN PHASE TO ONLY OCCUR AFTER PUSH BUTTON ACTIVATION.

SIGNAL FACES

NOTE: ALL LENSES SHALL BE 12" L.E.D. PEDESTRIAN LENSES SHALL BE 16" AND BE COUNTDOWN SIGNALS.

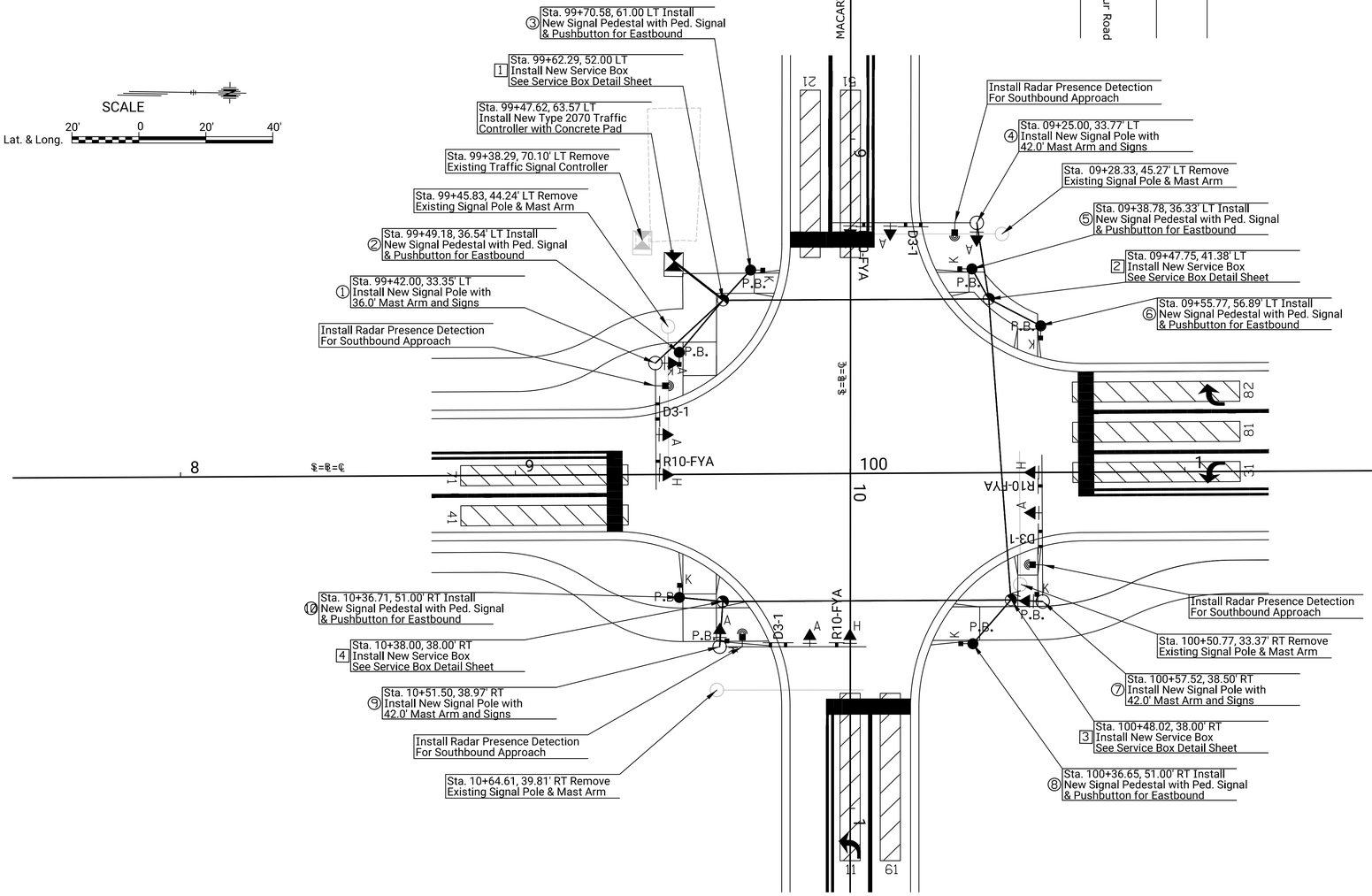


SIGNAL PHASES



SCALE

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



STRUCTURE LOCATIONS

POLE NO.	*TYPE	STATION	OFFSET	NORTHING	EASTING	**ELEV.
1	POLE	99+42.00	33.35' LT	1662176.3640	1634045.2059	1288.84
2	PED	99+70.58	61.00' LT	1662204.4179	1634017.0103	1288.99
3	PED	99+49.18	36.54' LT	1662183.4774	1634041.8782	1288.90
4	POLE	09+25.00	33.77' LT	1662271.7781	1634001.9585	1288.91
5	PED	09+55.77	56.89' LT	1662291.2993	1634032.4746	1289.01
6	PED	09+38.78	36.33' LT	1662270.5153	1634015.7538	1288.95
7	POLE	100+57.52	38.50' RT	1662293.0365	1634114.8176	1288.91
8	PED	100+36.65	51.00' RT	1662271.3515	1634076.7340	1289.01
9	POLE	10+51.50	38.97' RT	1662196.7406	1634129.6809	1288.92
10	PED	10+36.71	51.00' RT	1662184.4997	1634115.1239	1288.98
Meter	-	XX+XX.XX	XX.XX' RT/LT	X	X	X
Cont.	-	99+47.62	63.57 LT	1662182.6127	1634078.4401	1288.87

SERVICE BOX LOCATIONS

BOX NO.	STATION	OFFSET	NORTHING	EASTING	**ELEV.
1	99+62.29	52.00' LT	1662196.2991	1634026.1663	1288.95
2	09+47.75	41.38' LT	1662275.6855	1634024.6571	1288.98
3	100+48.02	38.00' RT	1662283.5307	1634114.5033	1288.96
4	10+38.00	38.00' RT	1662197.5149	1634116.1637	1288.98

*STRUCTURE TYPES: POLE - TRAFFIC SIGNAL POLE; PED - TRAFFIC SIGNAL PEDESTAL; PB STA - APS PUSHBUTTON STATION

**APPROXIMATE TOP OF FOUNDATION. SEE STANDARDS AND SPECS FOR ADDITIONAL INFORMATION. FOUNDATIONS SHALL NOT CREATE A "LOW AREA".

GENERAL NOTES:

1. CONDUIT RUNS ARE APPROXIMATE & MAY BE FIELD ADJUSTED TO CLEAR OBSTRUCTIONS & FACILITATE WIRING, AS APPROVED BY THE ENGINEER. ALL CONDUIT RUNS SHALL BE STRAIGHT BETWEEN BOXES AND/OR FOUNDATIONS.
2. EXISTING FEATURES & UTILITIES ARE SHOWN FROM AVAILABLE INFORMATION & SHOULD BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY UTILITIES & THEIR EXACT LOCATION PRIOR TO CONSTRUCTION.
3. SEE "TRAFFIC SIGNAL INSTALLATION DETAIL SHEET" (TR-105) FOR SIGN SPACING AND ADDITIONAL DETAILS.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

WEST STREET & MACARTHUR
TRAFFIC SIGNAL
PLAN SHEET

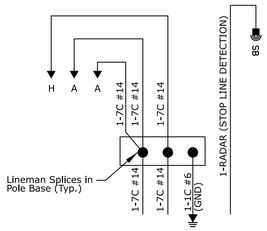
TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

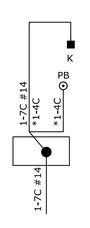
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

NOTE TO DESIGNER: Calculate signal clearance times per recommendations from NCHRP Report 731. Yellow and All-Red times shall be rounded up to the nearest 0.5 second. Designer shall provide pole wiring diagrams. Pole wiring uses a separate 7C for each 3,4,or 5 section head per specification 702.21.6. Cable call-out shall be in consistant order on diagram.

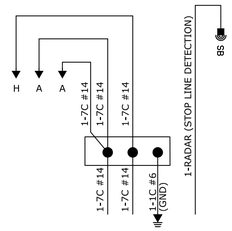
POLE WIRING DIAGRAM



POLE 1

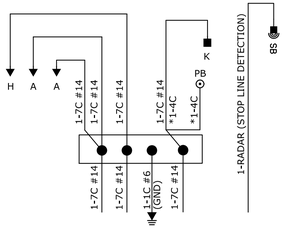


POLE 2, 3, 5, 6, 8, 9



POLE 4

POLE 7



POLE 10

LEGEND

COND.	CONDUIT
SIG.	SIGNAL CABLE
PED.	PEDESTRIAN SIGNAL CABLE
DET.	DETECTOR LEAD-IN CABLE
ST. LT.	STREET LIGHTING CABLE
GRND.	WIRE FOR POLE GROUND
COAX.	COAXIAL CABLE
FUT.	FUTURE CABLE
B.O.	BLANK OUT SIGN CABLE
PREEMPT	PREEMPTION CABLE
RADAR	RADAR DETECTION CABLE

*4-C FROM PEDESTRIAN SIGNAL HEAD (K) TO ADA PUSHBUTTON PROVIDED BY SUPPLIER

DETECTOR SUMMARY

DETECTOR NUMBER	DETECTION ZONE SIZE	STOP BAR DETECTION	ADVANCED DETECTION	* TIMINGS (SEC) TOTAL STRETCH + EXTENSION	* TIMINGS (SEC) DELAY	MODE PRESENCE	MODE PULSE	PHASE CALLED	DISTANCE FROM STOP BAR
11	6' x 55'	x				x		1	5'
21	6' x 55'	x				x		2	5'
31	6' x 55'	x				x		3	5'
41	6' x 55'	x				x		4	5'
51	6' x 55'	x				x		5	5'
61	6' x 55'	x				x		6	5'
71	6' x 55'	x				x		7	5'
81	6' x 55'	x				x		8	5'
82	6' x 55'	x				x		8	5'

* TIMINGS SHOWN IN DETECTOR SUMMARY CHART INCLUDE THE TOTAL STRETCH + EXTENSION. DETECTOR TIMINGS SHALL BE PROGRAMMED INTO THE TRAFFIC SIGNAL CONTROLLER. SEE TRAFFIC SIGNAL GENERAL NOTES FOR ADVANCED DETECTION DISTANCE AND TIMING.

SUGGESTED TIMINGS (SEC.)

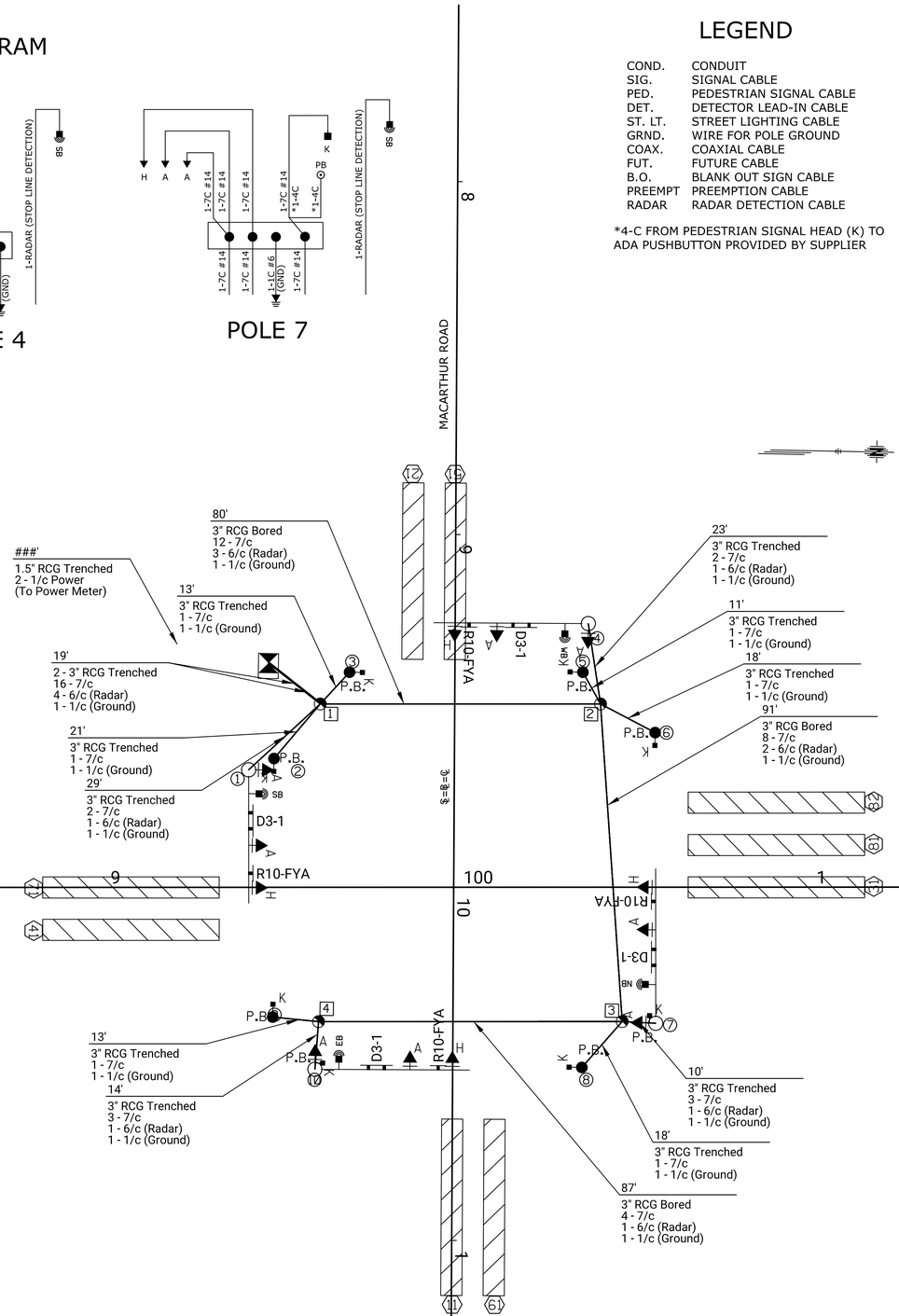
PHASE	MINIMUM INITIAL	*MAXIMUM GREEN SPLIT	**PEDESTRIAN WALK	**PEDESTRIAN FDW	**PEDESTRIAN SDW	***CLEARANCE YELLOW	***CLEARANCE ALL RED
1	x	x	x	x	x	x	x
2							
3							
4							
5							
6							
7							
8							

CLEARANCE DESIGN SPEEDS:
___ ROAD = XX MPH
___ STREET = XX MPH

*MAXIMUM GREEN SPLIT IS FOR NON-PEDESTRIAN CALLS ONLY. TIMING INCORPORATES YELLOW & ALL RED CLEARANCE TIMES.

**PEDESTRIAN PHASING SHALL EXTEND PHASE WHEN CALLED IF APPROPRIATE. PEDESTRIAN CLEARANCE TIMES SHALL FOLLOW MUTCD GUIDELINES FOR PHASES.

***SIGNAL CLEARANCE TIMINGS ARE CALCULATED BASED ON RECOMMENDATIONS FROM NCHRP REPORT 731.



NOTES:

1. ALL MULTI-CONDUCTOR WIRE SHALL BE AWG #14 SOLID UNLESS SPECIFIED OTHERWISE. LABEL EACH WIRE AS SHOWN IN PART 700 SPECIFICATIONS.
2. ALL GROUND WIRE SHALL BE #6 AWG COPPER WIRE IN ACCORDANCE WITH ATM B-3. SOLID BARE COPPER WIRE SHALL BE USED FOR ALL EXTERIOR INSTALLATIONS INCLUDING SERVICE AND GROUND ROD BONDING. OTHERWISE, GREEN INSULATED STRANDED WIRE TYPE "THHN/THWN" SHALL BE USED.
3. GROUND WIRE SHALL BE BONDED TO EACH GROUND ROD AT EVERY POLE, PEDESTAL, SERVICE BOX, AND CONTROLLER TO FORM ONE CONTINUOUS GROUND CIRCUIT.
4. DETECTOR CABLES SHOULD RUN CONTINUOUS. SPLICES, IF REQUIRED, SHALL ONLY OCCUR IN THE POLE BASE AND MUST BE APPROVED BY THE CITY OF WICHITA TRAFFIC ENGINEER.
5. IN NO CASE SHALL MORE THAN 60% OF ANY CONDUIT BE FILLED BY AREA.
6. STREET LIGHTING CABLE SHALL BE SPLICED IN SERVICE BOXES. THE SPLICE SHALL BE MADE WATERPROOF.
7. SPLICES AT POLE BASE SHALL BE LINEMAN SPLICES PER SECTION 702.21.11. TERMINAL BLOCKS WILL NOT BE USED.
8. ALL CONDUIT SHALL BE HOT DIPPED GALVANIZED RIGID STEEL CONDUIT (GRC) AS SHOWN IN THE PROJECT SPECIFICATIONS.
9. DURING EMERGENCY FLASH OPERATIONS, ALL SIGNAL PHASES SHALL BE RED INDICATIONS. PEDESTRIAN PHASE SHALL BE DARK.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

LEGEND: SIGNAL HEAD (X) · VIDEO DETECTOR · RADAR DETECTOR · PTZ CCTV · LUMINAIRE · PED. HEAD (K) · PUSHBUTTON · GROUND · ST.LT. CONNECTOR KIT · SPLICE CONNECTION

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

WEST STREET & MACARTHUR TRAFFIC SIGNAL WIRING & TIMING DETAILS

TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

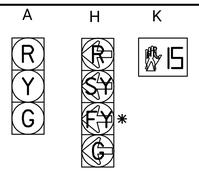
SHEET: 64 of 128

TR-104

NOTE TO DESIGNER: Mast arm lengths shall be in 6' increments (18' to 60'). If a longer mast arm is required, signal pole foundation design calculations must be submitted to the City of Wichita for review. The pad mounted 332L cabinet is typically used unless approved otherwise by City of Wichita Traffic Engineer. 5-Sections heads for left turn phase must be approved by the City of Wichita Traffic Engineer.

CHART A SIGNAL SUMMARY

Signal Face Arrangement	No. Sections (Per Face)	Signal Mounting Type	Quantity
A	3	Mast Arm w/ Backplate	4
H	4	Mast Arm w/ Backplate	4
K	2	Side-of-Pole	8
A	3	Side-of-Pole	4



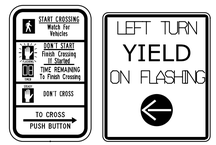
NOTES:
1. *SHALL NOT BE DISPLAYED WHEN OPERATING IN THE PROTECTED ONLY MODE.
2. ALL LENSES ARE L.E.D. UNLESS OTHERWISE NOTED.
3. SUBSCRIPT "P" INDICATED PROGRAMMED SIGNALS.
4. ALL LENSES SHALL BE 12" DIA. UNLESS OTHERWISE NOTED. PESDESTRIAN DISPLAY (K) SHALL BE RECTANGULAR WITH A WIDTH OF 18" AND HEIGHT OF 16".
5. BLANK OUT SIGN SIZE SHALL MEET MUTCD REQUIREMENTS FOR APPLICABLE STATIC VERSION OF THE SIGN.

CHART B TRAFFIC SIGNAL POLES

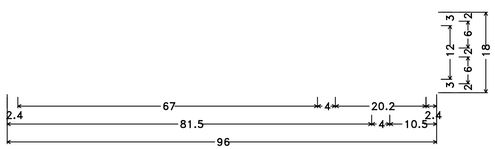
Pole Height	Signal Arm Length	Signal Arm Mounting Height	No. of Signals on Arm	Signal Spacing	Luminaire Arm Length	Luminaire Mounting Height	Quantity
20' 6"	42	19	2	25-37	N/A	N/A	3
20' 6"	36	19	2	20-32	N/A	N/A	1

CHART C OVERHEAD STREET NAME SIGNS

Sign	Legend	Length	Quantity
D3-1	MacArthur	96"	2
D3-1	West	72"	2



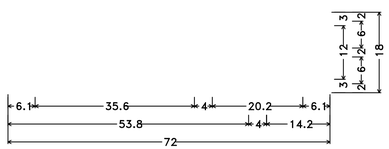
R10-3e R10-FYA



D3-1;
1.5" Radius, 0.8" Border, White on Green;
"MacArthur", D specified length; "0000", D; "S", D;
Table of distances between letter and object lefts

	M	a	c	A	r	t	h	u	r	0	0	0	0	
2.4	10.0	7.3	7.9	10.6	5.3	5.8	7.5	7.5	9.1	5.3	5.4	5.3	4.2	2.4

	S	
81.5	4.0	10.5



D3-1;
1.5" Radius, 0.8" Border, White on Green;
"West", D; "0000", D; "S", D;
Table of distances between letter and object lefts

	W	e	s	t	0	0	0	
6.1	12.8	8.9	8.7	9.2	5.3	5.4	5.3	4.2	6.1

	S	
53.8	4.0	14.2

USE FONT SERIES D. SHEETING SHALL BE ASTM TYPE XI SHEETING. SEE SPECIFICATION 703.8

BILL OF MATERIALS
-Quantities for Information Only-

Item	Quantity	Unit	Spec. No.	Note
CONTROLLER UNIT	x	EACH	703.2.1	
CONFLICT MONITOR	x	EACH	703.2.2	
LOAD SWITCH	x	EACH	703.2.3	
FLASHER	x	EACH	703.2.4	
FLASH TRANSFER RELAY	x	EACH	703.2.5	
SURGE PROTECTOR	x	EACH	703.2.6	
DC ISOLATOR	x	EACH	703.2.7	
AC ISOLATOR		EACH	703.2.8	
GPS CLOCK	x	EACH	703.2.9	
POWER STRIP	x	EACH	703.2.11	
LOOP DETECTOR (2 or 4 CHANNEL)		EACH	703.2.10	
POLE MOUNTED CABINET (336L)		EACH	703.2.11	
PAD MOUNTED CABINET (332L)	1	EACH	703.2.11	
PAD MOUNTED CABINET (342) (DOUBLE)		EACH	703.2.11	
BATTERY BACKUP (BBS/UPS)	1	EACH	703.2.14	
VIDEO DETECTION DEVICE & HARDWARE		EACH	703.3.1	
RADAR DETECTION DEVICE & HARDWARE	4	EACH	703.3.2	
TRAFFIC SIGNAL HEAD	CHART A	EACH	703.4.1	
SIGNAL HEAD MOUNTING BRACKET	CHART A	EACH	703.4.2	
RETROREFLECTIVE BACKPLATE	CHART A	EACH	703.4.3	
VEHICLE TRAFFIC SIGNAL LED MODULES	11	EACH	703.4.4	
PEDESTRIAN TRAFFIC SIGNAL LED MODULES	8	EACH	703.4.5	
APS PUSHBUTTON SYSTEM & SIGN (R10-3E, 9"x15")		EACH	703.4.6	
TRAFFIC SIGNAL POLE	CHART B	EACH	703.5.1	
TRAFFIC SIGNAL PEDESTAL (ALUMINUM)		EACH	703.5.2	
APS PUSHBUTTON STATION (ALUMINUM)	6	EACH	703.5.3	
SERVICE BOX	4	EACH	703.6	
LUMINAIRE ARM		EACH	703.7.1	POWER COMPANY PROVIDED & INSTALLED
LED LUMINAIRE		EACH	703.7.2	POWER COMPANY PROVIDED & INSTALLED
PHOTOCELL		EACH	703.7.3	POWER COMPANY PROVIDED & INSTALLED
UNFUSED STREET LIGHT CONNECTOR KIT		EACH	703.7.4	
FUSED STREET LIGHT CONNECTOR KIT		EACH	703.7.5	
OVERHEAD STREET NAME SIGN	CHART C	EACH	703.8.1	
R10-10 SIGN (30" X 36")		EACH	703.8.2	
R10-FYA SIGN (30" X 36")	4	EACH	703.8.2	
BLANK OUT SIGN (36" X 36")		EACH	703.8.3	
ENTRANCE HEAD	x	EACH	703.9.2	
SERVICE ENCLOSURE, AMP.	x	EACH	703.9.3	
CIRCUIT BREAKER, TRAFFIC SIGNAL, AMP.	x	EACH	703.9.4	
CIRCUIT BREAKER, LUMINAIRE, AMP.	x	EACH	703.9.4	
SURGE ARRESTER CA 302R	x	EACH	703.9.5	
POWER SERVICE CONTROLLER CABINET	x	EACH	703.9.6	
GROUND ROD & CLAMP	4	EACH	703.10	
SERVICE WIRE NO. __ AWG 1/C		LIN FT	703.11.1	
LIGHTING DISTRIBUTION WIRE NO. __ AWG 1/C		LIN FT	703.11.2	
POLE & BRACKET WIRE NO. 10 AWG 1/C		LIN FT	703.11.3	
GROUND WIRE NO. 6 AWG 1/C BARE SOLID	510	LIN FT	703.11.4	
TRACER WIRE NO. 12 AWG (BLUE)		LIN FT	703.11.5	
TRACER WIRE CONNECTOR		EACH	703.11.6	
MULTI-CONDUCTOR CABLE NO. 14 AWG 7/C	3500	LIN FT	703.11.7	
MULTI-CONDUCTOR CABLE NO. 14 AWG /C		LIN FT	703.11.7	
DETECTION CABLE	890	LIN FT	703.11.9	
PRE-FORMED LOOP		EACH	703.11.10	
ETHERNET CABLE (CAT6)		LIN FT	703.11.11	
CONDUIT, 2" & FITTINGS		LIN FT	703.12	
CONDUIT, 3" & FITTINGS	506	LIN FT	703.12	
CONDUIT, __" & FITTINGS		LIN FT	703.12	

NOTES:

1. QUANTITIES SHOWN ARE FOR WEST ST AND MACARTHUR RD SIGNAL.
2. REFER TO CITY OF WICHITA PART 700 TRAFFIC SIGNALIZATION SPECIFICATIONS.
3. ALL TRAFFIC SIGNAL POLES SHALL BE PAINTED BLACK PER LATEST EDITION OF PART 700 SPECIFICATIONS. SIGNAL CABINET SHALL BE NATURAL ALUMINUM.
4. CONFLICT MONITOR SHALL BE A 2010 ECL-IP UNIT WITH ETHERNET PORT.
5. A SEPARATE DETECTION CARD SHALL BE USED FOR EACH INTERSECTION LEG. THE DETECTION SYSTEM INCLUDES DETECTOR UNIT, PROCESSOR, CARD, AND INCIDENTAL ITEMS NECESSARY FOR THE SUCCESSFUL OPERATION OF THE DETECTION SYSTEM.

BID ITEM

Item	Quantity	Unit
Traffic Signal	LSUM	LSUM
Temporary Traffic Signal	LSUM	LSUM
Traffic Signal Controller	1	EACH
Detection System	LSUM	LSUM

1. TRAFFIC SIGNAL CONTROLLER ITEM INCLUDES THE UNIT COST FOR PERMANENT CONTROLLER ONLY. COST FOR INSTALLATION, PROGRAMMING, ETC. SHALL BE INCLUDED IN THE "TRAFFIC SIGNAL" QUANTITY.
2. CONTROLLERS FOR TEMPORARY SIGNAL(S) IS SUBSIDIARY TO THE BID ITEM "TEMPORARY TRAFFIC SIGNAL".
3. FOR MULTIPLE PROJECT INTERSECTIONS, QUANTITIES SHOULD BID SEPARATELY FOR EACH SIGNALIZED INTERSECTION (EXCLUDING CONTROLLERS).
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.

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

WEST STREET & MACARTHUR
TRAFFIC SIGNAL
QUANTITY SHEET

TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

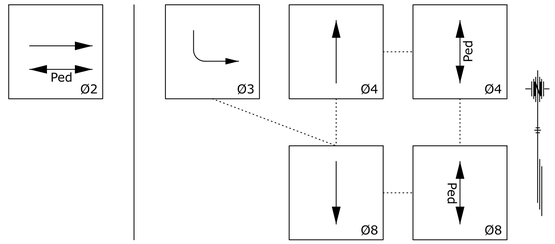
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
65 of 128
TR-102

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

NOTE TO DESIGNER: Designer to update signal faces and applicable phases. Associated phase to cardinal direction shall not change. Northing and easting should be to the 0.XX. Other than signal phasing, changes to this sheet do not need to be listed as "Modifications" on the general notes.

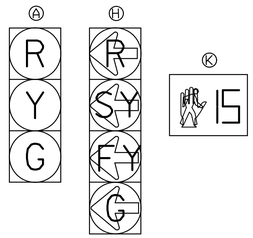
PHASE DIAGRAM



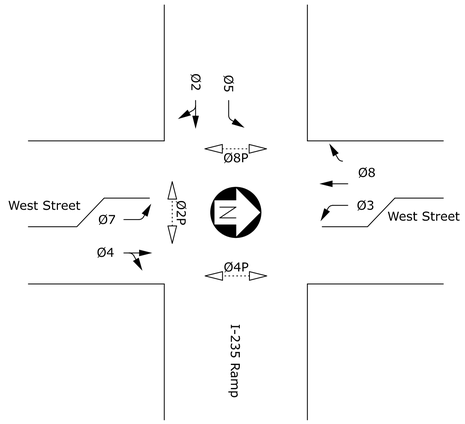
NOTE: DOTTED LINES CONNECTING PHASES INDICATE PHASES THAT CAN OCCUR CONCURRENTLY. PEDESTRIAN PHASE TO ONLY OCCUR AFTER PUSH BUTTON ACTIVATION.

SIGNAL FACES

NOTE: ALL LENSES SHALL BE 12" L.E.D. PEDESTRIAN LENSES SHALL BE 16" AND BE COUNTDOWN SIGNALS.



SIGNAL PHASES



STRUCTURE LOCATIONS

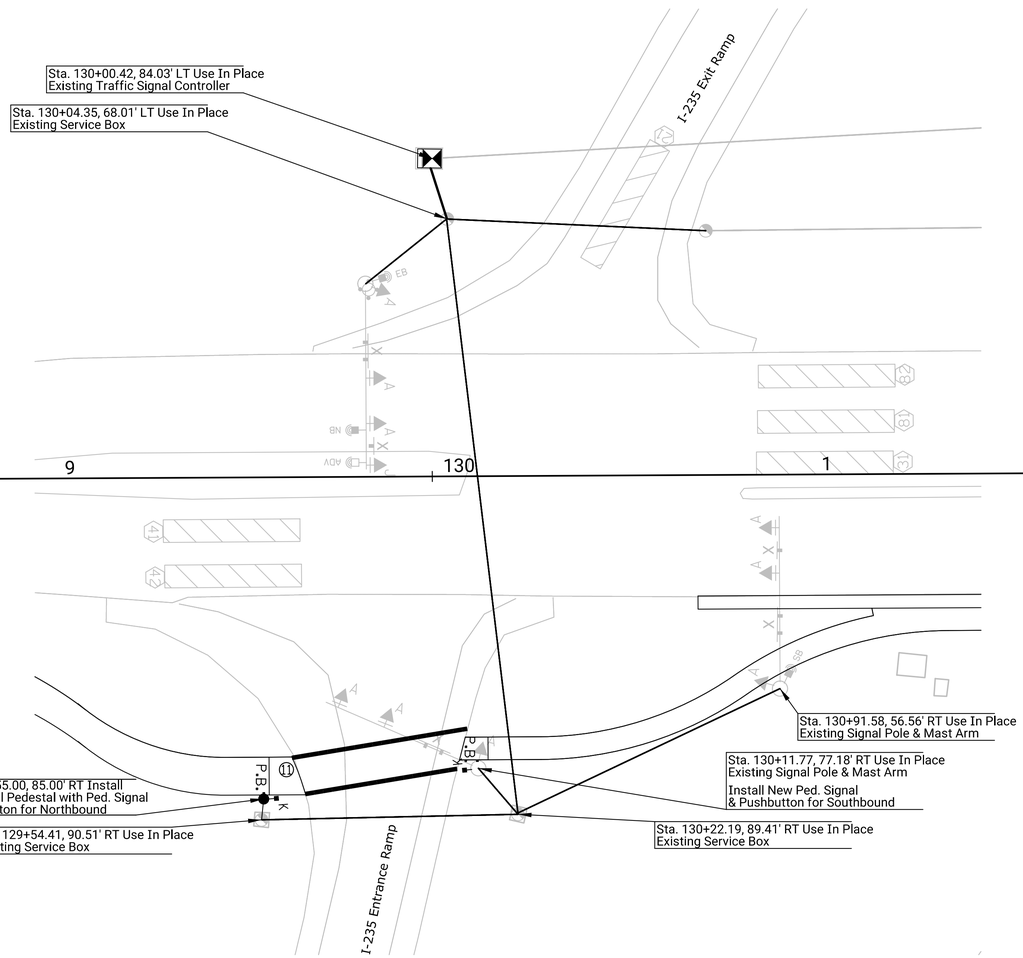
POLE NO.	*TYPE	STATION	OFFSET	NORTHING	EASTING	**ELEV.
11	PED	129+55.00	47.17' LT	1665191.0671	1634104.7637	1287.9732

SERVICE BOX LOCATIONS

BOX NO.	STATION	OFFSET	NORTHING	EASTING	**ELEV.

*STRUCTURE TYPES: POLE - TRAFFIC SIGNAL POLE; PED - TRAFFIC SIGNAL PEDESTAL; PB STA - APS PUSHBUTTON STATION

**APPROXIMATE TOP OF FOUNDATION. SEE STANDARDS AND SPECS FOR ADDITIONAL INFORMATION. FOUNDATIONS SHALL NOT CREATE A "LOW AREA".



SCALE

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

GENERAL NOTES:

1. CONDUIT RUNS ARE APPROXIMATE & MAY BE FIELD ADJUSTED TO CLEAR OBSTRUCTIONS & FACILITATE WIRING, AS APPROVED BY THE ENGINEER. ALL CONDUIT RUNS SHALL BE STRAIGHT BETWEEN BOXES AND/OR FOUNDATIONS.
2. EXISTING FEATURES & UTILITIES ARE SHOWN FROM AVAILABLE INFORMATION & SHOULD BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY UTILITIES & THEIR EXACT LOCATION PRIOR TO CONSTRUCTION.
3. SEE "TRAFFIC SIGNAL INSTALLATION DETAIL SHEET" (TR-105) FOR SIGN SPACING AND ADDITIONAL DETAILS.

NO.	DATE	REVISIONS	BY	APP'D
3				
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CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

WEST STREET & I-235 EB RAMPS TRAFFIC SIGNAL PLAN SHEET

TRAFFIC ENGINEER: MIKE ARMOUR, P.E. APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

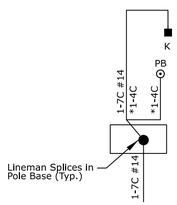
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET 66 of 128

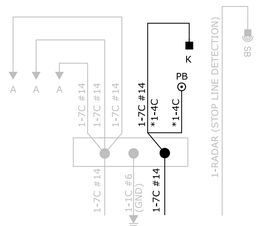
TR-103

NOTE TO DESIGNER: Calculate signal clearance times per recommendations from NCHRP Report 731. Yellow and All-Red times shall be rounded up to the nearest 0.5 second. Designer shall provide pole wiring diagrams. Pole wiring uses a separate 7C for each 3,4,or 5 section head per specification 702.21.6. Cable call-out shall be in consistant order on diagram.

POLE WIRING DIAGRAM



POLE 11



EXISTING POLE

LEGEND

COND.	CONDUIT
SIG.	SIGNAL CABLE
PED.	PEDESTRIAN SIGNAL CABLE
DET.	DETECTOR LEAD-IN CABLE
ST. LT.	STREET LIGHTING CABLE
GRND.	WIRE FOR POLE GROUND
COAX.	COAXIAL CABLE
FUT.	FUTURE CABLE
B.O.	BLANK OUT SIGN CABLE
PREEMPT	PREEMPTION CABLE
RADAR	RADAR DETECTION CABLE

*4-C FROM PEDESTRIAN SIGNAL HEAD (K) TO ADA PUSHBUTTON PROVIDED BY SUPPLIER

DETECTOR SUMMARY

DETECTOR NUMBER	DETECTION ZONE SIZE	STOP BAR DETECTION	ADVANCED DETECTION	* TIMINGS (SEC) TOTAL STRETCH + EXTENSION	* TIMINGS (SEC) DELAY	MODE PRESENCE	MODE PULSE	PHASE CALLED	DISTANCE FROM STOP BAR
(2)	6' x 55'	x				x		2	5'
(3)	6' x 55'	x				x		3	5'
(4)	6' x 55'	x				x		4	5'
(4)	6' x 55'	x				x		4	5'
(8)	6' x 55'	x				x		8	5'
(8)	6' x 55'	x				x		8	5'

* TIMINGS SHOWN IN DETECTOR SUMMARY CHART INCLUDE THE TOTAL STRETCH + EXTENSION. DETECTOR TIMINGS SHALL BE PROGRAMMED INTO THE TRAFFIC SIGNAL CONTROLLER. SEE TRAFFIC SIGNAL GENERAL NOTES FOR ADVANCED DETECTION DISTANCE AND TIMING.

SUGGESTED TIMINGS (SEC.)

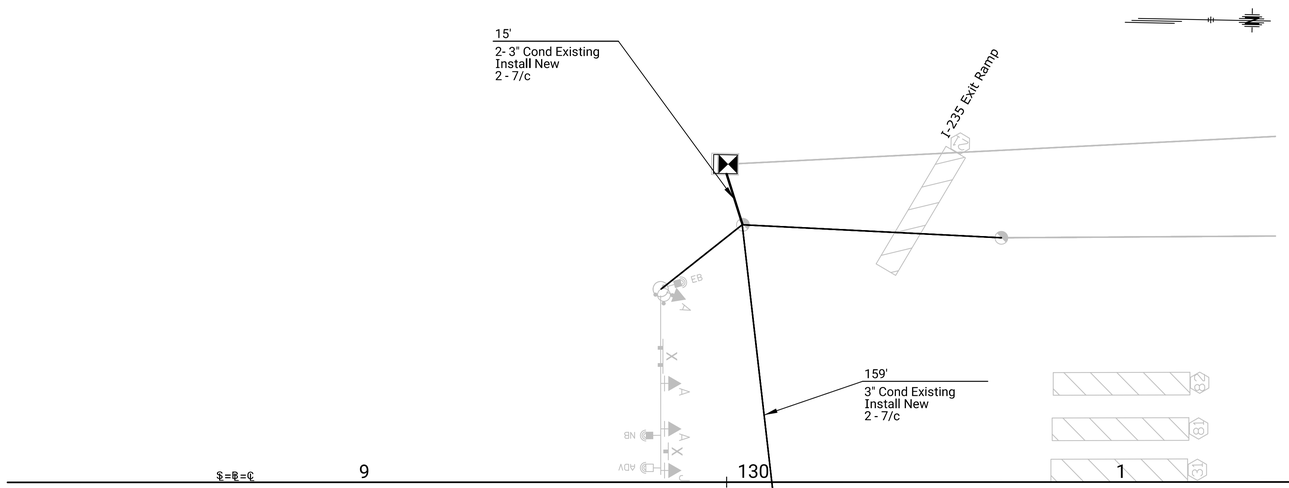
PHASE	MINIMUM INITIAL	*MAXIMUM GREEN SPLIT	**PEDESTRIAN WALK	**PEDESTRIAN FDW	**PEDESTRIAN SDW	***CLEARANCE YELLOW	***CLEARANCE ALL RED
1	x	x	x	x	x	x	x
2							
3							
4							
5							
6							
7							
8							

CLEARANCE DESIGN SPEEDS:
___ ROAD = XX MPH
___ STREET = XX MPH

*MAXIMUM GREEN SPLIT IS FOR NON-PEDESTRIAN CALLS ONLY. TIMING INCORPORATES YELLOW & ALL RED CLEARANCE TIMES.

**PEDESTRIAN PHASING SHALL EXTEND PHASE WHEN CALLED IF APPROPRIATE. PEDESTRIAN CLEARANCE TIMES SHALL FOLLOW MUTCD GUIDELINES FOR PHASES.

***SIGNAL CLEARANCE TIMINGS ARE CALCULATED BASED ON RECOMMENDATIONS FROM NCHRP REPORT 731.



NOTES:

1. ALL MULTI-CONDUCTOR WIRE SHALL BE AWG #14 SOLID UNLESS SPECIFIED OTHERWISE. LABEL EACH WIRE AS SHOWN IN PART 700 SPECIFICATIONS.
2. ALL GROUND WIRE SHALL BE #6 AWG COPPER WIRE IN ACCORDANCE WITH ATM B-3. SOLID BARE COPPER WIRE SHALL BE USED FOR ALL EXTERIOR INSTALLATIONS INCLUDING SERVICE AND GROUND ROD BONDING. OTHERWISE, GREEN INSULATED STRANDED WIRE TYPE "THHN/THWN" SHALL BE USED.
3. GROUND WIRE SHALL BE BONDED TO EACH GROUND ROD AT EVERY POLE, PEDESTAL, SERVICE BOX, AND CONTROLLER TO FORM ONE CONTINUOUS GROUND CIRCUIT.
4. DETECTOR CABLES SHOULD RUN CONTINUOUS. SPLICES, IF REQUIRED, SHALL ONLY OCCUR IN THE POLE BASE AND MUST BE APPROVED BY THE CITY OF WICHITA TRAFFIC ENGINEER.
5. IN NO CASE SHALL MORE THAN 60% OF ANY CONDUIT BE FILLED BY AREA.
6. STREET LIGHTING CABLE SHALL BE SPLICED IN SERVICE BOXES. THE SPLICE SHALL BE MADE WATERPROOF.
7. SPLICES AT POLE BASE SHALL BE LINEMAN SPLICES PER SECTION 702.21.11. TERMINAL BLOCKS WILL NOT BE USED.
8. ALL CONDUIT SHALL BE HOT DIPPED GALVANIZED RIGID STEEL CONDUIT (GRC) AS SHOWN IN THE PROJECT SPECIFICATIONS.
9. DURING EMERGENCY FLASH OPERATIONS, ALL SIGNAL PHASES SHALL BE RED INDICATIONS. PEDESTRIAN PHASE SHALL BE DARK.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

LEGEND — SIGNAL HEAD (X) | VIDEO DETECTOR | RADAR DETECTOR | PTZ CCTV | LUMINAIRE | PED. HEAD (K) | PUSHBUTTON | GROUND | ST.LT. CONNECTOR KIT | SPLICE CONNECTION

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

WEST STREET & I-235 EB RAMPS TRAFFIC SIGNAL WIRING & TIMING DETAILS

TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

NOTE TO DESIGNER: Mast arm lengths shall be in 6' increments (18' to 60'). If a longer mast arm is required, signal pole foundation design calculations must be submitted to the City of Wichita for review. The pad mounted 332L cabinet is typically used unless approved otherwise by City of Wichita Traffic Engineer. 5-Sections heads for left turn phase must be approved by the City of Wichita Traffic Engineer.

K

15

CHART A SIGNAL SUMMARY

Signal Face Arrangement	No. Sections (Per Face)	Signal Mounting Type	Quantity
K	2	Side-of-Pole	2

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. ALL LENSES SHALL BE 12" DIA. UNLESS OTHERWISE NOTED. PESDESTRIAN DISPLAY (K) SHALL BE RECTANGULAR WITH A WIDTH OF 18" AND HEIGHT OF 16".
5. BLANK OUT SIGN SIZE SHALL MEET MUTCD REQUIREMENTS FOR APPLICABLE STATIC VERSION OF THE SIGN.

CHART B TRAFFIC SIGNAL POLES

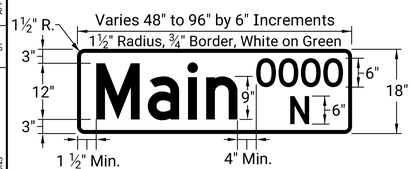
Pole Height	Signal Arm Length	Signal Arm Mounting Height	No. of Signals on Arm	Signal Spacing	Luminaire Arm Length	Luminaire Mounting Height	Quantity

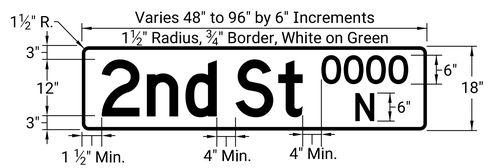
CHART C OVERHEAD STREET NAME SIGNS

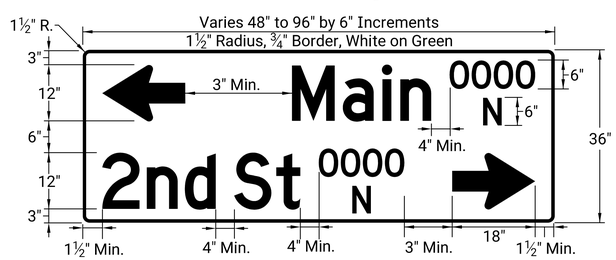
Sign	Legend	Length	Quantity

R10-3e

R10-FYA







USE FONT SERIES D. SHEETING SHALL BE ASTM TYPE XI SHEETING. SEE SPECIFICATION 703.8

BILL OF MATERIALS
-Quantities for Information Only-

Item	Quantity	Unit	Spec. No.	Note
CONTROLLER UNIT		EACH	703.2.1	
CONFLICT MONITOR		EACH	703.2.2	
LOAD SWITCH		EACH	703.2.3	
FLASHER		EACH	703.2.4	
FLASH TRANSFER RELAY		EACH	703.2.5	
SURGE PROTECTOR		EACH	703.2.6	
DC ISOLATOR		EACH	703.2.7	
AC ISOLATOR		EACH	703.2.8	
GPS CLOCK		EACH	703.2.9	
POWER STRIP		EACH	703.2.11	
LOOP DETECTOR (2 or 4 CHANNEL)		EACH	703.2.10	
POLE MOUNTED CABINET (336L)		EACH	703.2.11	
PAD MOUNTED CABINET (332L)		EACH	703.2.11	
PAD MOUNTED CABINET (342) (DOUBLE)		EACH	703.2.11	
BATTERY BACKUP (BBS/UPS)		EACH	703.2.14	
VIDEO DETECTION DEVICE & HARDWARE		EACH	703.3.1	
RADAR DETECTION DEVICE & HARDWARE		EACH	703.3.2	
TRAFFIC SIGNAL HEAD	CHART A	EACH	703.4.1	
SIGNAL HEAD MOUNTING BRACKET	CHART A	EACH	703.4.2	
RETROREFLECTIVE BACKPLATE	CHART A	EACH	703.4.3	
VEHICLE TRAFFIC SIGNAL LED MODULES		EACH	703.4.4	
PEDESTRIAN TRAFFIC SIGNAL LED MODULES	2	EACH	703.4.5	
APS PUSHBUTTON SYSTEM & SIGN (R10-3E, 9"x15")		EACH	703.4.6	
TRAFFIC SIGNAL POLE	CHART B	EACH	703.5.1	
TRAFFIC SIGNAL PEDESTAL (ALUMINUM)		EACH	703.5.2	
APS PUSHBUTTON STATION (ALUMINUM)	1	EACH	703.5.3	
SERVICE BOX		EACH	703.6	
LUMINAIRE ARM		EACH	703.7.1	POWER COMPANY PROVIDED & INSTALLED
LED LUMINAIRE		EACH	703.7.2	POWER COMPANY PROVIDED & INSTALLED
PHOTOCELL		EACH	703.7.3	POWER COMPANY PROVIDED & INSTALLED
UNFUSED STREET LIGHT CONNECTOR KIT		EACH	703.7.4	
FUSED STREET LIGHT CONNECTOR KIT		EACH	703.7.5	
OVERHEAD STREET NAME SIGN	CHART C	EACH	703.8.1	
R10-10 SIGN (30" X 36")		EACH	703.8.2	
R10-FYA SIGN (30" X 36")		EACH	703.8.2	
BLANK OUT SIGN (36" X 36")		EACH	703.8.3	
ENTRANCE HEAD		EACH	703.9.2	
SERVICE ENCLOSURE, AMP.		EACH	703.9.3	
CIRCUIT BREAKER, TRAFFIC SIGNAL, AMP.		EACH	703.9.4	
CIRCUIT BREAKER, LUMINAIRE, AMP.		EACH	703.9.4	
SURGE ARRESTER CA 302R		EACH	703.9.5	
POWER SERVICE CONTROLLER CABINET		EACH	703.9.6	
GROUND ROD & CLAMP		EACH	703.10	
SERVICE WIRE NO. __ AWG 1/C		LIN FT	703.11.1	
LIGHTING DISTRIBUTION WIRE NO. __ AWG 1/C		LIN FT	703.11.2	
POLE & BRACKET WIRE NO. 10 AWG 1/C		LIN FT	703.11.3	
GROUND WIRE NO. 6 AWG 1/C BARE SOLID	6	LIN FT	703.11.4	
TRACER WIRE NO. 12 AWG (BLUE)		LIN FT	703.11.5	
TRACER WIRE CONNECTOR		EACH	703.11.6	
MULTI-CONDUCTOR CABLE NO. 14 AWG 7/C	438	LIN FT	703.11.7	
MULTI-CONDUCTOR CABLE NO. 14 AWG /C		LIN FT	703.11.7	
DETECTION CABLE		LIN FT	703.11.9	
PRE-FORMED LOOP		EACH	703.11.10	
ETHERNET CABLE (CAT6)		LIN FT	703.11.11	
CONDUIT, 2" & FITTINGS		LIN FT	703.12	
CONDUIT, 3" & FITTINGS	6	LIN FT	703.12	
CONDUIT, __" & FITTINGS		LIN FT	703.12	

NOTES:

1. QUANTITIES SHOWN ARE FOR WEST ST AND I-235 EB RAMPS SIGNAL.
2. REFER TO CITY OF WICHITA PART 700 TRAFFIC SIGNALIZATION SPECIFICATIONS.
3. ALL TRAFFIC SIGNAL POLES SHALL BE PAINTED BLACK PER LATEST EDITION OF PART 700 SPECIFICATIONS. SIGNAL CABINET SHALL BE NATURAL ALUMINUM.
4. CONFLICT MONITOR SHALL BE A 2010 ECL-IP UNIT WITH ETHERNET PORT.
5. A SEPARATE DETECTION CARD SHALL BE USED FOR EACH INTERSECTION LEG. THE DETECTION SYSTEM INCLUDES DETECTOR UNIT, PROCESSOR, CARD, AND INCIDENTAL ITEMS NECESSARY FOR THE SUCCESSFUL OPERATION OF THE DETECTION SYSTEM.

BID ITEM

Item	Quantity	Unit
Traffic Signal	LSUM	LSUM
Temporary Traffic Signal	LSUM	LSUM
Traffic Signal Controller		EACH
Detection System	LSUM	LSUM

1. TRAFFIC SIGNAL CONTROLLER ITEM INCLUDES THE UNIT COST FOR PERMANENT CONTROLLER ONLY. COST FOR INSTALLATION, PROGRAMMING, ETC. SHALL BE INCLUDED IN THE "TRAFFIC SIGNAL" QUANTITY.
2. CONTROLLERS FOR TEMPORARY SIGNAL(S) IS SUBSIDIARY TO THE BID ITEM "TEMPORARY TRAFFIC SIGNAL".
3. FOR MULTIPLE PROJECT INTERSECTIONS, QUANTITIES SHOULD BID SEPARATELY FOR EACH SIGNALIZED INTERSECTION (EXCLUDING CONTROLLERS).
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.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

WEST STREET & I-235 EB RAMPS
TRAFFIC SIGNAL
QUANTITY SHEET

TRAFFIC ENGINEER — APP'D 01/27/22
MIKE ARMOUR, P.E.

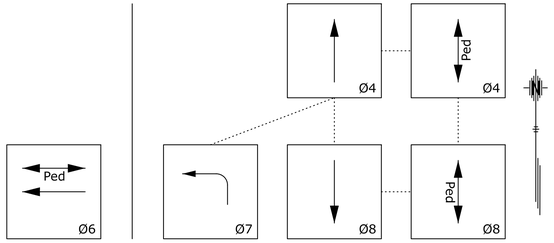
PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
68 of 128
TR-102

NOTE TO DESIGNER: Designer to update signal faces and applicable phases. Associated phase to cardinal direction shall not change. Northing and easting should be to the 0.XX. Other than signal phasing, changes to this sheet do not need to be listed as "Modifications" on the general notes.

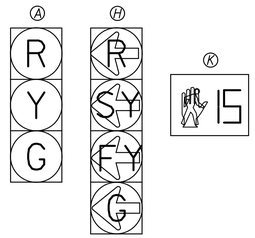
PHASE DIAGRAM



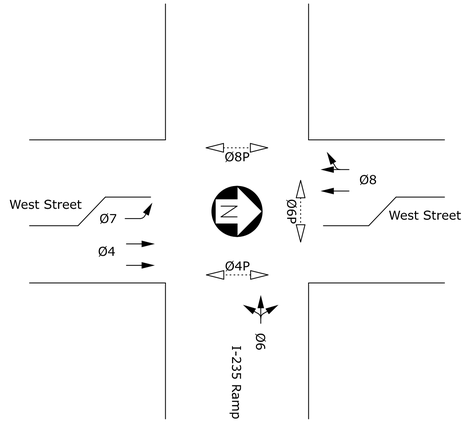
NOTE: DOTTED LINES CONNECTING PHASES INDICATE PHASES THAT CAN OCCUR CONCURRENTLY. PEDESTRIAN PHASE TO ONLY OCCUR AFTER PUSH BUTTON ACTIVATION.

SIGNAL FACES

NOTE: ALL LENSES SHALL BE 12" L.E.D. PEDESTRIAN LENSES SHALL BE 16" AND BE COUNTDOWN SIGNALS.



SIGNAL PHASES



STRUCTURE LOCATIONS

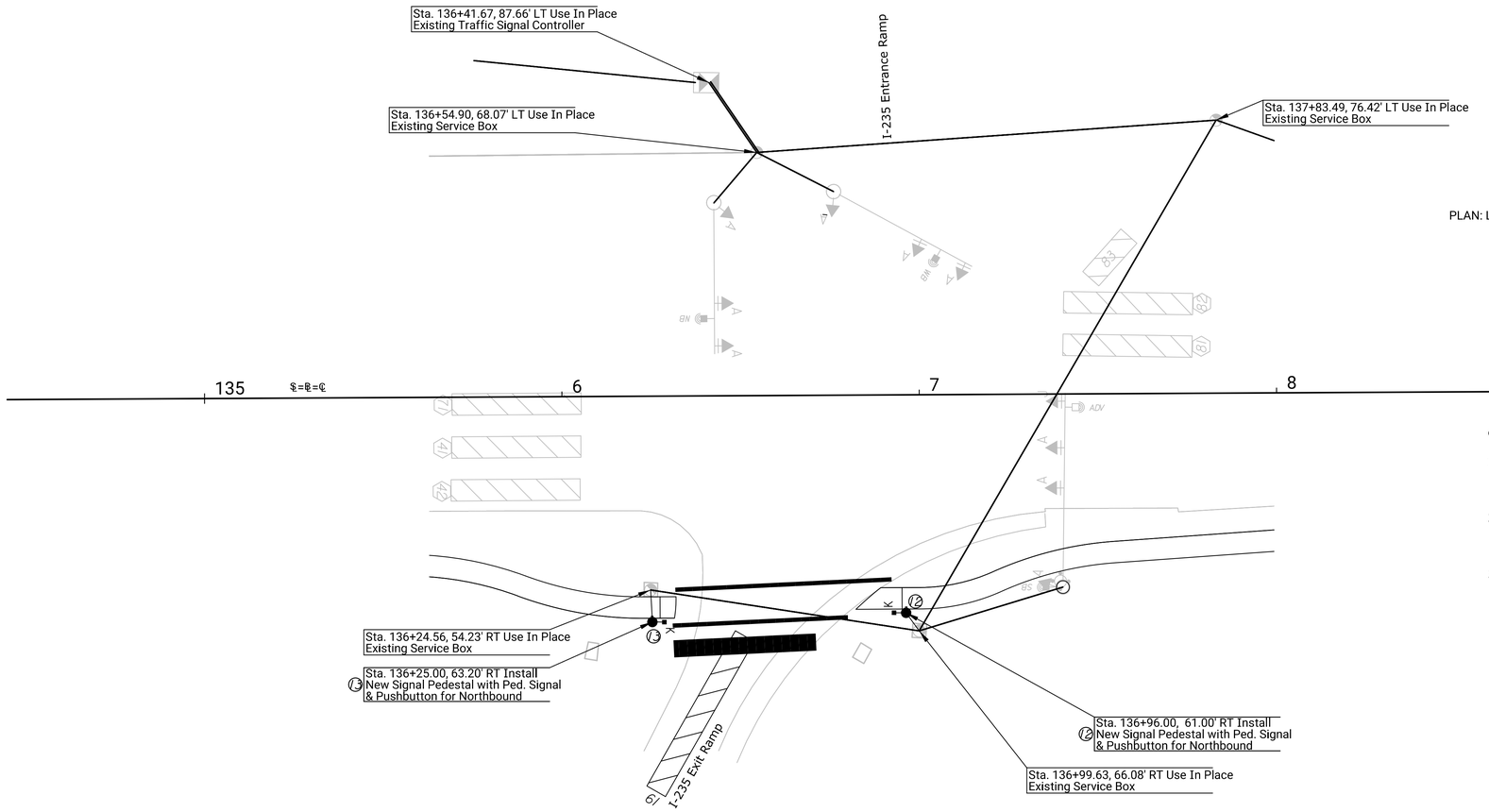
POLE NO.	*TYPE	STATION	OFFSET	NORTHING	EASTING	**ELEV.
12	PED	136+96.00	61.00' RT	1665931.4650	1634066.4492	1287.9732
13	PED	136+25.00	63.20' RT	1665860.5208	1634070.0208	1287.9732

SERVICE BOX LOCATIONS

BOX NO.	STATION	OFFSET	NORTHING	EASTING	**ELEV.

*STRUCTURE TYPES: POLE - TRAFFIC SIGNAL POLE; PED - TRAFFIC SIGNAL PEDESTAL; PB STA - APS PUSHBUTTON STATION

**APPROXIMATE TOP OF FOUNDATION. SEE STANDARDS AND SPECS FOR ADDITIONAL INFORMATION. FOUNDATIONS SHALL NOT CREATE A "LOW AREA".



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

GENERAL NOTES:

1. CONDUIT RUNS ARE APPROXIMATE & MAY BE FIELD ADJUSTED TO CLEAR OBSTRUCTIONS & FACILITATE WIRING, AS APPROVED BY THE ENGINEER. ALL CONDUIT RUNS SHALL BE STRAIGHT BETWEEN BOXES AND/OR FOUNDATIONS.
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3. SEE "TRAFFIC SIGNAL INSTALLATION DETAIL SHEET" (TR-105) FOR SIGN SPACING AND ADDITIONAL DETAILS.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

WEST STREET & I-235 WB RAMPS
TRAFFIC SIGNAL
PLAN SHEET

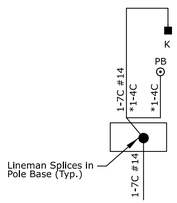
TRAFFIC ENGINEER APP'D 01/27/22
MIKE ARMOUR, P.E.

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

NOTE TO DESIGNER: Calculate signal clearance times per recommendations from NCHRP Report 731. Yellow and All-Red times shall be rounded up to the nearest 0.5 second. Designer shall provide pole wiring diagrams. Pole wiring uses a separate 7C for each 3,4,or 5 section head per specification 702.21.6. Cable call-out shall be in consistant order on diagram.

POLE WIRING DIAGRAM



POLE 12, 13
FUTURE PED POLES

LEGEND

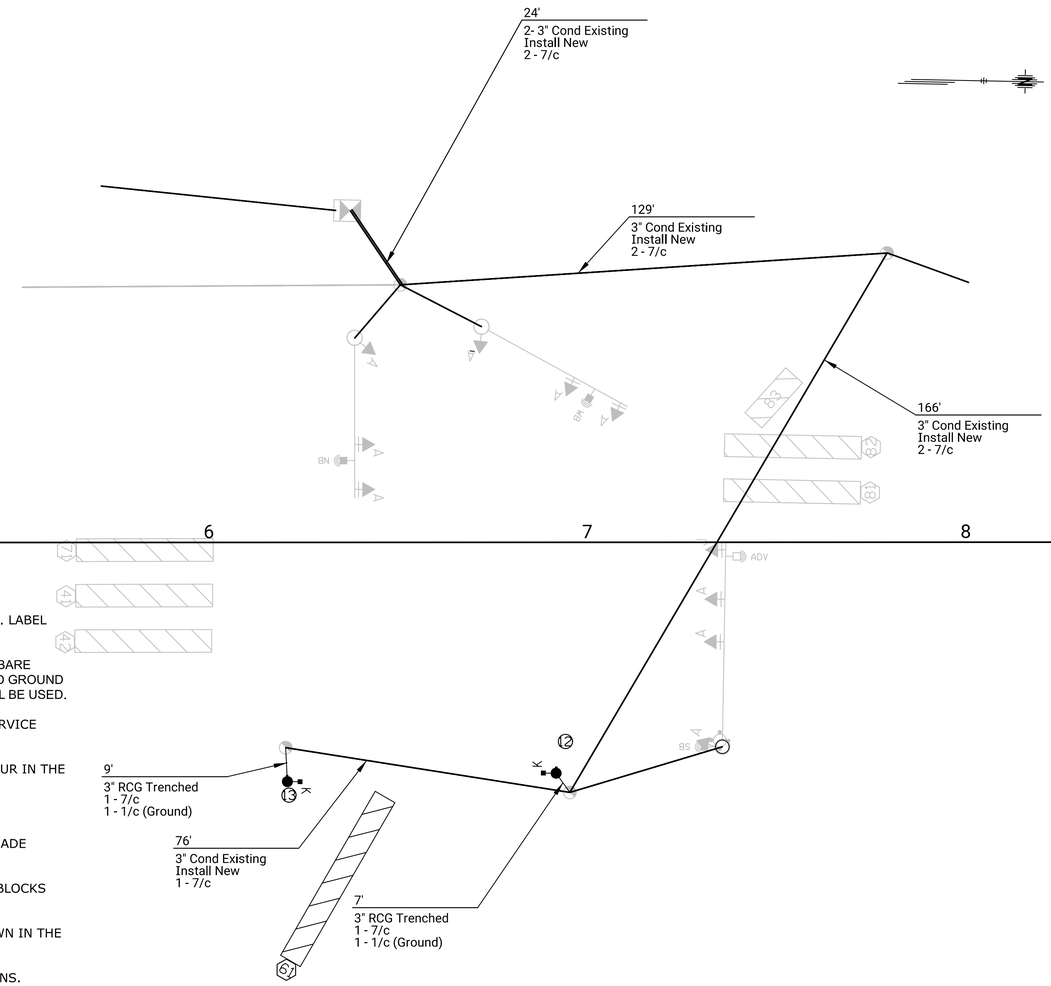
COND.	CONDUIT
SIG.	SIGNAL CABLE
PED.	PEDESTRIAN SIGNAL CABLE
DET.	DETECTOR LEAD-IN CABLE
ST. LT.	STREET LIGHTING CABLE
GRND.	WIRE FOR POLE GROUND
COAX.	COAXIAL CABLE
FUT.	FUTURE CABLE
B.O.	BLANK OUT SIGN CABLE
PREEMPT	PREEMPTION CABLE
RADAR	RADAR DETECTION CABLE

*4-C FROM PEDESTRIAN SIGNAL HEAD (K) TO ADA PUSHBUTTON PROVIDED BY SUPPLIER

DETECTOR SUMMARY

DETECTOR NUMBER	DETECTION ZONE SIZE	STOP BAR DETECTION	ADVANCED DETECTION	* TIMINGS (SEC) TOTAL STRETCH + EXTENSION	* TIMINGS (SEC) DELAY	MODE PRESENCE	MODE PULSE	PHASE CALLED	DISTANCE FROM STOP BAR
⟨11⟩	6' x 55'	x				x		1	5'
⟨21⟩	6' x 55'	x				x		2	5'
⟨31⟩	6' x 55'	x				x		3	5'
⟨41⟩	6' x 55'	x				x		4	5'
⟨51⟩	6' x 55'	x				x		5	5'
⟨61⟩	6' x 55'	x				x		6	5'
⟨71⟩	6' x 55'	x				x		7	5'
⟨81⟩	6' x 55'	x				x		8	5'
⟨82⟩	6' x 55'	x				x		8	5'

* TIMINGS SHOWN IN DETECTOR SUMMARY CHART INCLUDE THE TOTAL STRETCH + EXTENSION. DETECTOR TIMINGS SHALL BE PROGRAMMED INTO THE TRAFFIC SIGNAL CONTROLLER. SEE TRAFFIC SIGNAL GENERAL NOTES FOR ADVANCED DETECTION DISTANCE AND TIMING.



SUGGESTED TIMINGS (SEC.)

PHASE	MINIMUM INITIAL	*MAXIMUM GREEN SPLIT	**PEDESTRIAN WALK	**PEDESTRIAN FDW	**PEDESTRIAN SDW	***CLEARANCE YELLOW	***CLEARANCE ALL RED
1	x	x	x	x	x	x	x
2							
3							
4							
5							
6							
7							
8							

CLEARANCE DESIGN SPEEDS:
___ ROAD = XX MPH
___ STREET = XX MPH

*MAXIMUM GREEN SPLIT IS FOR NON-PEDESTRIAN CALLS ONLY. TIMING INCORPORATES YELLOW & ALL RED CLEARANCE TIMES.

**PEDESTRIAN PHASING SHALL EXTEND PHASE WHEN CALLED IF APPROPRIATE. PEDESTRIAN CLEARANCE TIMES SHALL FOLLOW MUTCD GUIDELINES FOR PHASES.

***SIGNAL CLEARANCE TIMINGS ARE CALCULATED BASED ON RECOMMENDATIONS FROM NCHRP REPORT 731.

NOTES:

1. ALL MULTI-CONDUCTOR WIRE SHALL BE AWG #14 SOLID UNLESS SPECIFIED OTHERWISE. LABEL EACH WIRE AS SHOWN IN PART 700 SPECIFICATIONS.
2. ALL GROUND WIRE SHALL BE #6 AWG COPPER WIRE IN ACCORDANCE WITH ATM B-3. SOLID BARE COPPER WIRE SHALL BE USED FOR ALL EXTERIOR INSTALLATIONS INCLUDING SERVICE AND GROUND ROD BONDING. OTHERWISE, GREEN INSULATED STRANDED WIRE TYPE "THHN/THWN" SHALL BE USED.
3. GROUND WIRE SHALL BE BONDED TO EACH GROUND ROD AT EVERY POLE, PEDESTAL, SERVICE BOX, AND CONTROLLER TO FORM ONE CONTINUOUS GROUND CIRCUIT.
4. DETECTOR CABLES SHOULD RUN CONTINUOUS. SPLICES, IF REQUIRED, SHALL ONLY OCCUR IN THE POLE BASE AND MUST BE APPROVED BY THE CITY OF WICHITA TRAFFIC ENGINEER.
5. IN NO CASE SHALL MORE THAN 60% OF ANY CONDUIT BE FILLED BY AREA.
6. STREET LIGHTING CABLE SHALL BE SPLICED IN SERVICE BOXES. THE SPLICE SHALL BE MADE WATERPROOF.
7. SPLICES AT POLE BASE SHALL BE LINEMAN SPLICES PER SECTION 702.21.11. TERMINAL BLOCKS WILL NOT BE USED.
8. ALL CONDUIT SHALL BE HOT DIPPED GALVANIZED RIGID STEEL CONDUIT (GRC) AS SHOWN IN THE PROJECT SPECIFICATIONS.
9. DURING EMERGENCY FLASH OPERATIONS, ALL SIGNAL PHASES SHALL BE RED INDICATIONS. PEDESTRIAN PHASE SHALL BE DARK.

NO.	DATE	REVISIONS	BY	APP'D
3				
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LEGEND: SIGNAL HEAD (X) | VIDEO DETECTOR | RADAR DETECTOR | PTZ CCTV | LUMINAIRE | PED. HEAD (K) | PUSHBUTTON | GROUND | ST.LT. CONNECTOR KIT | SPLICE CONNECTION

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

WEST STREET & I-235 WB RAMPS TRAFFIC SIGNAL WIRING & TIMING DETAILS

TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

NOTE TO DESIGNER: Mast arm lengths shall be in 6' increments (18' to 60'). If a longer mast arm is required, signal pole foundation design calculations must be submitted to the City of Wichita for review. The pad mounted 332L cabinet is typically used unless approved otherwise by City of Wichita Traffic Engineer. 5-Sections heads for left turn phase must be approved by the City of Wichita Traffic Engineer.

K

15

CHART A SIGNAL SUMMARY

Signal Face Arrangement	No. Sections (Per Face)	Signal Mounting Type	Quantity
K	2	Side-of-Pole	2

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. ALL LENSES SHALL BE 12" DIA. UNLESS OTHERWISE NOTED. PESDESTRIAN DISPLAY (K) SHALL BE RECTANGULAR WITH A WIDTH OF 18" AND HEIGHT OF 16".
5. BLANK OUT SIGN SIZE SHALL MEET MUTCD REQUIREMENTS FOR APPLICABLE STATIC VERSION OF THE SIGN.

CHART B TRAFFIC SIGNAL POLES

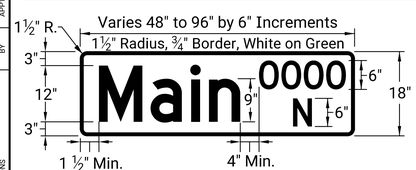
Pole Height	Signal Arm Length	Signal Arm Mounting Height	No. of Signals on Arm	Signal Spacing	Luminaire Arm Length	Luminaire Mounting Height	Quantity

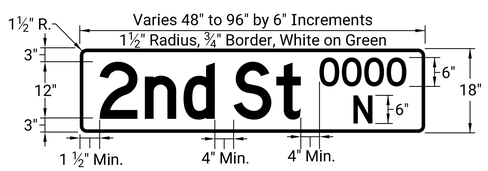
CHART C OVERHEAD STREET NAME SIGNS

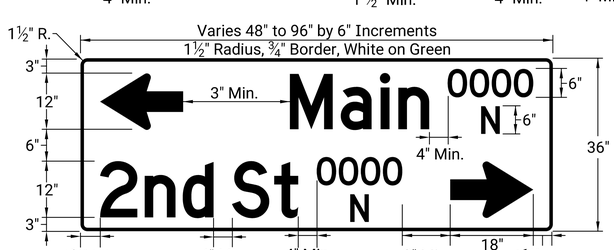
Sign	Legend	Length	Quantity

R10-3e

R10-FYA







USE FONT SERIES D. SHEETING SHALL BE ASTM TYPE XI SHEETING. SEE SPECIFICATION 703.8

BILL OF MATERIALS
-Quantities for Information Only-

Item	Quantity	Unit	Spec. No.	Note
CONTROLLER UNIT		EACH	703.2.1	
CONFLICT MONITOR		EACH	703.2.2	
LOAD SWITCH		EACH	703.2.3	
FLASHER		EACH	703.2.4	
FLASH TRANSFER RELAY		EACH	703.2.5	
SURGE PROTECTOR		EACH	703.2.6	
DC ISOLATOR		EACH	703.2.7	
AC ISOLATOR		EACH	703.2.8	
GPS CLOCK		EACH	703.2.9	
POWER STRIP		EACH	703.2.11	
LOOP DETECTOR (2 or 4 CHANNEL)		EACH	703.2.10	
POLE MOUNTED CABINET (336L)		EACH	703.2.11	
PAD MOUNTED CABINET (332L)		EACH	703.2.11	
PAD MOUNTED CABINET (342) (DOUBLE)		EACH	703.2.11	
BATTERY BACKUP (BBS/UPS)		EACH	703.2.14	
VIDEO DETECTION DEVICE & HARDWARE		EACH	703.3.1	
RADAR DETECTION DEVICE & HARDWARE		EACH	703.3.2	
TRAFFIC SIGNAL HEAD	CHART A	EACH	703.4.1	
SIGNAL HEAD MOUNTING BRACKET	CHART A	EACH	703.4.2	
RETROREFLECTIVE BACKPLATE	CHART A	EACH	703.4.3	
VEHICLE TRAFFIC SIGNAL LED MODULES		EACH	703.4.4	
PEDESTRIAN TRAFFIC SIGNAL LED MODULES	2	EACH	703.4.5	
APS PUSHBUTTON SYSTEM & SIGN (R10-3E, 9"x15")		EACH	703.4.6	
TRAFFIC SIGNAL POLE	CHART B	EACH	703.5.1	
TRAFFIC SIGNAL PEDESTAL (ALUMINUM)		EACH	703.5.2	
APS PUSHBUTTON STATION (ALUMINUM)	2	EACH	703.5.3	
SERVICE BOX		EACH	703.6	
LUMINAIRE ARM		EACH	703.7.1	POWER COMPANY PROVIDED & INSTALLED
LED LUMINAIRE		EACH	703.7.2	POWER COMPANY PROVIDED & INSTALLED
PHOTOCELL		EACH	703.7.3	POWER COMPANY PROVIDED & INSTALLED
UNFUSED STREET LIGHT CONNECTOR KIT		EACH	703.7.4	
FUSED STREET LIGHT CONNECTOR KIT		EACH	703.7.5	
OVERHEAD STREET NAME SIGN	CHART C	EACH	703.8.1	
R10-10 SIGN (30" X 36")		EACH	703.8.2	
R10-FYA SIGN (30" X 36")		EACH	703.8.2	
BLANK OUT SIGN (36" X 36")		EACH	703.8.3	
ENTRANCE HEAD		EACH	703.9.2	
SERVICE ENCLOSURE, AMP.		EACH	703.9.3	
CIRCUIT BREAKER, TRAFFIC SIGNAL, AMP.		EACH	703.9.4	
CIRCUIT BREAKER, LUMINAIRE, AMP.		EACH	703.9.4	
SURGE ARRESTER CA 302R		EACH	703.9.5	
POWER SERVICE CONTROLLER CABINET		EACH	703.9.6	
GROUND ROD & CLAMP		EACH	703.10	
SERVICE WIRE NO. __ AWG 1/C		LIN FT	703.11.1	
LIGHTING DISTRIBUTION WIRE NO. __ AWG 1/C		LIN FT	703.11.2	
POLE & BRACKET WIRE NO. 10 AWG 1/C		LIN FT	703.11.3	
GROUND WIRE NO. 6 AWG 1/C BARE SOLID	16	LIN FT	703.11.4	
TRACER WIRE NO. 12 AWG (BLUE)		LIN FT	703.11.5	
TRACER WIRE CONNECTOR		EACH	703.11.6	
MULTI-CONDUCTOR CABLE NO. 14 AWG 7/C	730	LIN FT	703.11.7	
MULTI-CONDUCTOR CABLE NO. 14 AWG /C		LIN FT	703.11.7	
DETECTION CABLE		LIN FT	703.11.9	
PRE-FORMED LOOP		EACH	703.11.10	
ETHERNET CABLE (CAT6)		LIN FT	703.11.11	
CONDUIT, 2" & FITTINGS		LIN FT	703.12	
CONDUIT, 3" & FITTINGS	16	LIN FT	703.12	
CONDUIT, __" & FITTINGS		LIN FT	703.12	

NOTES:

1. QUANTITIES SHOWN ARE FOR WEST ST AND I-235 WB RAMPS SIGNAL.
2. REFER TO CITY OF WICHITA PART 700 TRAFFIC SIGNALIZATION SPECIFICATIONS.
3. ALL TRAFFIC SIGNAL POLES SHALL BE PAINTED BLACK PER LATEST EDITION OF PART 700 SPECIFICATIONS. SIGNAL CABINET SHALL BE NATURAL ALUMINUM.
4. CONFLICT MONITOR SHALL BE A 2010 ECL-IP UNIT WITH ETHERNET PORT.
5. A SEPARATE DETECTION CARD SHALL BE USED FOR EACH INTERSECTION LEG. THE DETECTION SYSTEM INCLUDES DETECTOR UNIT, PROCESSOR, CARD, AND INCIDENTAL ITEMS NECESSARY FOR THE SUCCESSFUL OPERATION OF THE DETECTION SYSTEM.

BID ITEM

Item	Quantity	Unit
Traffic Signal	LSUM	LSUM
Temporary Traffic Signal	LSUM	LSUM
Traffic Signal Controller		EACH
Detection System	LSUM	LSUM

1. TRAFFIC SIGNAL CONTROLLER ITEM INCLUDES THE UNIT COST FOR PERMANENT CONTROLLER ONLY. COST FOR INSTALLATION, PROGRAMMING, ETC. SHALL BE INCLUDED IN THE "TRAFFIC SIGNAL" QUANTITY.
2. CONTROLLERS FOR TEMPORARY SIGNAL(S) IS SUBSIDIARY TO THE BID ITEM "TEMPORARY TRAFFIC SIGNAL".
3. FOR MULTIPLE PROJECT INTERSECTIONS, QUANTITIES SHOULD BID SEPARATELY FOR EACH SIGNALIZED INTERSECTION (EXCLUDING CONTROLLERS).
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.

NO.	DATE	REVISIONS	BY	APP'D
3				
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CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

WEST STREET & I-235 WB RAMPS
TRAFFIC SIGNAL
QUANTITY SHEET

TRAFFIC ENGINEER — APP'D 01/27/22
MIKE ARMOUR, P.E.

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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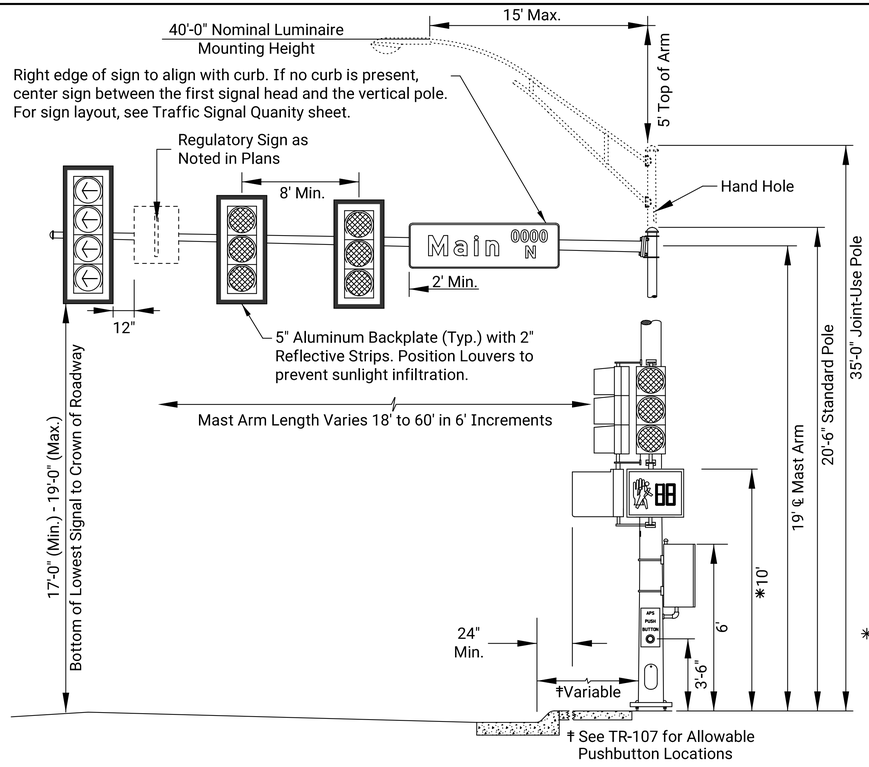
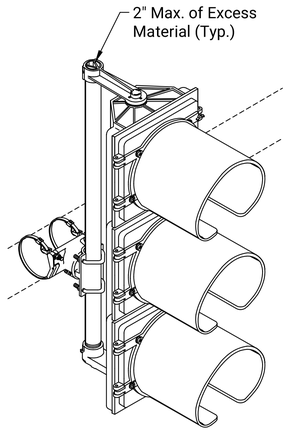
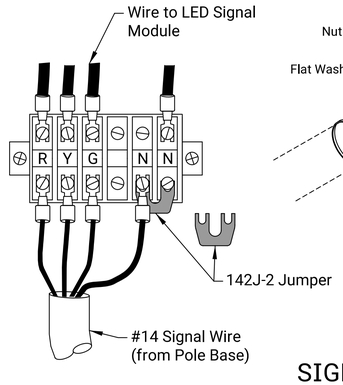
NOTE TO DESIGNER: Mast arm length shall be a minimum of 2 feet longer than last signal head. See "Signal Pole Data and Specification" for standard mast arm lengths and luminaire heights.



✳ NOTE:
Pedestrian signal heads shall be mounted so the top of signal head is at 10' above sidewalk level. Bottom of pedestrian head shall be 7' minimum from sidewalk level.

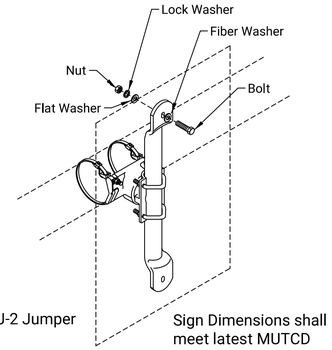


RIGID SIGNAL MOUNTING DETAIL

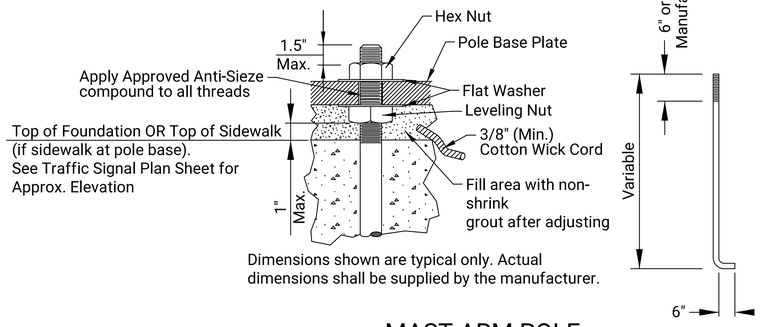


SIGNAL HEAD JUMPER DETAIL

Example for 3-Section Head Shown

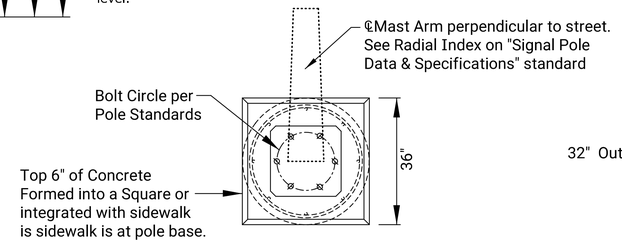


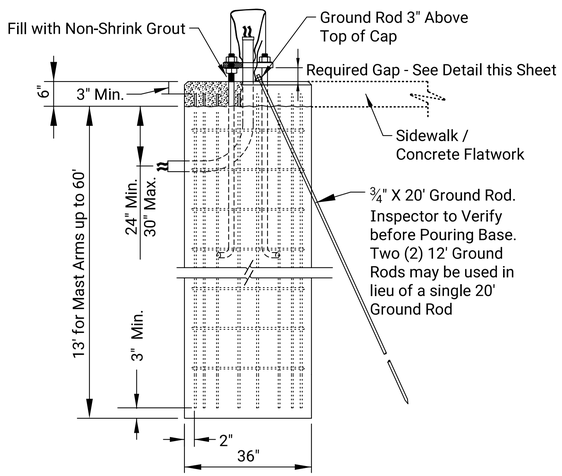
SIGN MOUNTING BRACKET DETAIL SIGNS OVER 18" TALL (R10 SERIES)



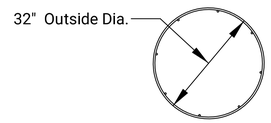
MAST ARM POLE ANCHOR BOLT DETAIL

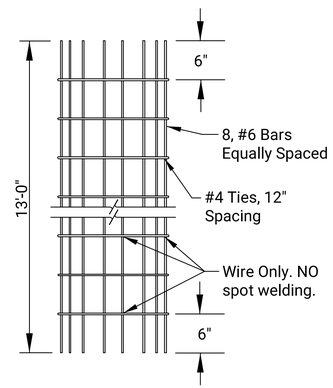
1. Under no circumstance shall the bolt-flange of the pole be recessed in concrete.
2. The space between Pole Base Plate and Top of Foundation shall not exceed the diameter of the anchor bolt.
3. The anchor bolt threads shall be protected from concrete fouling during concrete placement.





MAST ARM POLE & BASE DETAIL





MAST ARM POLE REBAR CAGE DETAIL

(FOR MAST ARMS UP TO 60')

NOTE:
1. THE CITY STANDARD TRAFFIC SIGNAL POLE FOUNDATION DESIGN IS ACCEPTABLE FOR A MAXIMUM MAST ARM SPAN OF UP TO 60 FEET WITH A 13'-0" DEEP FOOTING SHAFT. IF A LONGER MAST ARM IS REQUIRED, SIGNAL POLE FOUNDATION DESIGN CALCULATIONS MUST BE SUBMITTED TO THE CITY FOR REVIEW.
2. MINIMUM SOIL PROPERTIES FOR THESE LENGTHS ARE EITHER "PHI" OF 5° OR GREATER OR A MINIMUM "C" VALUE OF 500 PSF OR GREATER. SOILS HAVING PROPERTIES LESS THAN EITHER OF THESE MUST HAVE CALCULATIONS SUBMITTED TO THE CITY FOR REVIEW.
3. THE ANCHOR BOLTS FOR THE SIGNAL POLE MAY BE TACK WELDED TOGETHER IN BOLT PATTERN (ON CENTERS AS SHOWN) TO MAINTAIN REQUIRED BOLT CONFIGURATION PATTERN AND TO AID IN VERTICAL POSITIONING WHILE CONCRETE BASE IS POURED.
4. USE ANTI-SEIZE COMPOUND ON ALL THREADS.
5. GROUND RODS TO BE POSITIONED AND SHOWN TO INSPECTOR BEFORE POURING BASE.
6. GROUND RODS FOR TRAFFIC SIGNAL MAST ARM POLES AND 342 CABINETS SHOULD BE 3/4" X 20'. TWO (2) 3/4" X 12' GROUND RODS MAY BE USED IN LIEU OF A SINGLE 20' GROUND ROD. ALL OTHER GROUND RODS SHALL BE 3/4" X 12'.
7. CONCRETE SHALL MEET THE REQUIREMENTS OF GRADE 4.0 PER SPECIFICATIONS.
8. CONSTRUCT SQUARE CONCRETE CAP AFTER POLE HAS BEEN ERECTED & PLUMBED. CHAMFER EDGE 1". MUST BE APPROVED BY ENGINEER BEFORE POURED.
9. CONDUIT SHALL HAVE PLASTIC (OR METAL) BUSHING (ABOVE BASE) TO PREVENT CABLE CHAFING.
10. RUBBER GROMMETS SHALL BE INSTALLED FOR WIRE ENTRANCE HOLES AT EACH PENETRATION LOCATION. HOLES MAY BE FIELD DRILLED AS PER MANUFACTURE SIZE AND PROCEDURES.
11. HOLE(S) FOR WIRING SHOULD BE 7/8" MINIMUM DIAMETER AND MUST BE DEBURRED TO PREVENT DAMAGE. SPARE/EMPTY HOLES SHALL BE FILLED WITH TRADE-SIZE SMOOTH-FACE CONDUIT CLOSURE(S) OR AS DIRECTED BY CITY TRAFFIC SIGNAL MAINTENANCE.
12. USE #6 BARE COPPER GROUND CONDUCTOR FROM CLAMP TO GROUND BOLT IN ACCESS HOLE.
13. IN THE EVENT SOUND BEDROCK IS ENCOUNTERED AT A DEPTH LESS THAN STANDARD, CONTRACTOR SHALL NOT PROCEED WITHOUT ENGINEER APPROVAL OF SOCKET DEPTH.
14. IT MAY BE NECESSARY TO USE A CONCRETE FORM/SONOTUBE FOR THE SIGNAL AND PEDESTRIAN POLE BASES WHERE PREVIOUS EXCAVATION MAY HAVE OCCURRED OR SANDY SOILS. IT IS EXPECTED THAT THE SIGNAL AND PEDESTRIAN POLES' LOCATIONS WILL NOT BE CHANGED AND IT IS UP TO THE CONTRACTOR TO ACCOUNT FOR CONCRETE FORMS WITHIN THEIR BID IF THEY ARE NEEDED FOR POSSIBLE UNSTABLE SOIL CONDITIONS.

NO	DATE	REVISIONS	BY	APP'D
3				
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CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

TRAFFIC SIGNAL INSTALLATION DETAIL SHEET

TRAFFIC ENGINEER — APP'D 01/27/22
MIKE ARMOUR, P.E.

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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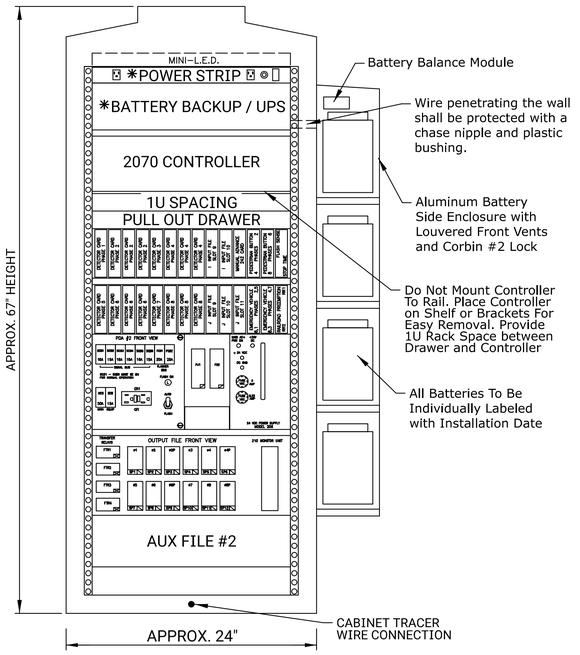
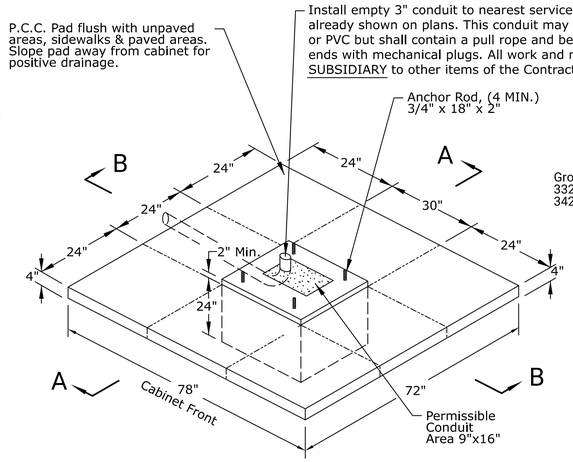
NOTE TO DESIGNER: Design shall identify cabinet type on Traffic Signal Quantity Sheet. Typically, the Type 332L Cabinet shall be used unless intersection includes (or future) fiber connections or integration with transportation system.

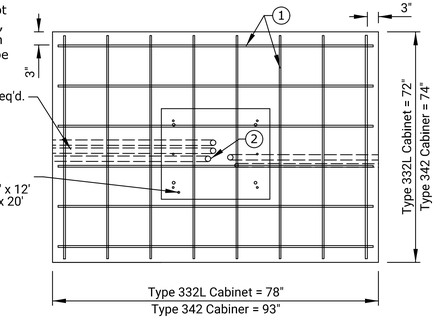


TYPICAL TYPE 332L CABINET (PAD MOUNT)

Approximate 67" H x 24" W x 30" D
*Locate Power Strip & BBS on Backside of Cabinet



TYPE 332L PAD



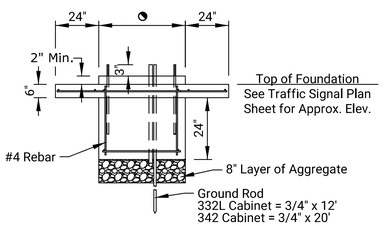
CABINET FOUNDATION NOTES:

1. ALL REINFORCING BAR USED IN THE CONSTRUCTION OF THE CABINET FOUNDATION SHALL BE NO. 4 BARS, EVENLY SPACED AT 12 IN SPACING, +/- 1.5 IN.

   6"x6"-W4xW4 WELDED WIRE FABRIC (WWF) MAY BE USED IN LIEU OF REINFORCING BAR.

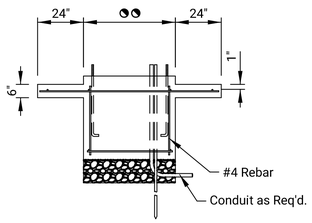
2. REINFORCEMENT SHALL BE ADJUSTED TO ACCOMMODATE CONDUIT.

3. MINIMUM NO. 4 COPPER GROUNDING CONDUCTOR FROM CABINET EQUIPMENT GROUND BUS TO GROUND ROD.



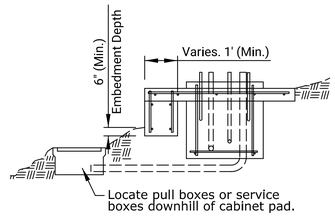
SECTION "A-A"

◔ Type 332L Cabinet = 24"
Type 342 Cabiner = 26"



SECTION "B-B"

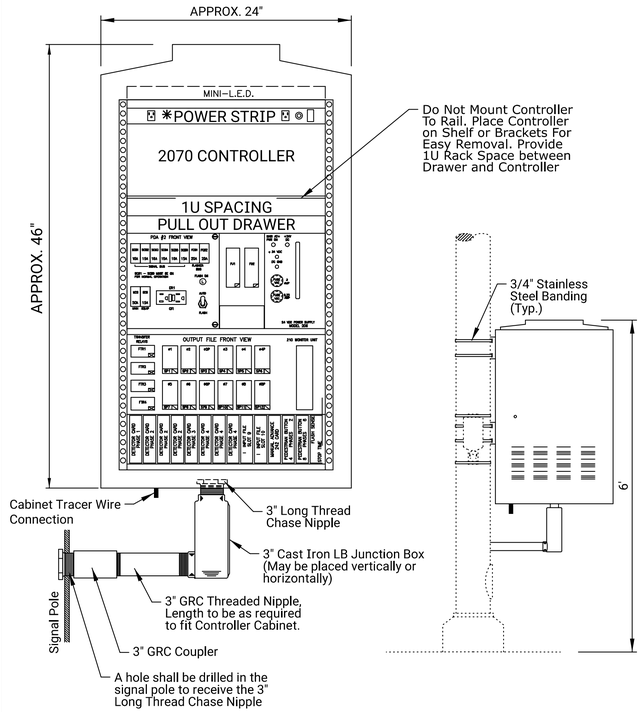
◔◔ Type 332L Cabinet = 30"
Type 342 Cabiner = 45"



FOUNDATION ON SLOPE DETAIL

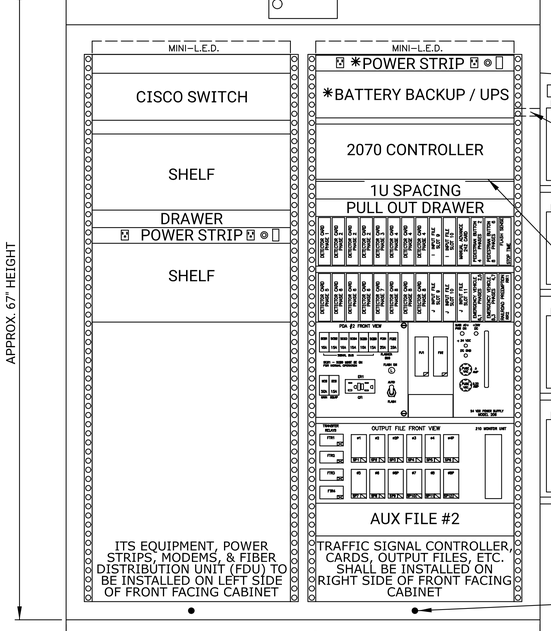
1. All reinforcing bar shall be No. 4 bars, evenly spaced at 12" spacing, +/- 1.5".

2. Additional concrete, material, and labor required for cabinet foundation on slope shall be SUBSIDIARY to other items of the contract.



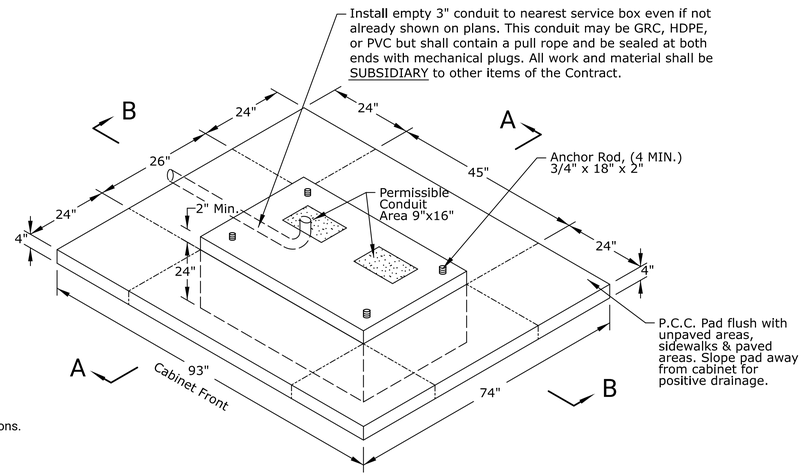
TYPICAL TYPE 336L CABINET (POLE MOUNT)

Approximate 46" H x 24" W x 22" D
*Locate Power Strip on Backside of Cabinet



TYPICAL TYPE 342 CABINET (PAD MOUNT)

Approximate 67" H x 45" W x 26" D
*Locate Power Strip & BBS on Backside of Cabinet



TYPE 342 PAD

NOTE:

1. CABINET BASE DIMENSIONS MAY VARY DEPENDING ON MANUFACTURER. CONTRACTOR SHALL VERIFY DIMENSIONS AND ANCHOR BOLT LOCATIONS FROM MANUFACTURER PRIOR TO CONSTRUCTING BASE.
2. All CABINETS SHALL BE A MINIMUM OF 0.125" NATURAL ALUMINUM AND INCLUDE A 19" EIA RACK.
3. ALL CABINETS SHALL INCLUDE A TRACER WIRE CONNECTION AND ANODES. SEE SIGNAL STANDARDS FOR DETAILS.
4. SIGNAL CONTROLLER SHALL NOT BE MOUNTED DIRECTLY TO 19" EIA RACK BUT SHALL SIT ON SHELF/BRACKETS TO ALLOW EASY REMOVAL.
5. ALL CONDUITS SHALL BE SEALED WITH APPROVED MATERIAL. EMPTY CONDUITS SHALL CONTAIN PULL ROPE AND SEALED WITH MECHANICAL PLUG.
6. ANTENNA(S) IF USED, SHALL BE PLACED WITHIN THE CABINET IF SIGNAL QUALITY IS ADEQUATE AS DETERMINED BY THE ENGINEER THROUGH SIGNAL STRENGTH TESTING BY THE CONTRACTOR.
7. GROUND RODS TO BE POSITIONED AND SHOWN TO INSPECTOR BEFORE POURING BASE.
8. GROUND RODS FOR 342 CABINETS SHOULD BE 3/4" X 20'. TWO (2) 3/4" X 12' GROUND RODS MAY BE USED IN LIEU OF A SINGLE 20' GROUND ROD. ALL OTHER CABINET GROUND RODS SHALL BE 3/4" X 12'.

NO	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

2070 SIGNAL CABINET & PAD DETAILS

TRAFFIC ENGINEER — APP'D 01/27/22
MIKE ARMOUR, P.E.

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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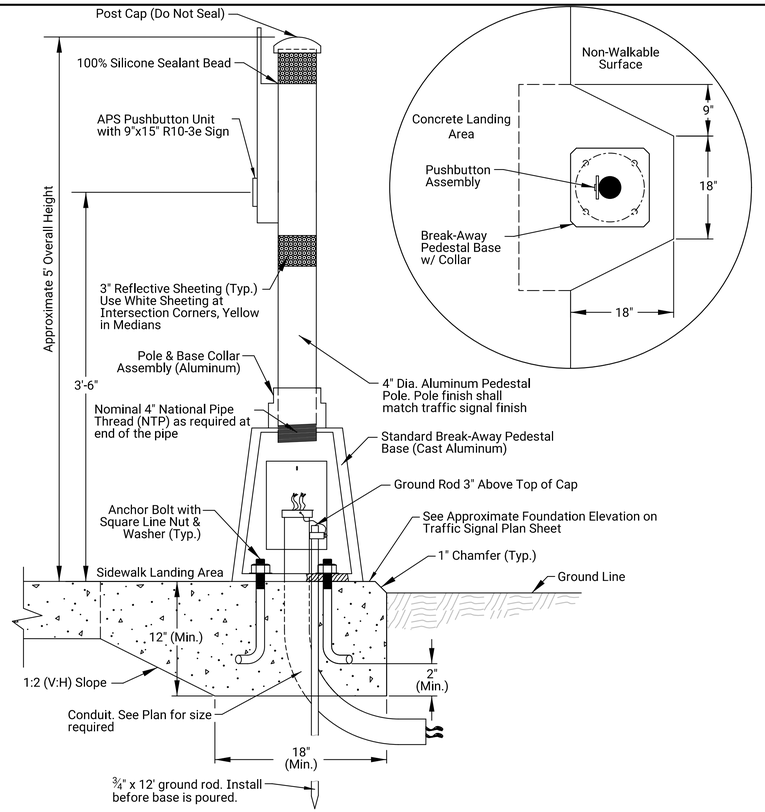
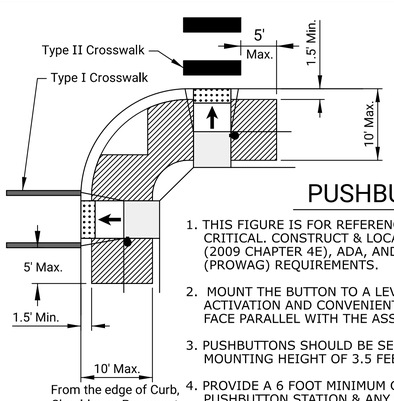
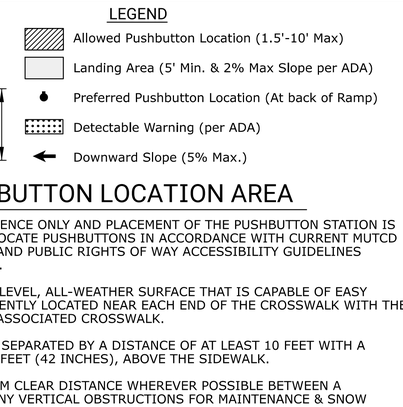
NOTE TO DESIGNER: Designer shall verify that pedestrian features and locations meet MUTCD requirements (latest edition)



APS PUSHBUTTON STATION

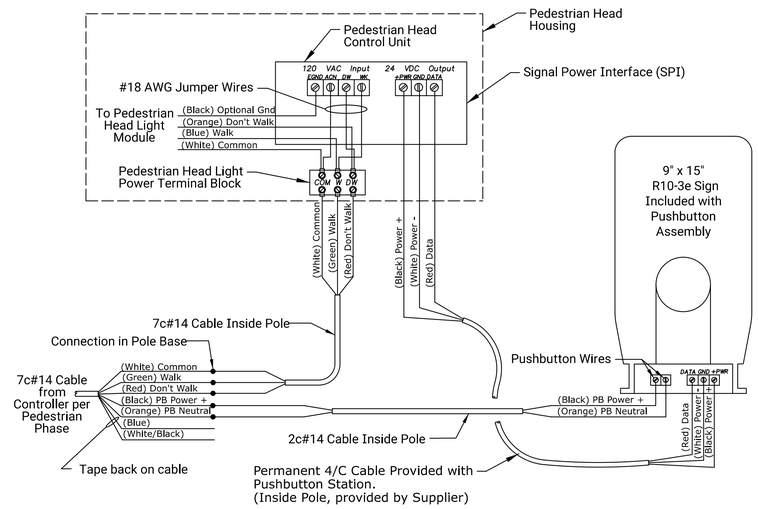
1. PLUMB THE PUSHBUTTON STATION WITH GALVANIZED STEEL LEVELING SHIMS AS REQUIRED.
2. USE #6 BARE COPPER GROUND CONDUCTOR FROM CLAMP TO GROUND BOLT IN ACCESS HOLE.
3. THE PUSHBUTTON STATION FOUNDATION HAS TWO (2) OPTIONS. BOTH OPTIONS ARE SUBSIDIARY TO THE APS PUSHBUTTON STATION AND NO ADDITIONAL PAYMENT WILL BE MADE REGARDLESS OF FOUNDATION TYPE.
   A. POURED MONOLITHIC WITH THE SIDEWALK (SHOWN ABOVE) - PROVIDE A 1:2 (V:H:) SLOPE GRADE WHERE THE SIDEWALK DEPTH TRANSITIONS TO THE 12" FOUNDATION DEPTH.
   B. ALTERNATIVE FOUNDATION DESIGN - PLACE FOUNDATION AS SHOWN ON STANDARD SHEET "TRAFFIC SIGNAL INSTALLATION DETAIL SHEET". THIS 24" FOUNDATION WILL MATCH THE TRAFFIC SIGNAL PEDESTAL BASE. PROVIDE A BOND BREAKER OR EXPANSION JOINT TO SEPARATE FOUNDATION FROM SIDEWALK.



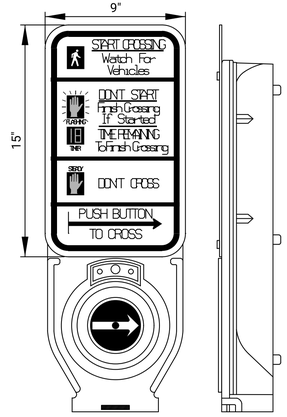


PUSHBUTTON LOCATION AREA

1. THIS FIGURE IS FOR REFERENCE ONLY AND PLACEMENT OF THE PUSHBUTTON STATION IS CRITICAL. CONSTRUCT & LOCATE PUSHBUTTONS IN ACCORDANCE WITH CURRENT MUTCD (2009 CHAPTER 4E), ADA, AND PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG) REQUIREMENTS.
2. MOUNT THE BUTTON TO A LEVEL, ALL-WEATHER SURFACE THAT IS CAPABLE OF EASY ACTIVATION AND CONVENIENTLY LOCATED NEAR EACH END OF THE CROSSWALK WITH THE FACE PARALLEL WITH THE ASSOCIATED CROSSWALK.
3. PUSHBUTTONS SHOULD BE SEPARATED BY A DISTANCE OF AT LEAST 10 FEET WITH A MOUNTING HEIGHT OF 3.5 FEET (42 INCHES), ABOVE THE SIDEWALK.
4. PROVIDE A 6 FOOT MINIMUM CLEAR DISTANCE WHEREVER POSSIBLE BETWEEN A PUSHBUTTON STATION & ANY VERTICAL OBSTRUCTIONS FOR MAINTENANCE & SNOW REMOVAL PURPOSES.



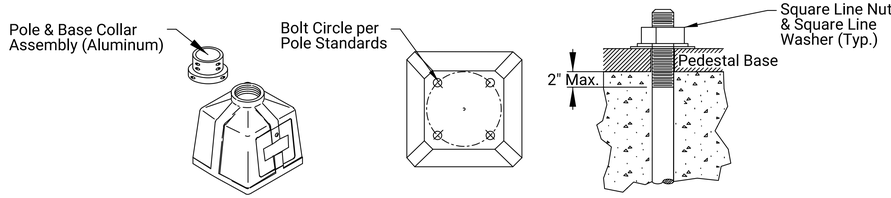
PEDESTRIAN PUSHBUTTON WIRING DIAGRAM



APS PUSHBUTTON SYSTEM & SIGN (R10-3E, 9"x15")

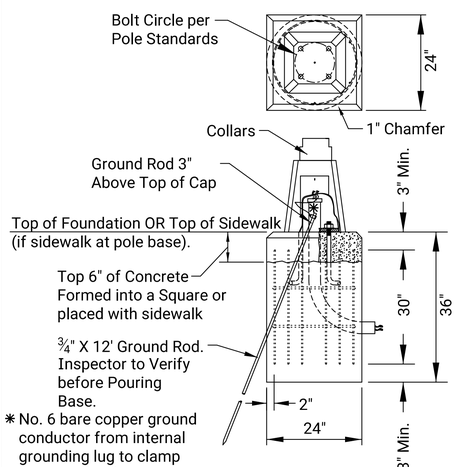
NOTE:

1. THE PUSHBUTTON SYSTEM AND SIGN SHALL MEET OR EXCEED CURRENT MUTCD AND ADA REQUIREMENTS.
2. PUSHBUTTON SYSTEM SHOULD INCLUDE INSTALLATION AND MOUNTING HARDWARE.
3. THE PUSHBUTTON SYSTEM SHOULD INCLUDE A FOUR CONDUCTOR (4/C) CABLE CONNECTING THE SIGNAL POWER INTERFACE (SPI) IN THE PEDESTRIAN SIGNAL HEAD TO THE PUSHBUTTON ASSEMBLY. THE CABLE IS NOT SPECIFICALLY QUANTIFIED OR INCLUDED IN THE TRAFFIC SIGNAL BILL OF MATERIALS. CABLE AND INSTALLATION IS SUBSIDIARY TO THE PUSHBUTTON SYSTEM.
4. SEE "TRAFFIC SIGNAL WIRING & TIMING DETAILS" FOR PEDESTRIAN TIMING AND EXTENSIONS.
5. THE PUSHBUTTON SYSTEM SHALL PROVIDE THE FOLLOWING MINIMUM STANDARD FEATURES:
   A. VANDAL RESISTANT HOUSING
   B. BOTH AUDIBLE AND VIBROTACTILE WALK INDICATIONS.
   C. THE AUDIBLE WALK INDICATION SHALL BE CAPABLE OF BOTH A PERCUSSIVE TONE & SPEECH WALK MESSAGE AS REQUIRED BY MUTCD
   D. LOCATOR TONE AND HIGH CONTRAST TACTILE ARROW(S) ALIGNED PARALLEL TO THE ASSOCIATED CROSSWALK DIRECTION OF TRAVEL.
   E. AUTOMATIC SOUND ADJUSTMENT IN RESPONSE TO AMBIENT SOUND LEVEL

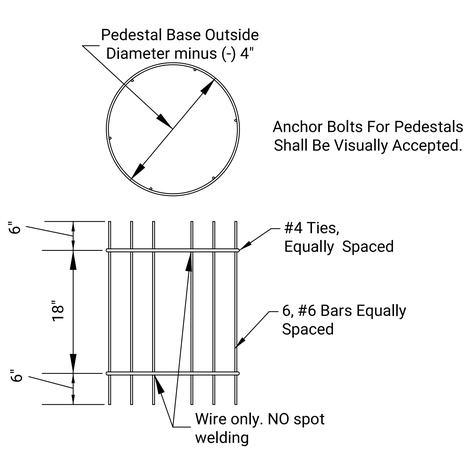


STANDARD BREAK-AWAY PEDESTAL BASE & ANCHOR BOLT DETAIL

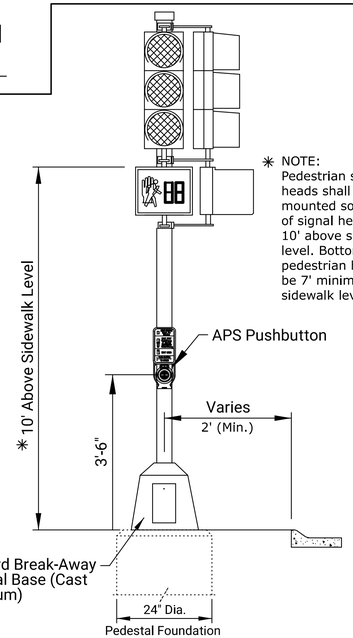
1. STANDARD BREAK-AWAY PEDESTAL BASE SHALL BE USED ON BOTH THE TRAFFIC SIGNAL PEDESTAL AND APS PUSHBUTTON STATION.
2. USE SQUARE LINE NUTS AND WASHERS ON PEDESTAL BASE.
3. ANCHOR BOLTS FOR PEDESTALS SHALL BE VISUALLY ACCEPTED.



PEDESTAL & APS PUSHBUTTON FOUNDATION DETAIL



PEDESTAL & APS PUSHBUTTON REBAR CAGE DETAIL



TRAFFIC SIGNAL PEDESTAL

SEE STANDARD SHEET "TRAFFIC SIGNAL INSTALLATION DETAIL SHEET" FOR PEDESTRIAN FOUNDATION DETAILS.

NO	DATE	REVISIONS	BY	APP'D
3				
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CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SIGNAL PEDESTAL, PUSHBUTTON STATION, & APS PUSHBUTTON DETAILS

TRAFFIC ENGINEER: *MIKE ARMOUR, P.E.* APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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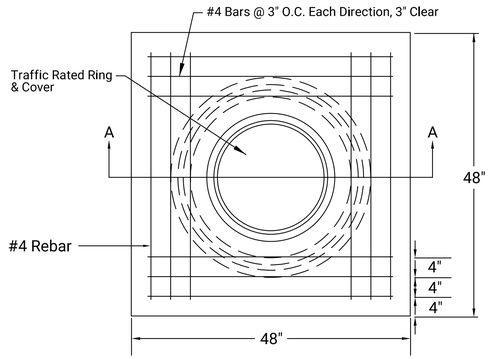
SERVICE BOX CONSTRUCTION/INSTALLATION DETAILS

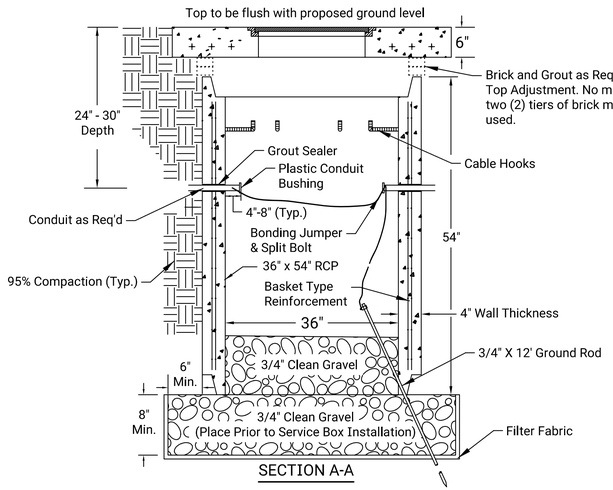


PRECAST CONCRETE SERVICE BOX
(36" I.D. X 54" RCP) with 6" cap

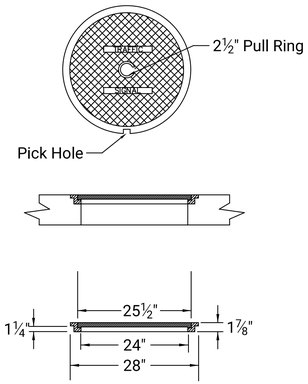
SERVICE BOX:
1. CONDUIT CONNECTION TO BE 4"-8" INSIDE FACE OF SIDE WALL, CONDUIT TO DRAIN INTO SERVICE BOX.
2. CONDUIT CONNECTIONS TO SERVICE BOX SHALL BE TERMINATED WITH PLASTIC CONDUIT BUSHING.
3. CONDUIT SHALL BE SEALED WITH APPROVED SEALER AT INSIDE WALL FACE.
4. ALL SERVICE BOXES TO HAVE 8" OF 3/4" CLEAN GRAVEL WITH FILTER FABRIC PLACED PRIOR TO SERVICE BOX INSTALLATION.
5. NO MORE THAN TWO (2) TEIRS OF BRICKS SHALL BE USED FOR TOP ADJUSTMENTS. BRICKS SHALL BE GROUTED.
6. SERVICE BOX AND LID SHALL BE TRAFFIC RATED.

CONDUIT:
1. SLOPE CONDUIT TO DRAIN AS DIRECTED BY THE ENGINEER.
2. ALL CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT (GRC) UNLESS APPROVED OTHERWISE BY ENGINEER.

NO 90 DEGREE ELBOWS UNLESS APPROVED BY TRAFFIC MAINTENANCE



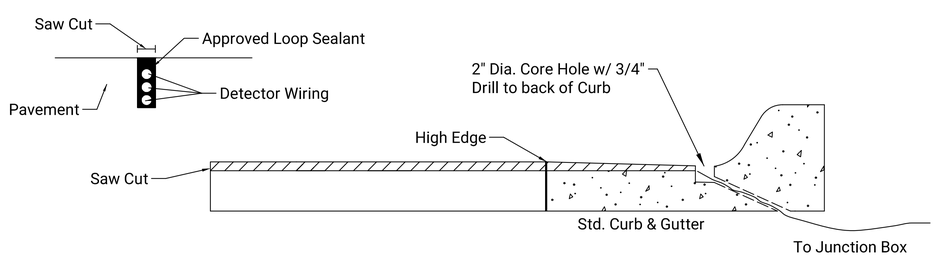
SECTION A-A



RING & COVER DETAIL

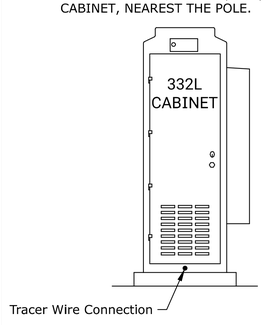
COVER SHALL INCLUDE "TRAFFIC SIGNAL"

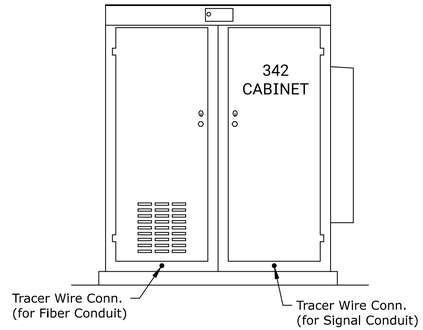
CONDUIT/DETECTOR WIRE INSTALLATION DETAILS

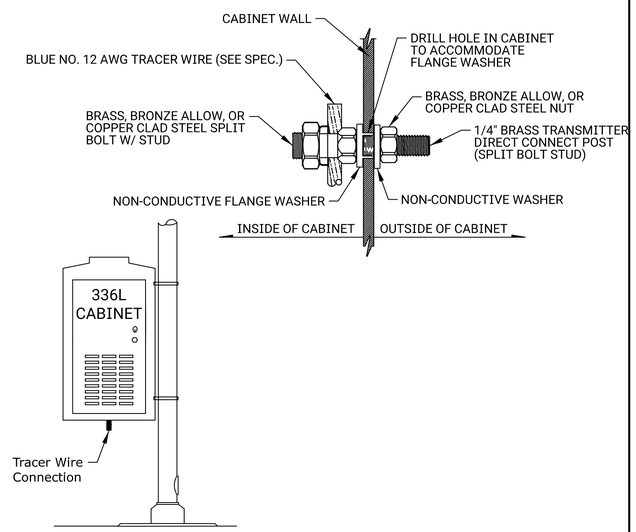


CABINET TRACER WIRE CONNECTION DETAIL

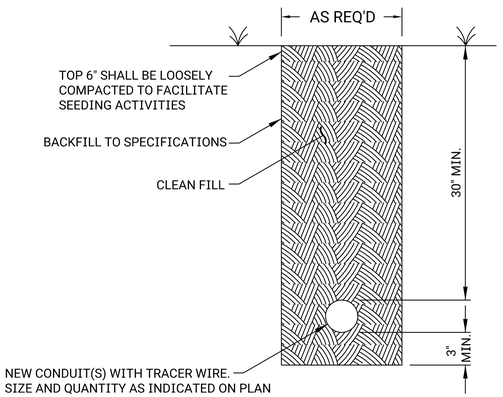
1. TRACER WIRE TERMINAL SHALL BE SOLID BRASS, BRONZE ALLOY, OR COPPER CLAD STEEL & ACCESSIBLE FROM THE OUTSIDE OF THE CABINET.
2. TERMINAL SHALL BE COMPLETELY ISOLATED FROM CABINET & GROUNDING. RUBBER ISOLATORS ARE NOT ALLOWED.
3. HOLE IN CABINET SHALL BE MADE WATER TIGHT.
4. MAINTAIN 1.5" MINIMUM CLEARANCE FOR TERMINAL.
5. APPLY THREAD LOCK SEALANT TO REDUCE TAMPERING.
6. CRIMP STYLE WIRE TERMINALS CONNECTING TRACER WIRE TO TRANSMITTER DIRECT CONNECT POST ARE NOT PERMITTED.
7. TERMINAL LOCATION - TERMINALS SHALL BE MOUNTED IN ORDER TO PREVENT ACCIDENTAL "SNAGGING". LOCATIONS SHOULD BE A MINIMUM OF 1.5" FROM CABINET EDGES.
   A. PAD MOUNTED CABINET (332L) - TERMINAL SHALL BE LOCATED IN THE BOTTOM LIP OF THE CABINET UNDER THE BACK CABINET DOOR, CENTERED.
   B. POLE MOUNTED CABINET (336L) - TERMINAL SHALL BE MOUNTED ON THE BOTTOM SIDE OF THE CABINET, NEAREST THE POLE.







CONDUIT BORING & TRENCH DETAILS



GENERAL:
1. ALL CROSSINGS UNDER ROADWAY SHOULD HAVE A MINIMUM OF 5 FT OF COVER BELOW CROWN GRADE OR 3 FT COVER BELOW DITCH GRADE.

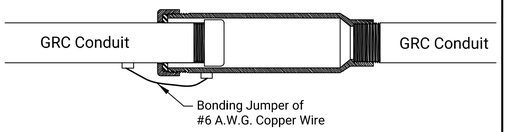
2. NO 90° ELBOWS UNLESS APPROVED BY TRAFFIC MAINTENANCE

3. INSTALL TRACER WIRE FOR LOCATING PURPOSES IN ALL CONDUIT RUNS. WHEN MULTIPLE CONDUITS SHARE THE SAME TRENCH OR BORE, TRACER WIRE TO BE LOCATED IN TOP CONDUIT ONLY.

4. BORING:
   A. INSTALL BORED CONDUIT WITHOUT DISTURBING THE EXISTING SURFACE. PLACE BORED CONDUIT BY BORING OR OTHER APPROVED MEANS. LOCATE ALL BORE PITS AND SPOIL PILES A MINIMUM OF 4 FEET FROM THE EDGE OF THE PAVED ROADWAY OR SHOULDER SURFACE AND BARRICADE, FENCE, OR PROTECT THE PITS BY SOME OTHER ACCEPTABLE METHOD FROM ERRANT VEHICLES OR PEDESTRIANS.

5. TRENCHING:
   A. DEPTH TO BE 30" MINIMUM WITH ROCK & RUBBLE FREE BACKFILL TO SERVE AS BEDDING MATERIAL. MAINTAIN MINIMUM CONDUIT DEPTH IN TRENCH.
   B. BACKFILL TO BE COMPACTED IN 6" LOOSE LIFTS BY HAND OR MECHANICAL TAMPING TO PREVENT SETTLEMENT.
   C. EXCAVATE TRENCHES TO THE WIDTH AND DEPTH NECESSARY FOR CONDUIT INSTALLATION AS SHOWN IN THE PLANS. DO NOT USE MATERIAL WHICH MIGHT CAUSE MECHANICAL DAMAGE TO THE CONDUIT FOR BACKFILLING BELOW AN ELEVATION 6 INCHES ABOVE THE CONDUIT. CLEAN THE BOTTOM OF THE TRENCH OF SUCH MATERIAL BEFORE THE CONDUIT IS PLACED. OBTAIN APPROVAL BY THE ENGINEER OF THE TRENCH PRIOR TO CONDUIT PLACEMENT. BACKFILL AND COMPACT ALL TRENCHES.

EXPANSION FITTING



THE CONTRACTOR SHALL INSTALL THE CONDUIT AND CONNECTOR ASSEMBLY TO PERMIT A 1" MINIMUM LONGITUDINAL TRAVEL IN EITHER DIRECTION.

NO	DATE	REVISIONS	BY	APP'D
3				
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CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SERVICE BOX, CONDUIT, & TRACER WIRE CONNECTION CONSTRUCTION/INSTALLATION

TRAFFIC ENGINEER: MIKE ARMOUR, P.E. APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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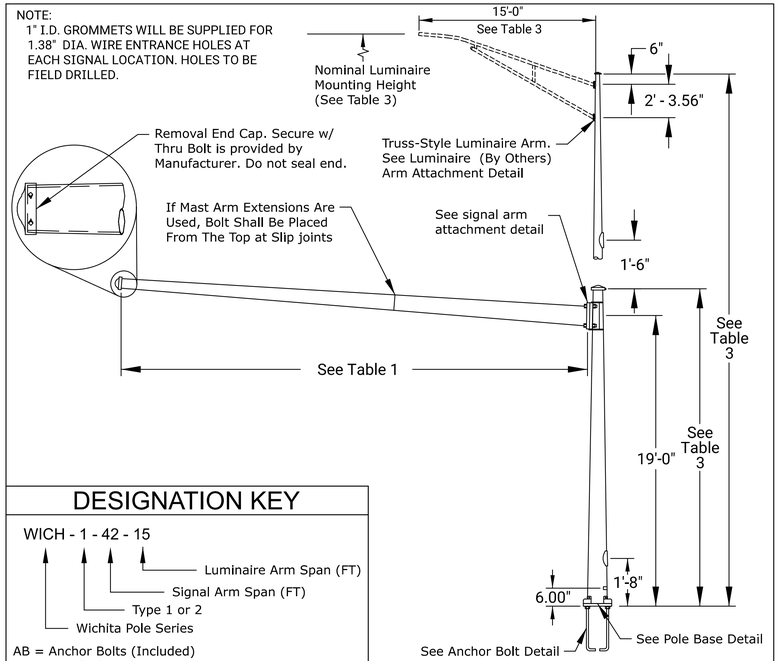
NOTE:
1" I.D. GROMMETS WILL BE SUPPLIED FOR 1.38" DIA. WIRE ENTRANCE HOLES AT EACH SIGNAL LOCATION. HOLES TO BE FIELD DRILLED.



DESIGNATION KEY

AB = Anchor Bolts (Included)
HH = Handhole
FPGV = Finish Paint over Galvanizing
TYPE 1 = No Luminaire Height (See Table 3)
TYPE 2 = Combo Pole (includes Height for Luminaire)

DESIGN CRITERIA

THE MAST ARM TRAFFIC STRUCTURES SHOWN ON THIS DRAWING SHALL BE DESIGNED IN ACCORDANCE WITH THE 2013 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", LATEST EDITION.

ASSEMBLY NOTE(S)

UPON INITIAL FIELD ASSEMBLY OF THE MAST-ARM'S FIRST SECTION'S BUTT PLATE TO THE MAST-ARM VERTICAL POLE'S BUTT PLATE, IF THE END USER DETERMINES THAT THERE IS A SUFFICIENT GAP AT A BOLT HOLE SUCH THAT THERE WILL NOT BE FACE-TO-FACE CONTACT BETWEEN THE TWO BUTT PLATES, THEN A WASHER SHALL BE INSERTED TO PROVIDE FACE-TO-FACE CONTACT BETWEEN THE TWO BUTT PLATES IN ACCORDANCE WITH SECTION 5.16 "BOLTED CONNECTIONS" OF THE 2013 EDITION OF AASHTO.

THE POLE SHOP DRAWING SUBMITTAL SHALL INCLUDE A FOUNDATION DIAGRAM INDICATING THE ORIENTATION OF BOLT PATTERNS FOR EACH POLE FOUNDATION. THE DRAWING SHALL INCLUDE A NORTH ARROW TO INSURE PROPER ORIENTATION OF POLE AND MAST ARM ON EACH FOUNDATION.

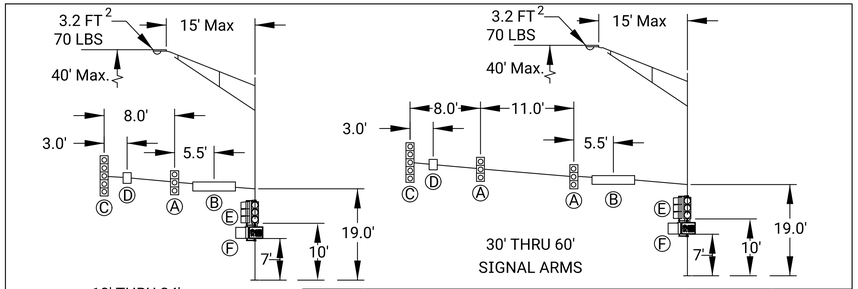
MANUFACTURER SHALL SHOP FIT COMPONENTS AND VERIFY CONNECTIONS PRIOR TO SHIPPING. FAILURE OF PROPER ALIGNMENT DURING ERECTION IN THE FIELD DUE TO MANUFACTURING SHALL BE THE RESPONSIBILITY OF THE MANUFACTURE AND MAY BE REPLACED AT NO COST IF DEEMED NECESSARY BY THE CITY TRAFFIC ENGINEER.

LUMINAIRE DIMENSIONS SHOWN ARE NOMINAL. CONTRACTOR AND SUPPLIER SHALL COORDINATE WITH LUMINAIRE ARM SUPPLIER TO INSURE PROPER MOUNTING PRIOR TO MANUFACTURING.

AASHTO 2013 SPECIFICATIONS

TABLE 2: MATERIAL DATA

COMPONENT	ASTM DESIGNATION
ALL TAPERED TUBES	A595 GR.A OR A572
BASE PLATE	A36
SIMPLEX PLATE	A36
ANCHOR BOLTS	F1554 GR.55
ARM CONNECTING BOLTS	A325
GALVANIZING-HARDWARE	HOT DIP ZINC



DEVICE	DESCRIPTION	PROJ. AREA (FT)	WEIGHT (LBS)
Ⓐ	12"- 3 SEC. SIGNAL WITH BACK PLATES	8.67	30
Ⓑ	36" X 96" STREET NAME SIGN	24.00	75
Ⓒ	12"- 5 SEC. SIGNAL WITH BACK PLATES	13.33	50
Ⓓ	30" X 36" SIGNAL ARM MOUNTED SIGN	7.50	25
Ⓔ	12"-3 SEC. SIGNAL WITH NO BACK PLATES	13.47	80
Ⓕ	SINGLE SECTION PEDESTRIAN SIGNAL	8.00	80

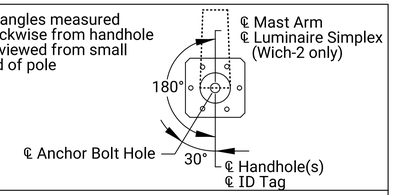
DESIGN LOADING INFORMATION

- For Design Information Only. Dimensions NOT for Construction -

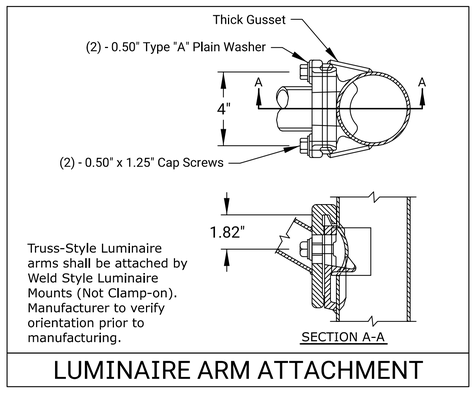
TABLE 3: LUMINAIRE MOUNTING HEIGHT

POLE TYPE	WICH-1	WICH-2
LUM. MOUNTING HEIGHT	-------	40' - 0"
POLE LENGTH	20' - 6"	35' - 0"

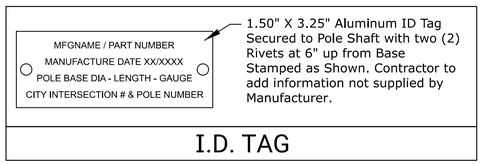
All angles measured clockwise from handhole as viewed from small end of pole



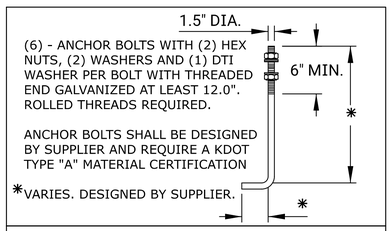
RADIAL INDEX



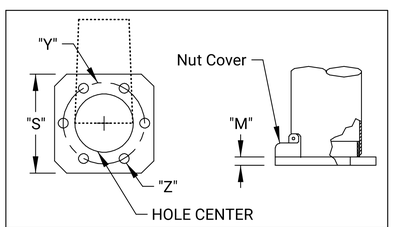
LUMINAIRE ARM ATTACHMENT



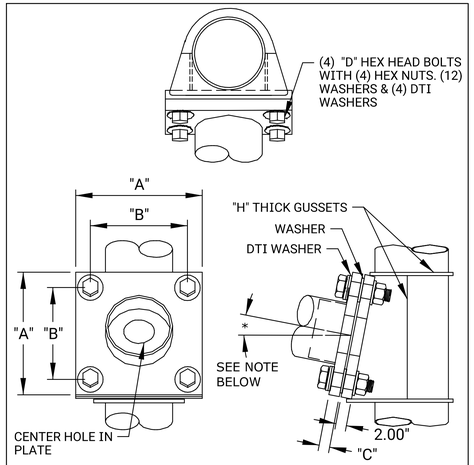
I.D. TAG



ANCHOR BOLT DETAIL



POLE BASE DETAIL



*RISE IN SIMPLEX PLATES VARIES PER POLE BASE DIA. & MAST ARM LOAD. SECURE PLATES TO STRUCTURE TO PREVENT FALLING.

SIGNAL POLE BASE BOLT CIRCLE "Y" (IN)	*"A" (IN)	"B" (IN)		"D" (IN)
18.00	17.75	14.50		1.25 X 6.75
21.50	22.25	18.50		1.50 X 7.25

SIGNAL ARM ATTACHEMENT DETAIL

*PREFERRED DIMENSION(S). DIMENSION MAY VARY SLIGHTLY BY MANUFACTURER

BASE COAT:	HOT-DIP GALVANIZED TO ASTM A123
PRIME COAT:	POLYAMIDOAMINE OR POLAMIDE EPOXY
FINISH COAT:	ALIPHATIC ACRYLIC POLYURETHANE W/ UV PACKAGE
COLOR:	BLACK
SPEC:	F-604A

STANDARD POLE FINISH

IN THE EVENT THE POLE OR MASTARM FINISH IS DAMAGED, THE CONTRACTOR SHALL USE THE BASE PRIMER AND FINISH COAT MATERIALS FURNISHED BY THE MANUFACTURER AND INCLUDED WITH THE STRUCTURE. NO OTHER PRODUCTS WILL BE APPROVED UNLESS APPROVED BY THE ENGINEER.

IN THE EVENT SIGNAL STRUCTURE MODIFICATIONS ARE REQUIRED, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WRITTEN PROCEDURES AND APPROVED MEANS AND METHODS FROM THE MANUFACTURE. MODIFICATIONS SHALL NOT AFFECT THE STRUCTURAL INTEGRITY OR WARRANTY OF THE STRUCTURE. ANY CHANGE SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO ACCEPTANCE. THE CITY HAS THE RIGHT TO REJECT MODIFICATIONS AND REQUIRE REPLACEMENT AT NO ADDITIONAL COST, INCLUDING LABOR AND MATERIAL.

THE CONTRACTOR SHALL INSTALL ALL REQUIRED COMPONENTS PROVIDED BY THE MANUFACTURE.

REPAIR & MODIFICATIONS

TABLE 1: POLE AND MAST ARM DATA

DESIGNATION KEY			POLE BASE			ANCHOR BOLT		
POLE SERIES	POLE TYPE	SIGNAL ARM SPAN (FT)	*SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	HOLE "Z" (IN)	DIAMETER (IN) "K"	QTY.
WICH	1 OR 2	18.0	23.00	18.00	2.00	1.50	6
		24.0					
		30.0					
		36.0					
		42.0	26.50	21.50			
		48.0					
		54.0					
		60.0					

TRAFFIC SIGNAL POLES SHALL INCLUDE TWO (2) POLE BASE PLATE AND CORRESPONDING MAST ARM ATTACHMENT SIZES.

POLE BASE SIZE AND MAST ARM ATTACHMENTS SHALL BE INTERCHANGEABLE, REGARDLESS OF MANUFACTURE.

DIMENSIONS SHOWN ON TABLE(S) SHALL REMAIN CONSTANT, REGARDLESS OF POLE MANUFACTURE TO INSURE INTERCHANGEABILITY.

DIMENSIONS AND THICKNESSES SHOWN ON DETAILS BUT NOT SHOWN IN TABLE(S) MAY VARY BY MANUFACTURE.

*PREFERRED DIMENSION(S). DIMENSION MAY VARY SLIGHTLY BY MANUFACTURER

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SIGNAL POLE DATA & SPECIFICATIONS

TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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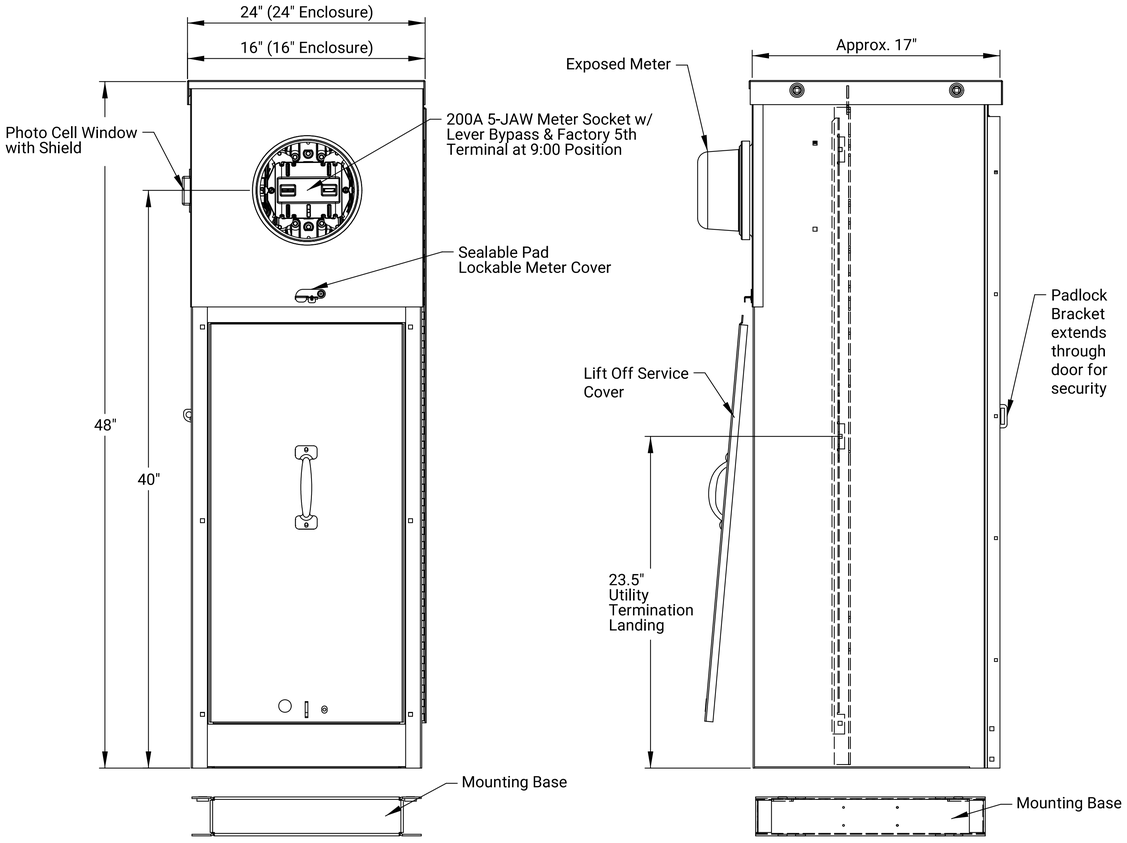
NOTE TO DESIGNER: Designer shall specify the 16" (single meter) or 24" (double meter) size in quantities.

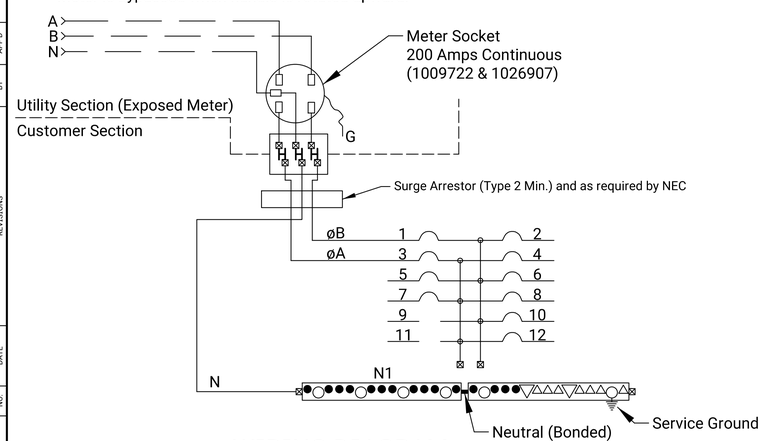


FRONT VIEW

SIDE VIEW

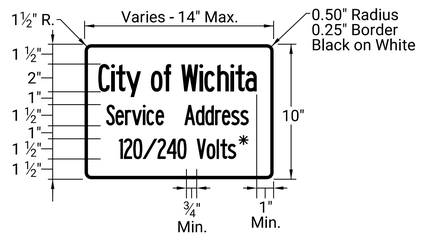
POWER SERVICE ENCLOSURE

CAUTION:
Lever By-pass. Circuit may be live with meter removed.
Meter is bypassed when handle is rotated upward.



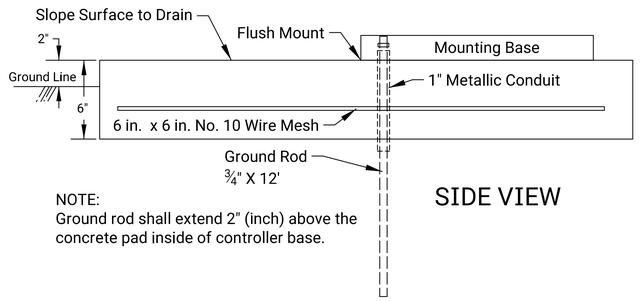
WIRING DIAGRAM

Lighting circuit not shown. See Manufacturer's Drawing for Additional Details.



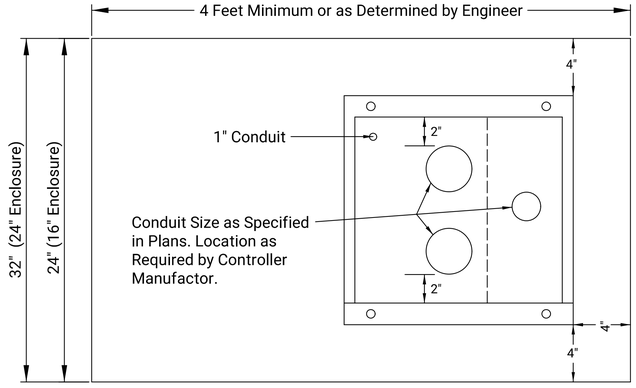
NAMEPLATE DETAIL

1. Apply on "street side" of enclosure facing the street referenced in the address
2. * Voltage as Provided by Electric Service
3. Nameplate shall match enclosure material type & be mechanically fastened (rivets) to enclosure



NOTE:
Ground rod shall extend 2" (inch) above the concrete pad inside of controller base.

SIDE VIEW



TOP VIEW

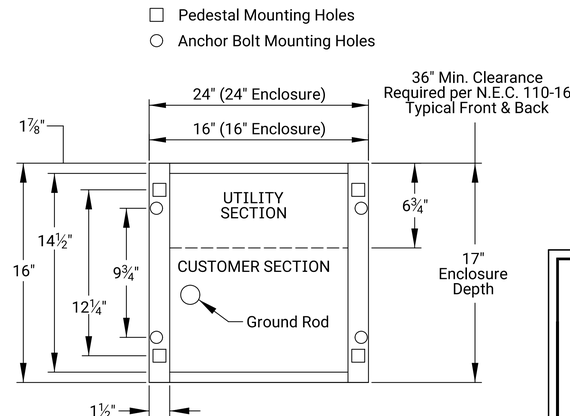
CONCRETE FOUNDATION PAD DETAIL

NOTES:

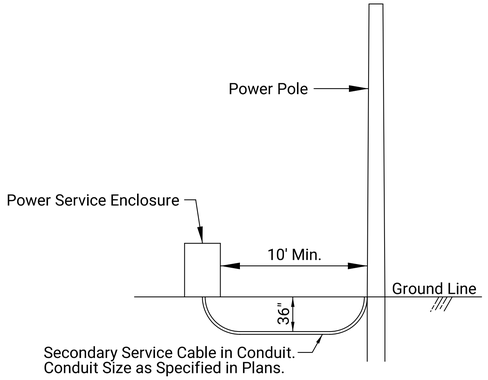
1. THE POWER ENCLOSURE SHALL BE CONSTRUCTED OF BARE 5052 ALLOY ALUMINUM 0.125" (INCH) THICK. THE ENCLOSURE SHALL BE OF CLEAN CUT DESIGN HAVING NO SHARP EDGES, CORNERS OR PROJECTIONS AND NEMA TYPE 3R CONSTRUCTION
2. THE ENCLOSURE SHALL INCREASE IN SIZE WITH THE NUMBER OF CIRCUITS.
3. ENCLOSURE SHALL BE MEET THE CURRENT ENERGY COMPANY REQUIREMENTS. THIS INCLUDES A EXPOSED METER ENCLOSURE, 200A, JAW-CLAMPING LEVER-BYPASS METER SOCKET WITH FACTORY INSTALLED FIFTH TERMINAL AT 9:00 POSITION.
4. SPLIT BUS LOAD CENTER. THE BUS LOAD CENTER SHOULD INCLUDE THE FOLLOWING UNLESS SHOWN OTHERWISE IN THE PLAN DOCUMENTS.
   A. UNSWITCHED (CONSTANT) LOAD CENTER WITH 50A 2P; 30A 1P AND 30A 2P BREAKERS
   B. SWITCHED LOAD CENTER WITH ELECTRICALLY-HELD CONTACTOR CONTROLLED BY PHOTO CELL RECEPTACLE AND HAND-OFF-AUTO SWITCH, 30A 1P AND 30A 2P BREAKERS.
5. THE SECONDARY BREAKER FOR THE PHOTO-CELL CIRCUIT SHALL BE 277 VOLT, 15 AMP SINGLE POLE.
6. THE WIRING FROM PB1 AND PB2 TO T1 THROUGH T4 SHALL BE NO. 6 AWG THW.

7 THE WIRING FOR THE LOAD AND LINE SIDE OF THE MAIN BREAKER SHALL BE THE SAME SIZE WITH THE WIRE.

8. THE WIRING FOR THE PHOTO ELECTRIC CONTROL CIRCUIT SHALL BE NO. 12 AWG THW.
9. ALL WIRING AND WIRING METHODS SHALL COMPLY WITH THE MOST CURRENT NATIONAL ELECTRIC CODE (NEC) STANDARDS. ANY CHANGES TO THESE STANDARDS SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
10. NO STEP DOWN TRANSFORMER SHALL BE LOCATED ON METER
11. USE MILBANK POWER SERVICE ENCLOSURES BELOW (OR APPROVED EQUAL):
    16" ENCLOSURE CATALOG #CP3B51C14PAOSL1
    24" ENCLOSURE CATALOG #CP3B51C14RAOSL1



MOUNTING BASE DETAIL



POWER ARRANGEMENT

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

POWER SERVICE ENCLOSURE (SINGLE METER)

TRAFFIC ENGINEER APP'D 01/27/22
MIKE ARMOUR, P.E.

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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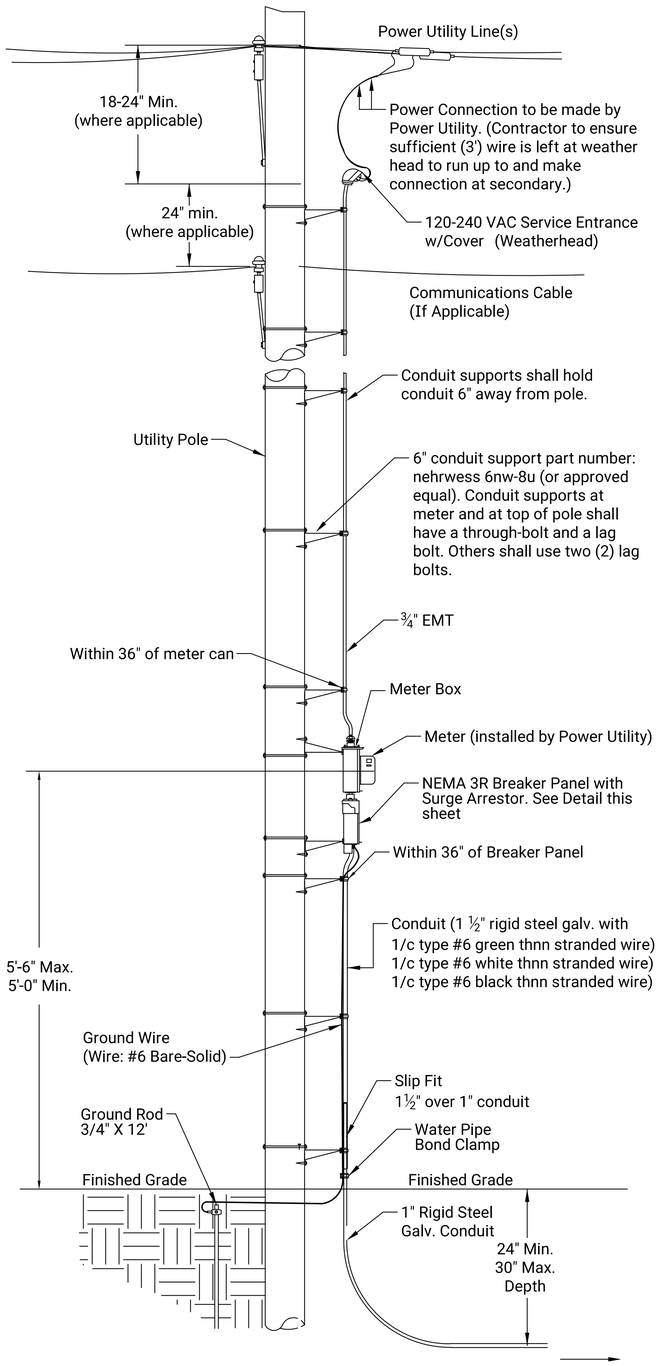
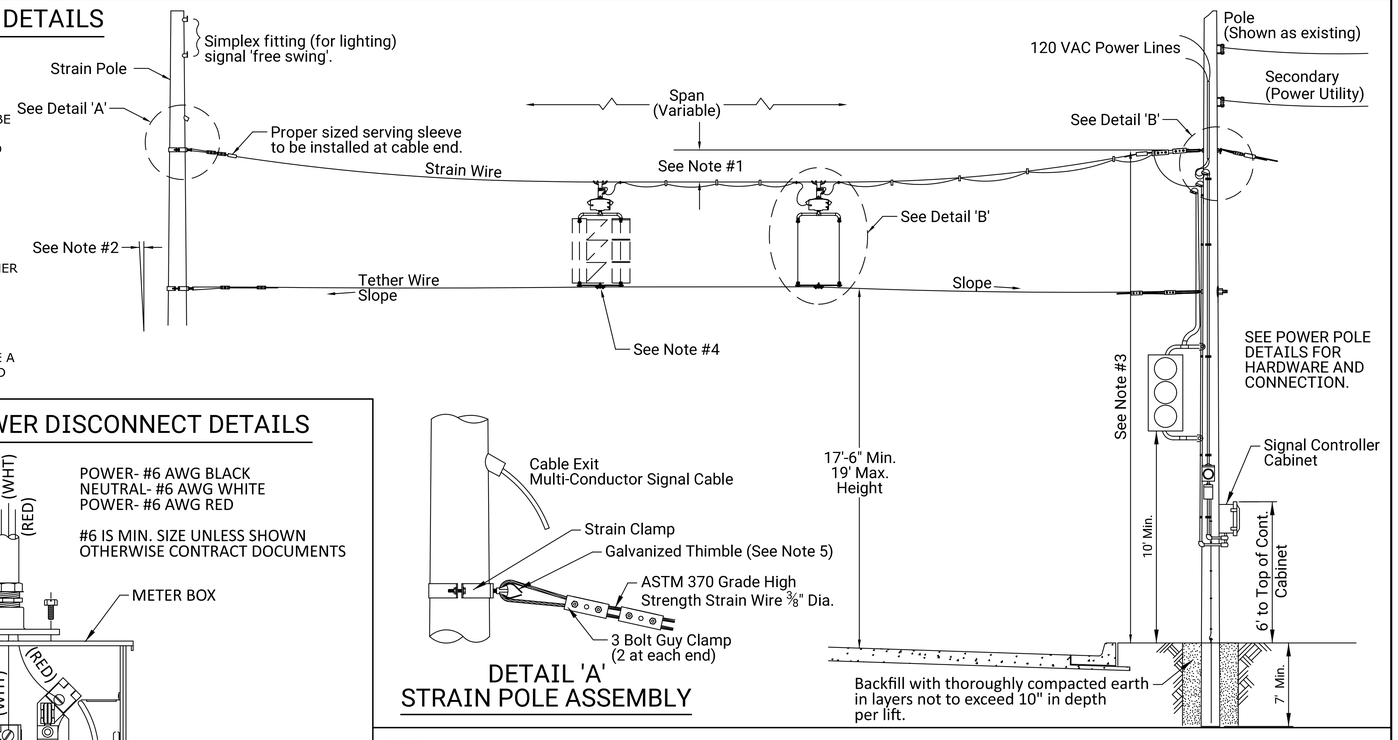
TEMPORARY POWER POLE DETAILS

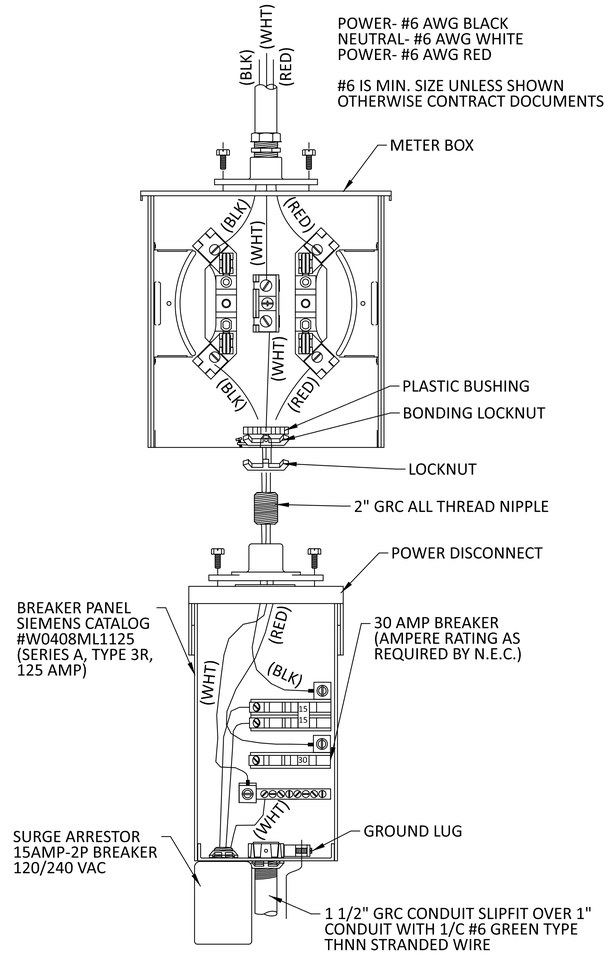


SPANWIRE ASSEMBLY DETAILS

1. MAX. SAG = 5% OF SPAN
2. STANDARD BACKRAKE = 1.5°
3. HEIGHT OF STRAIN WIRE HOOK-UP TO BE DETERMINED BY FIELD ENGINEER. TRAFFIC SIGNAL CABLE TO BE SECURED TO STRAIN (SPAN) WIRE WEATHERABLE NYLON CABLE HANGERS (12" CTR.)
4. TETHER CLAMP TO BE DESIGNED TO RELEASE UNDER 'HIGH WIND LOAD' TO PERMIT SIGNAL 'FREE SWING'.
5. STRAIN, TETHER, & GUY WIRES (WHETHER SPECIFICALLY SHOWN OR NOT) SHALL INCLUDE GALVANIZED THIMBLE(S) AT CONNECTIONS TO REDUCE STRAIN, ABRASION, AND KINKING OF WIRE.
6. IF WOOD POLE IS USED, POLE SHALL BE A MINIMUM 35' CLASS 4, OR AS REQUIRED TO PROVIDE MINIMUM CLEARANCES.



METER BOX & POWER DISCONNECT DETAILS



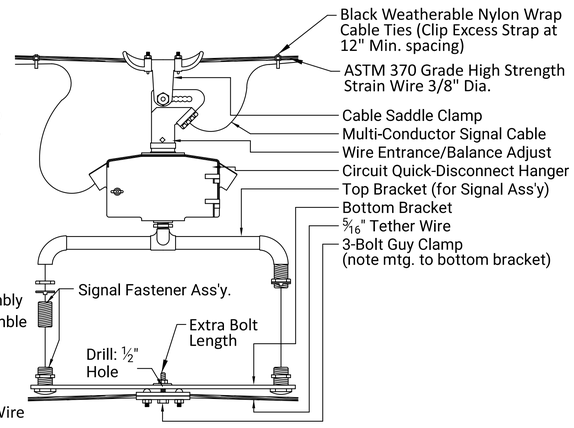
A SINGLE CONDUCTOR STRANDED #6 GREEN WIRE SHALL CARRY THE EQUIPMEN GROUND FROM THE GROUND LUG OF ALL SIGNAL POLES TO THE CONTROLLER CABINET AND THE POWER DISCONNECT BOX

DETAIL 'A' STRAIN POLE ASSEMBLY

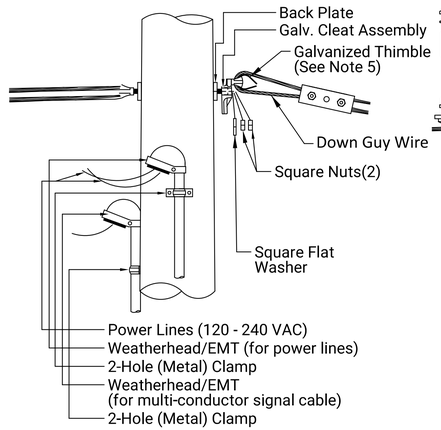
NOTE:

1. GALV. THIMBLE EYE ANCHOR BOLT AND EXPANDING ANCHOR (NOT SHOWN) TO STABILIZE POLE (WHERE APPLICABLE)
2. ANY COMBINATION OF ROUND/THIMBLE EYE BOLTS AND NUTS MAY BE UTILIZED AS APPLICATION MAY VARY. FIELD ENGINEER TO DETERMINE TYPE OF HARDWARE USED.
3. HARDWARE SHOWN IS FOR WOOD OR STEEL POLE. (POWER; SIGNAL CABLE; METER, ETC.)FIELD ENGINEER TO MAKE DETERMINATION. STRAIN POLE APPLICATIONS MAY VARY AS TO MOUNTING ON POLE: USE OF CLAMPS, BANDED BRACKETS, ETC. ARE STD. - FIELD ENIGNEER TO DETERMINE BEST TYPE APPLICATIONS.

SIGNAL BRACKET ASSEMBLY DETAILS



DETAIL 'B' POLE ASSEMBLY



NO.	DATE	REVISIONS	BY	APP'D
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1				

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

TEMPORARY SPAN POLE ASSEMBLY DETAILS

TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

PROJECT NUMBER	ORG NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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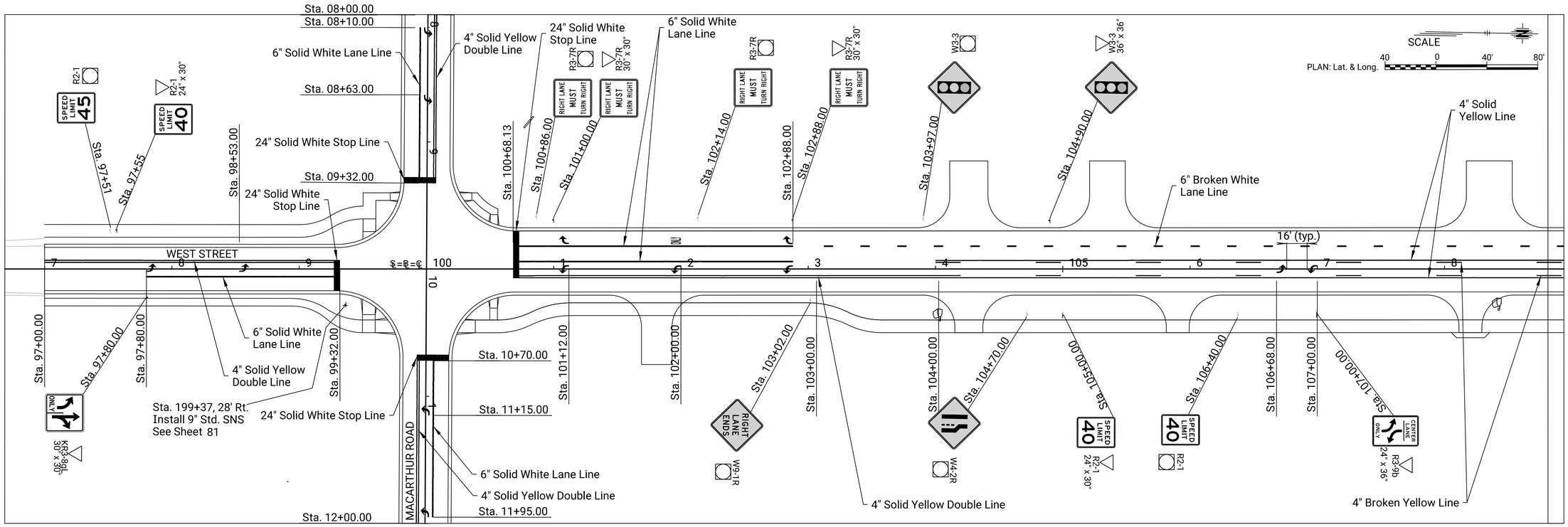
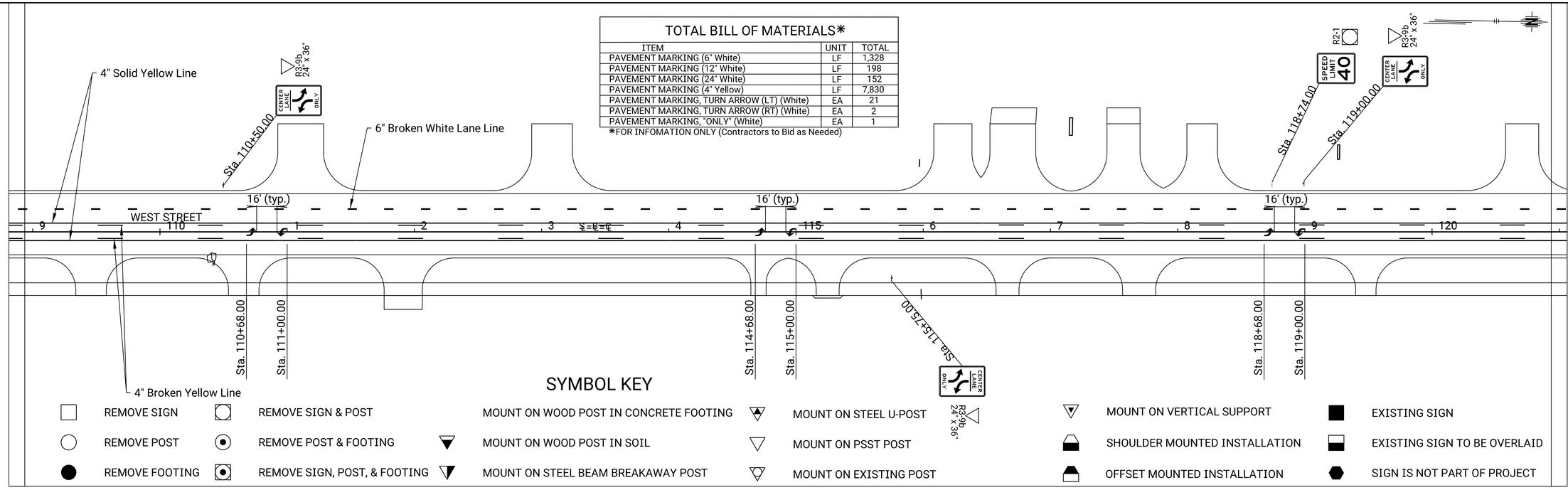




TOTAL BILL OF MATERIALS*

ITEM	UNIT	TOTAL
PAVEMENT MARKING (6" White)	LF	1,328
PAVEMENT MARKING (12" White)	LF	198
PAVEMENT MARKING (24" White)	LF	152
PAVEMENT MARKING (4" Yellow)	LF	7,830
PAVEMENT MARKING, TURN ARROW (LT) (White)	EA	21
PAVEMENT MARKING, TURN ARROW (RT) (White)	EA	2
PAVEMENT MARKING, "ONLY" (White)	EA	1

*FOR INFOMATION ONLY (Contractors to Bid as Needed)

SYMBOL KEY

- REMOVE SIGN
- REMOVE SIGN & POST
- MOUNT ON WOOD POST IN CONCRETE FOOTING
- MOUNT ON STEEL U-POST
- MOUNT ON VERTICAL SUPPORT
- EXISTING SIGN
- REMOVE POST
- REMOVE POST & FOOTING
- MOUNT ON WOOD POST IN SOIL
- MOUNT ON PSST POST
- SHOULDER MOUNTED INSTALLATION
- EXISTING SIGN TO BE OVERLAID
- REMOVE FOOTING
- REMOVE SIGN, POST, & FOOTING
- MOUNT ON STEEL BEAM BREAKAWAY POST
- MOUNT ON EXISTING POST
- OFFSET MOUNTED INSTALLATION
- SIGN IS NOT PART OF PROJECT

CITY OF WICHITA

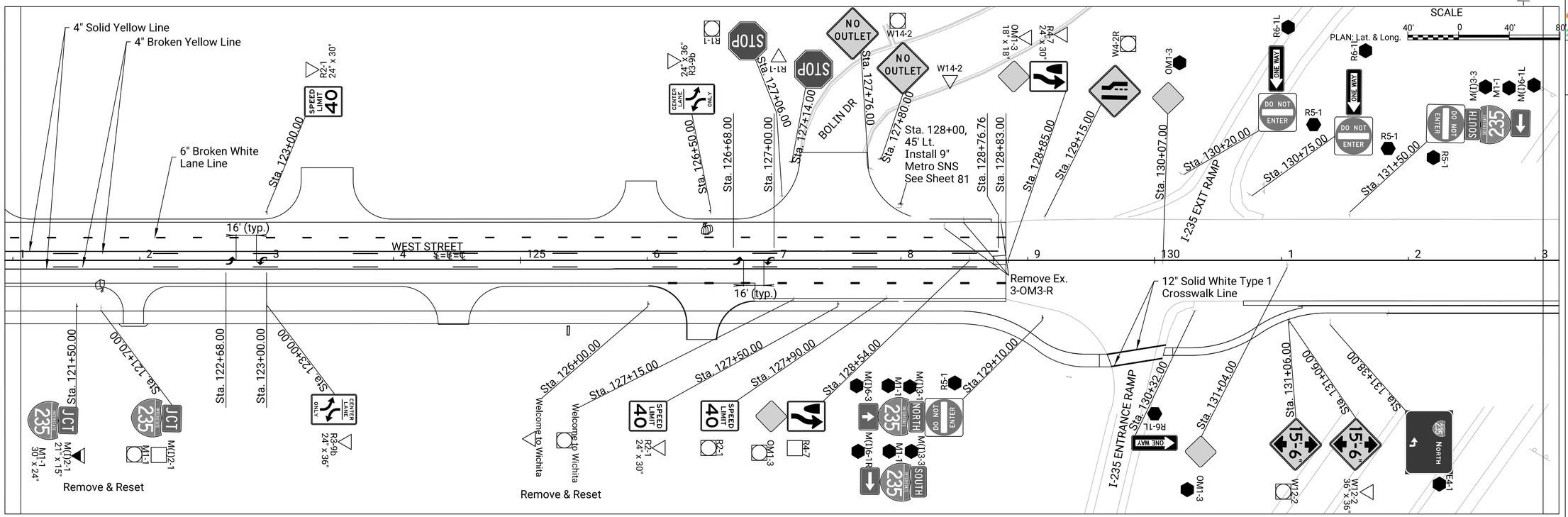
WSP

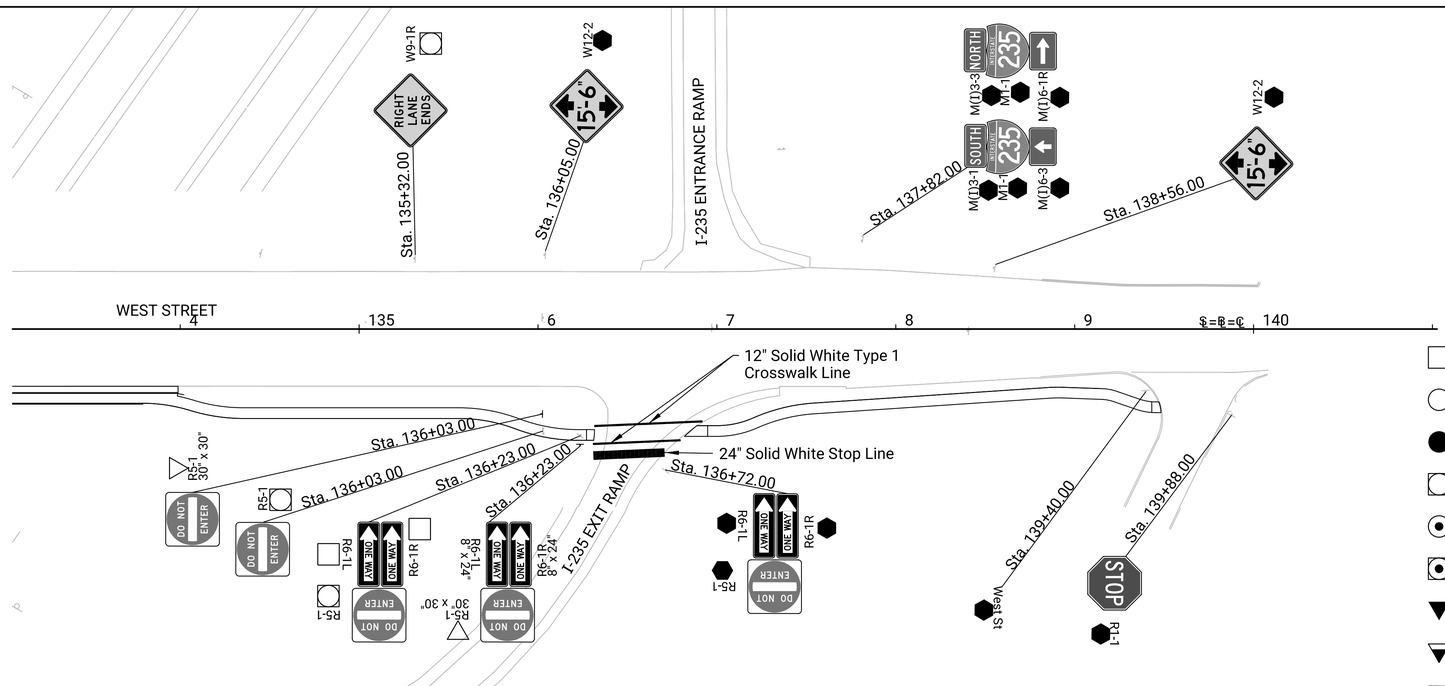
WEST STREET - I-235 TO MACARTHUR
MARKING & SIGNING PLAN
STA. 97+00 TO STA. 121+00

REVISIONS			DESCRIPTION
		NO.	DATE

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
79
SHEET 79 OF 128





1. All pavement markings shall be thermoplastic (cold plastic). Pavement markings shall be installed per manufacture's recommendation and shall meet KDOT's 90M-100-R10 specification (City Standard Specifications). Full traffic may not be restored (and substantial Project Completion achieved) until all pavement markings are in place. Should construction timing be such that restoration of traffic becomes necessary during temperatures prohibiting the instillation of thermoplastic markings, the Contractor shall install and maintain temporary markings until such time that thermoplastic markings may be properly installed. Except for material requirement, temporary pavement marking shall be place equivalent in every manner (ie. dimension, frequency, spacing, etc.), to the permanent marking layout. The cost for the temporary pavement markings will not be paid for directly, but shall be SUBSIDIARY to the bid item "Pavement Markings".
2. Remove any Traffic Control Signs and Markings that are nullified by this new construction.
3. All dimensions shown are to the centerline of marking unless otherwise noted.

SYMBOL KEY

REMOVE SIGN	MOUNT ON STEEL U-POST
REMOVE POST	MOUNT ON PSST POST
REMOVE FOOTING	MOUNT ON EXISTING POST
REMOVE SIGN & POST	MOUNT ON VERTICAL SUPPORT
REMOVE POST & FOOTING	SHOULDER MOUNTED INSTALLATION
REMOVE SIGN, POST, & FOOTING	OFFSET MOUNTED INSTALLATION
MOUNT ON WOOD POST IN CONCRETE FOOTING	EXISTING SIGN
MOUNT ON WOOD POST IN SOIL	EXISTING SIGN TO BE OVERLAID
MOUNT ON STEEL BEAM BREAKAWAY POST	SIGN IS NOT PART OF PROJECT

CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR
MARKING & SIGNING PLAN
STA. 121+00 TO STA. 145+00

REVISIONS			DESCRIPTION	DATE	NO.

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

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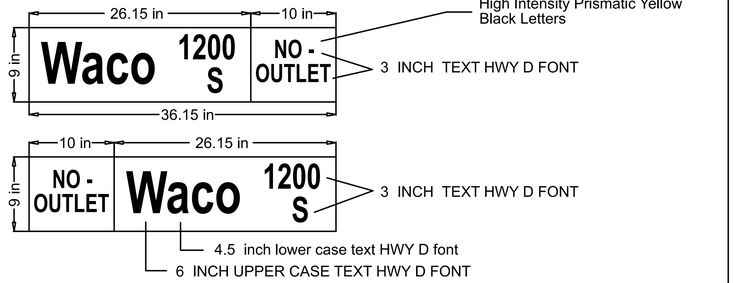
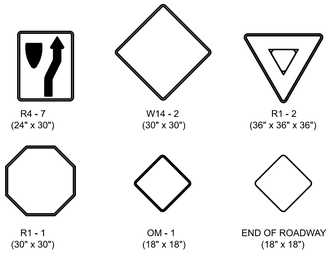
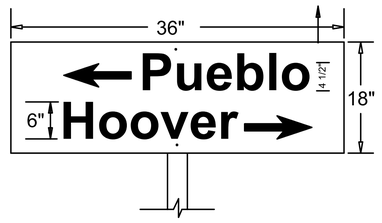
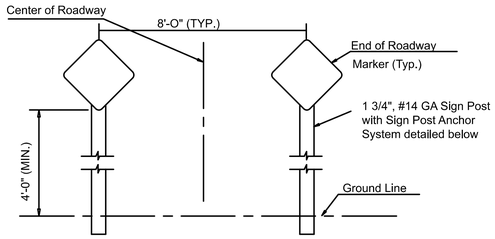




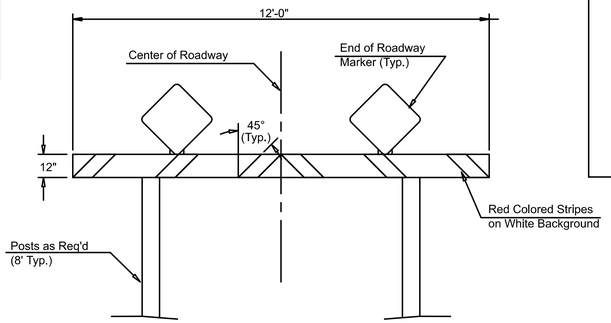
* IN NO CASE SHALL THE SPECIFICATIONS BE LESS THAN REQUIRED BY THE CURRENT MUTCD.



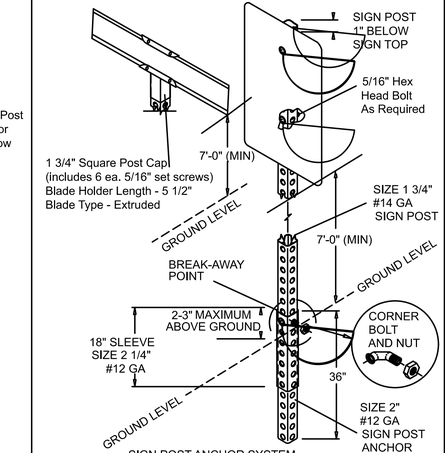
FLAT PLATE STREET NAME SIGN



TYPICAL END OF ROADWAY SIGN MOUNTING INSTALLATION



TYPE I BARRICADE DETAIL W/ E.O.R. MARKERS



SIGN POST ANCHOR SYSTEM

SIGN ASSEMBLY TABLE

STATION	OFFSET	SIGN	QUANTITY*
97+55	23' Lt.	R2-1	1
97+80	23' Rt.	R3-8a	1
101+00	36' Lt.	R3-7R	1
102+88	36' Lt.	R3-7R	1
104+90	36' Lt.	W3-3	1
105+00	24' Rt.	R2-1	1
107+00	24' Rt.	R3-5b	1
110+50	36' Lt.	R3-5b	1
115+75	24' Rt.	R3-5b	1
119+00	36' Lt.	R3-5b	1
123+00	36' Lt.	R2-1	1
123+00	24' Rt.	R3-5b	1
126+50	36' Lt.	R3-5b	1
127+14	78' Lt.	R1-1	1
127+50	36' Rt.	R2-1	1
127+80	80' Lt.	W14-2	1
128+85	0' Rt.	R4-7 & OM-1	2
131+06	51' Rt.	W12-2	1
136+03	48' Rt.	R5-1	1
136+23	64' Rt.	R5-1, R6-1L & R6-1R	3
TOTAL			23

NOTE: REFERENCES BELOW TO "STANDARD SPECIFICATIONS" DENOTE "STANDARD SPECIFICATION FOR STATE ROAD AND BRIDGE CONSTRUCTION EDITION 2015" BY THE KANSAS DEPARTMENT OF TRANSPORTATION.

1. ***FABRICATION AND INSTALLATION OF ALL SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD.***

1a. POST ANCHORS: POSTS SHALL BE ANCHORED WITH A YIELDING BASE POST SUPPORT AS DETAILED.

2. POSTS FOR TRAFFIC CONTROL SIGNS: POSTS SHALL BE GALVANIZED AND CONFORM TO THE REQUIREMENTS OF SUBSECTION 1620 OF THE STANDARD SPECIFICATIONS, EXCEPT THAT ALL POSTS SHALL WEIGH 3 LBS./FT. MINIMUM.

3. POSTS FOR STREET NAME SIGNS (SNS): POSTS SHALL BE 9 FEET LONG, CONSTRUCTED FROM #14 GALVANIZED STEEL PIPE AND SHALL BE 1 3/4" SQUARE WEIGHING A MINIMUM OF 3 LBS/FT. POSTS SHALL BE POSITIONED SO THAT THE BOTTOM BLADE IS 7 FEET ABOVE GRADE.

4. POSTS FOR END OF ROADWAY SIGN TO BE 8' LONG AND INSTALLED A MINIMUM OF 4' FROM ROADWAY TO BOTTOM OF SIGN.

5. SIGN BLANKS FOR TRAFFIC CONTROL SIGNS: SIGN BLANKS SHALL BE FABRICATED FROM 0.080" ALUMINUM ALLOY 6063-T6 CONFORMING TO THE REQUIREMENTS OF SUBSECTION 1627 OF THE STANDARD SPECIFICATIONS.

6. SIGN BLADES FOR STREET NAME SIGNS: EXTRUDED ALUMINUM BLADES SHALL BE ALUMINUM ALLOY CONFORMING TO 6063-T6 OR 5052-H38 (ASTM SPECIFICATION B221, LATEST ISSUE). BLADES SHALL HAVE AN ALODINE OR PHOSPHATE ETCHED FINISH. BLADES SHALL HAVE SQUARE CORNERS AND NO HOLES.
MINIMUM BLADE LENGTH SHALL BE 24". MAXIMUM BLADE LENGTH SHALL BE 48". LENGTH VARIES BY INCREMENTS OF 6".
BLADES BEARING THE STREET NAMES SHALL BE FIRMLY ATTACHED TO THE MOUNTING BRACKETS USING ALLEN-TYPE CONICAL SET SCREWS. THE BLADES SHALL BE ORIENTED PARALLEL TO THE STREET.

7. MOUNTING BRACKETS FOR SIGNS: DIE-CAST ALUMINUM BRACKETS SHALL BE ALUMINUM ALLOY 360 HAVING A TENSILE STRENGTH OF 44,000 PSI. THE BRACKETS SHALL BE SMOOTHLY FINISHED FREE OF PITS, BURRS, AND FLAWS. EACH BRACKET SHALL BE TAPPED AND DRILLED FOR 5/16" ZINC-PLATED ALLEN-TYPE SET SCREWS HAVING SELF-LOCKING SAW-TOOTH ENDS.

8. FASTENERS: ALL STEEL FASTENERS FOR TRAFFIC CONTROL SIGNS SHALL BE GALVANIZED AND SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 1614 OF THE STANDARD SPECIFICATIONS.

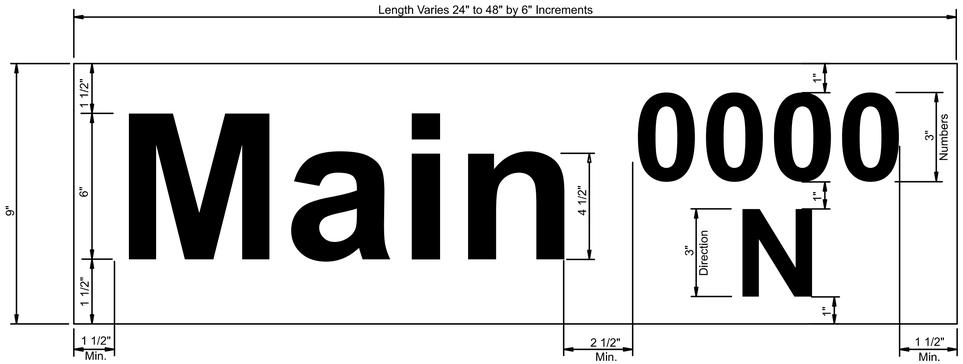
9. REFLECTIVE SHEETING: REFLECTIVE SHEETING SHALL BE A MINIMUM OF HIGH INTENSITY PRISMATIC.

10. PROCESS INK: ALL PROCESS INK SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 2202 OF THE STANDARD SPECIFICATIONS.

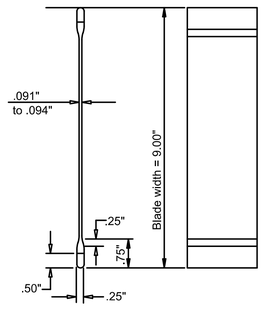
11. DETAILS - SNS: THE REFLECTIVE SHEETING FOR THE 9" STANDARD SIZE SNS IS TO BE THE HIGHWAY GREEN BACKGOUND WITH SILVER-WHITE #2 COPY WITH 6" UPPER CASE AND 4 1/2" LOWER CASE PRIMARY COPY AND SUFFIX COPY. BOTH SERIES "C".
FACES TO TRIM TO A 8 1/2". (SEE DETAIL A.)
THE REFLECTIVE SHEETING FOR THE 9" METRO SIZE SNS IS TO BE THE HIGHWAY GREEN BACKGROUND WITH SILVERWHITE #2 COPY WITH 6" UPPER CASE AND 4 1/2" LOWER CASE PRIMARY COPY AND SUFFIX COPY, BOTH SERIES "C". THE CARDINAL DIRECTION CENTERED DIRECTLY BELOW THE BLOCK NUMBER SHALL BE AN UPPER CASE, 3" SERIES "C" LETTER. FACES TO TRIM TO A 8 1/2" WIDTH. (SEE DETAIL B.)
FOR CUL-DE-SAC STREETS, A 9" METRO SIZE BLADE SHALL BE USED WITH THE BLOCK NUMBERS DISPLAYED BENEATH THE STREET NAME.
IF BLOCK NUMBERS ARE NOT SHOWN ON THE PLANS THE CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEER AT 268-4501 PRIOR TO MANUFACTURING THE SIGN.
SHOP DRAWINGS OF LAYOUT FOR SNS SHALL BE SUBMITTED TO THE TRAFFIC ENGINEERING DIVISION OF THE CITY OF WICHITA FOR APPROVAL PRIOR TO FABRICATION. THE FINISHED SIGNS AS SUPPLIED SHALL BE OF GOOD APPEARANCE, FREE FROM RAGGED EDGES, CRACKS SCALES OR BLISTERS AND SHALL BE CLEAN-CUT. SIGNS SHALL BE PACKED IN SUCH MANNER AS TO PREVENT DAMAGE OR DEFACEMENT DURING SHIPMENT OR STORAGE.

12. PERMANENT TRAFFIC CONTROL AND SNS: PERMANENT TRAFFIC CONTROL AND SNS SHALL BE MEASURED AND PAID FOR AT THE LUMP SUM PRICE FOR SIGNING. THE PAYMENT AS SET FORTH ABOVE SHALL BE CONSIDERED FULL COMPENSATION FOR ALL EXCAVATION, BACKFILLING. POSTS, ANCHORS, FASTENERS, MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK.

DETAIL A
9" STANDARD



DETAIL B
9" METRO



STREET NAME SIGN
BLADE DETAILS

STREET NAME	NO. BLADES REQ'D	
	9" STD.	9" METRO
West St	1	
MacArthur	1	
West St 3500 S		1
Bolin 4000 W		1

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SIGN DETAILS

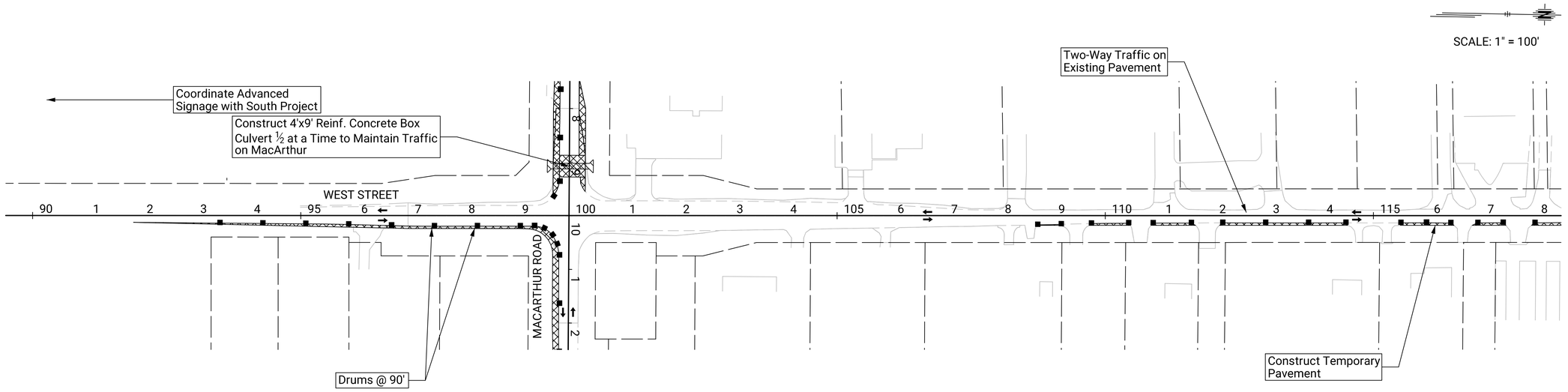
TRAFFIC ENGINEER: MIKE ARMOUR, P.E.
APP'D 01/27/22

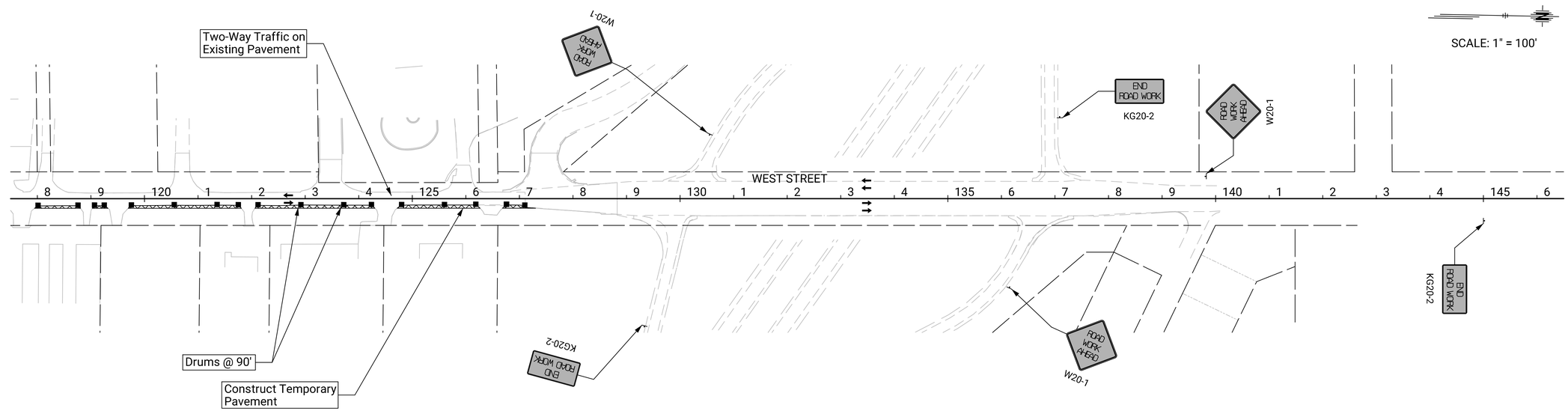
PROJECT NUMBER	OCA NUMBER	DATE

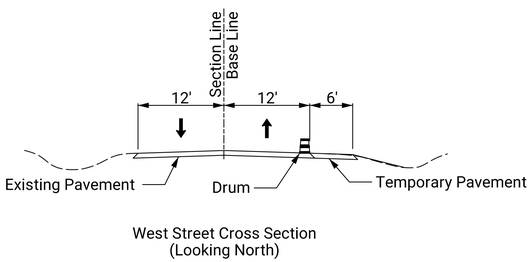
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET 81 of 128

TR-112







West Street Cross Section
(Looking North)

PAVEMENT QUANTITIES FOR PHASE 1

6" Temporary A.C. Pavement - 2,370 S.Y. w/ 5" Crushed Rock Base
FOR INFORMATION ONLY. All Costs Associated with this work shall be SUBSIDIARY to the Lump Sum Bid Item "Traffic Control".

PHASE 1

Construct temporary pavement on the East side of West Street from South of MacArthur Road to I-235 and both side of MacArthur Road East of West Street. Two-way traffic on West Street and MacArthur Road is to be carried on existing pavement with no change in configuration.

LEGEND

- Current Phase Construction
- Current Phase Temporary Pavement
- Previous Phase Temporary Pavement
- Reflectorized Drum (40' Spacing)
- Type III Barricade
- Temporary Concrete Safety Barrier
- Traffic Flow Pattern

CITY OF WICHITA

WSP

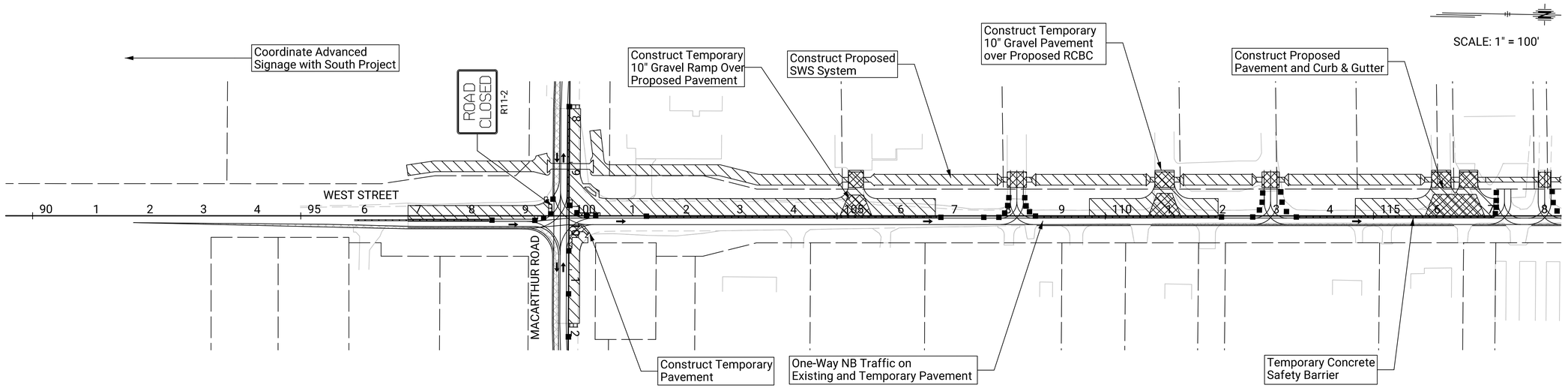
WEST STREET CONSTRUCTION SEQUENCE PLAN - PHASE 1

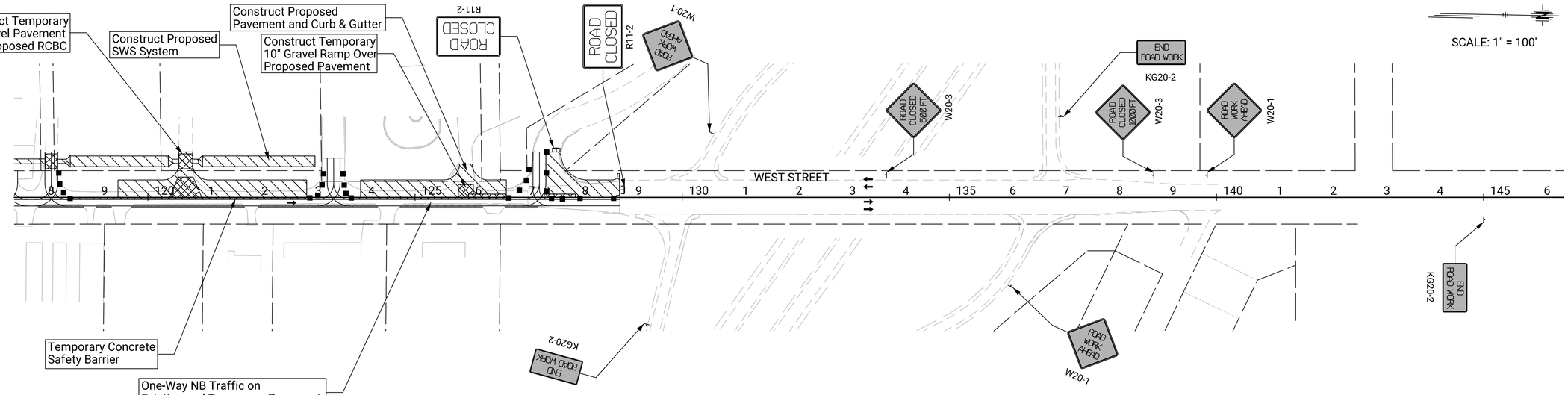
WEST STREET - I-235 TO MACARTHUR

REVISIONS			
NO.	DATE	DESCRIPTION	

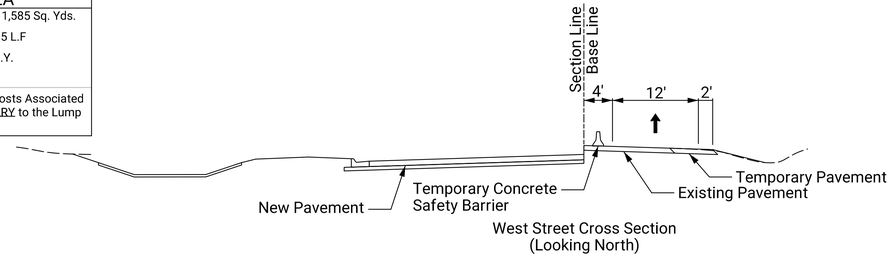
PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
82
SHEET 82 OF 128





PAVEMENT QUANTITIES FOR PHASE 2A
10" Temporary Gravel Pavement - 1,585 Sq. Yds.
Temporary Concrete Barrier - 2,215 L.F
6" Temporary.A.C. Pavement 80 S.Y.
w/ 5" Crushed Rock Base
FOR INFORMATION ONLY. All Costs Associated with this work shall be SUBSIDIARY to the Lump Sum Bid Item "Traffic Control".



West Street Cross Section
(Looking North)

PHASE 2A

Construct SWS system and new pavement on the West half of West Street from South of MacArthur Road to I-235 and the North side of MacArthur Road from 8+00 to 10+00. One -way northbound traffic on West Street and two-way traffic on MacArthur Road is to be carried on existing and temporary pavement.

LEGEND

- Current Phase Construction
- Current Phase Temporary Pavement
- Previous Phase Temporary Pavement
- Reflectorized Drum (40' Spacing)
- Type III Barricade
- Temporary Concrete Safety Barrier
- Traffic Flow Pattern

CITY OF WICHITA

WSP

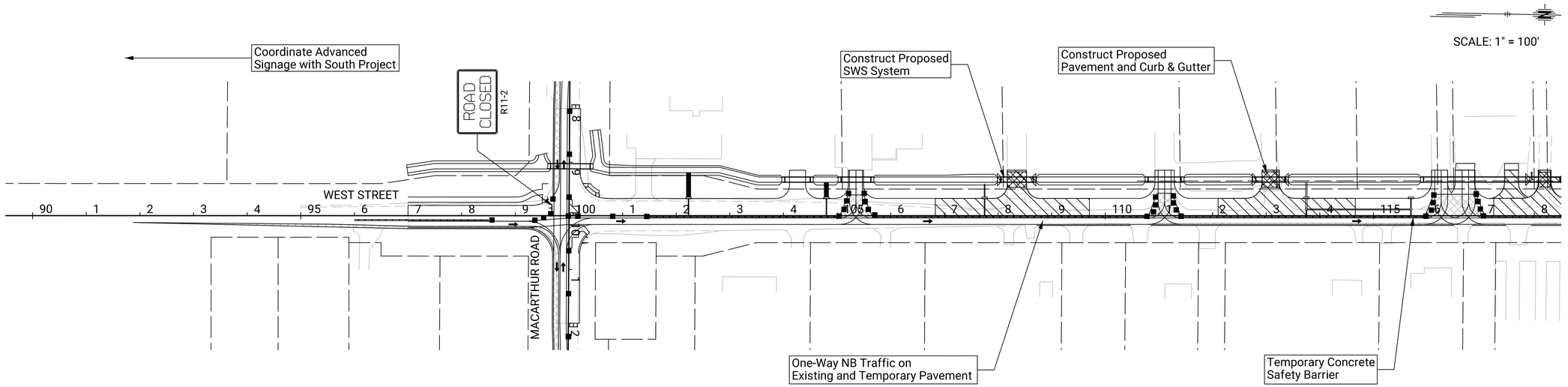
WEST STREET CONSTRUCTION SEQUENCE PLAN - PHASE 2A

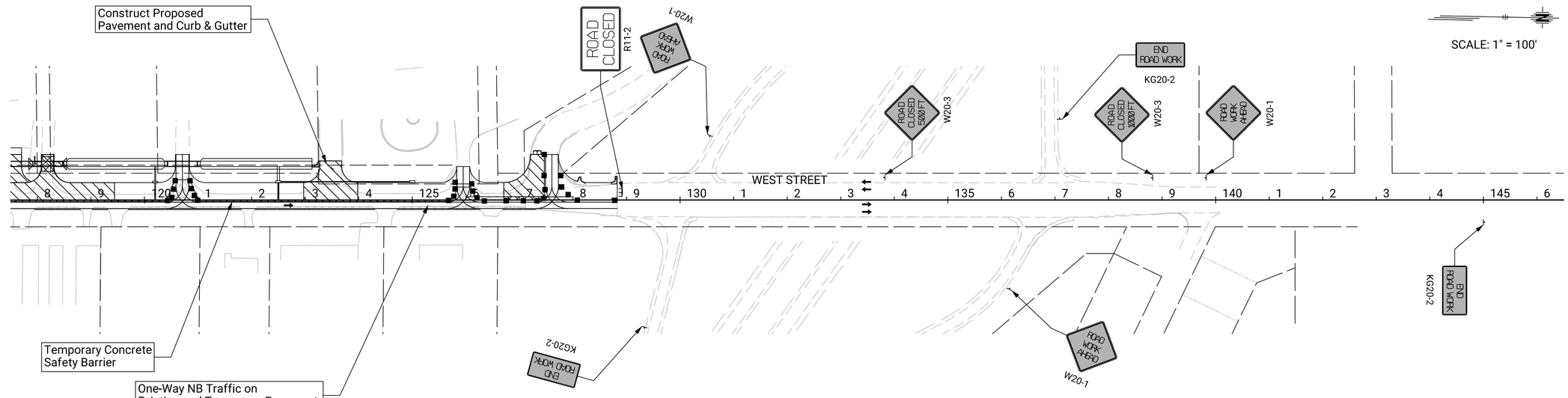
WEST STREET - I-235 TO MACARTHUR

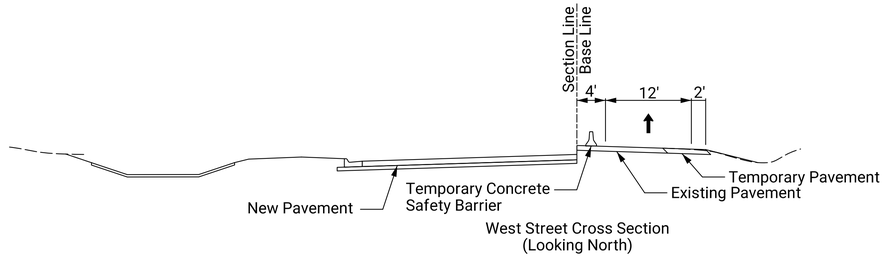
REVISIONS		
NO.	DATE	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
83
SHEET 83 OF 128







PHASE 2B

Construct SWS system and new pavement on the West half of West Street from North of MacArthur Road to I-235. One -way northbound traffic on West Street and two-way traffic on MacArthur Road is to be carried on existing and temporary pavement.

LEGEND

- Current Phase Construction
- Current Phase Temporary Pavement
- Previous Phase Temporary Pavement
- Reflectorized Drum (40' Spacing)
- Type III Barricade
- Temporary Concrete Safety Barrier
- Traffic Flow Pattern

CITY OF WICHITA

wsp

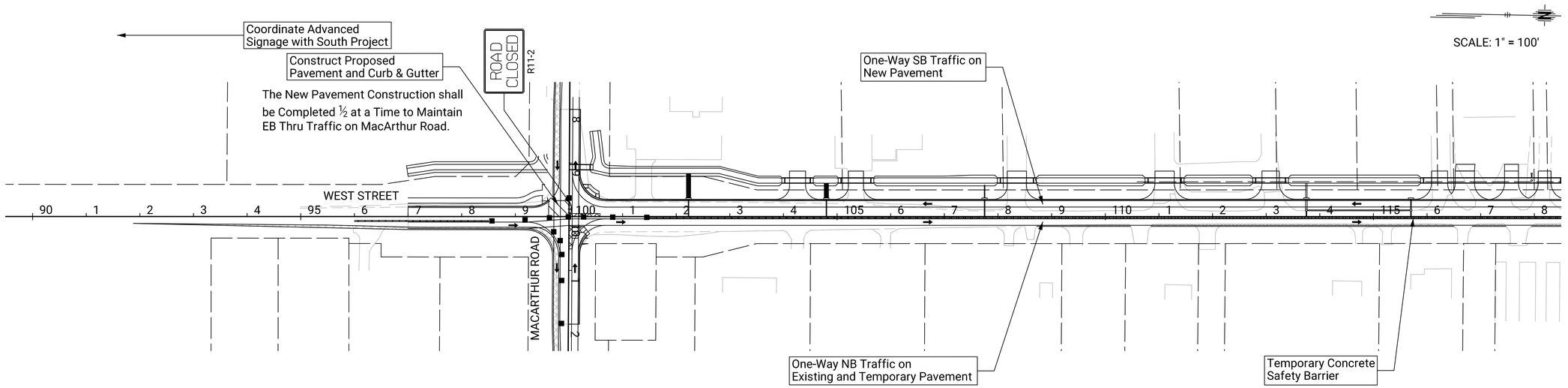
WEST STREET CONSTRUCTION SEQUENCE PLAN - PHASE 2B

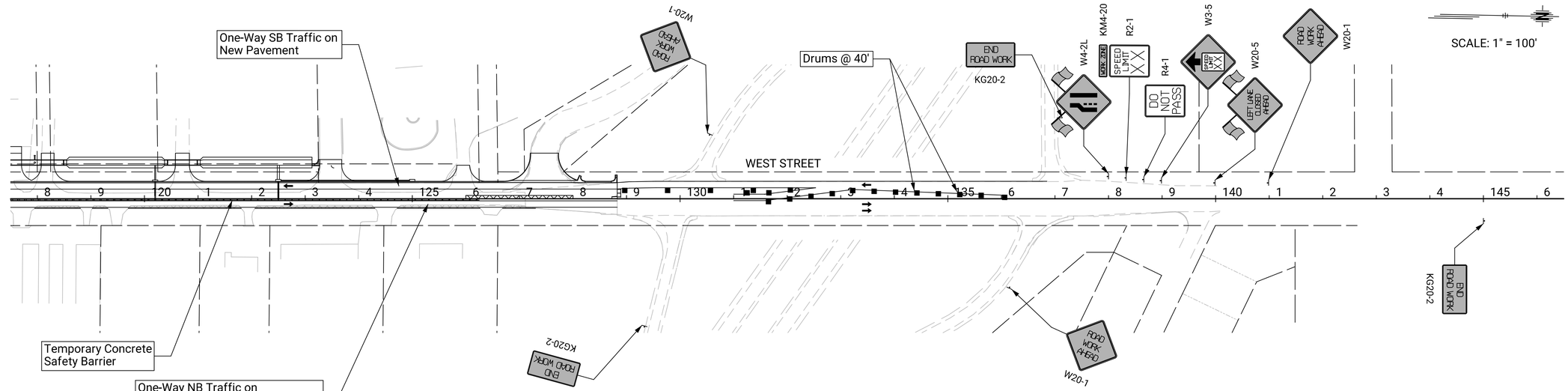
WEST STREET - I-235 TO MACARTHUR

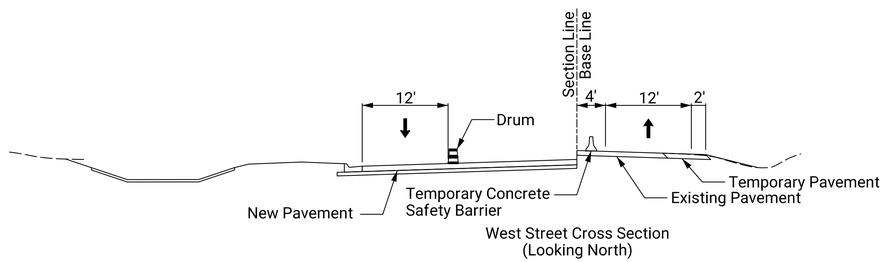
REVISIONS		
NO.	DATE	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
84
SHEET 84 OF 128







PHASE 2C

Construct SWS system and new pavement on the West half of West Street from North of MacArthur Road to I-235. One -way northbound traffic on West Street and two-way traffic on MacArthur Road is to be carried on existing and temporary pavement.

LEGEND

- Current Phase Construction
- Current Phase Temporary Pavement
- Previous Phase Temporary Pavement
- Reflectorized Drum (40' Spacing)
- Type III Barricade
- Temporary Concrete Safety Barrier
- Traffic Flow Pattern

CITY OF WICHITA

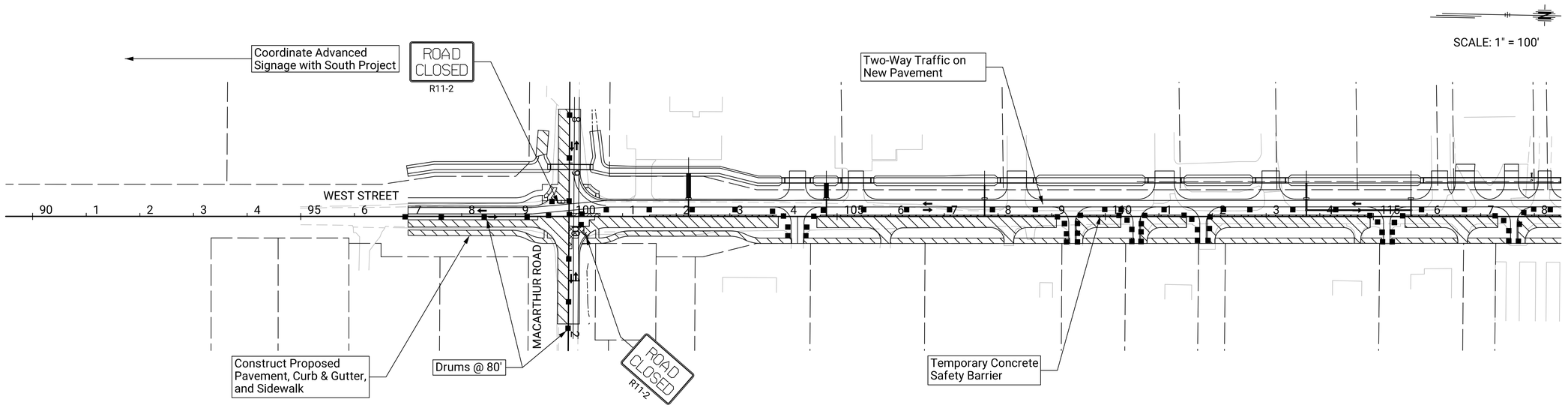
WSP

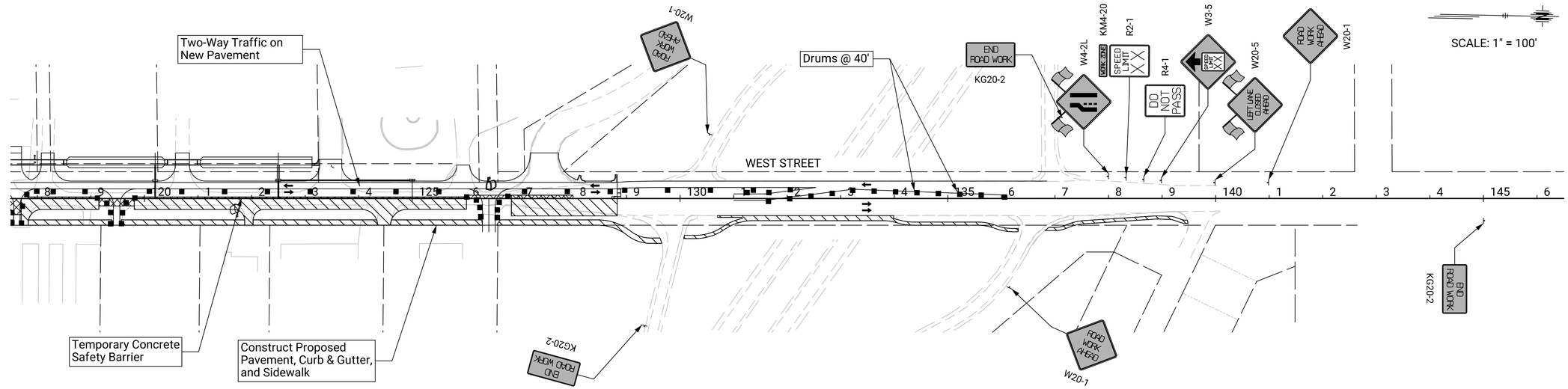
WEST STREET - I-235 TO MACARTHUR
WEST STREET CONSTRUCTION SEQUENCE PLAN - PHASE 2C

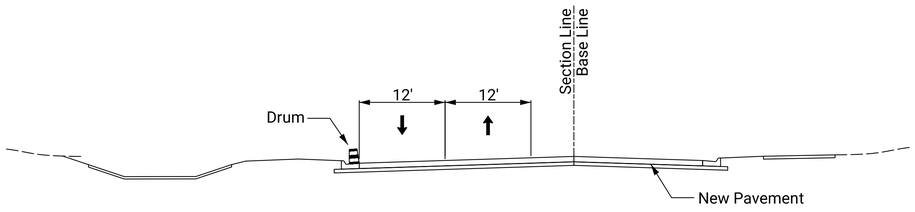
NO.	DATE	REVISIONS DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
85
SHEET 85 OF 128







West Street Cross Section
(Looking North)

PHASE 3A

Construct SWS system and new pavement on the East half of West Street from South of MacArthur Road to I-235. Two-way traffic on West Street and two-way traffic on MacArthur Road is to be carried on new pavement.

LEGEND

- Current Phase Construction
- Current Phase Temporary Pavement
- Previous Phase Temporary Pavement
- Reflectorized Drum (40' Spacing)
- Type III Barricade
- Temporary Concrete Safety Barrier
- Traffic Flow Pattern

CITY OF WICHITA

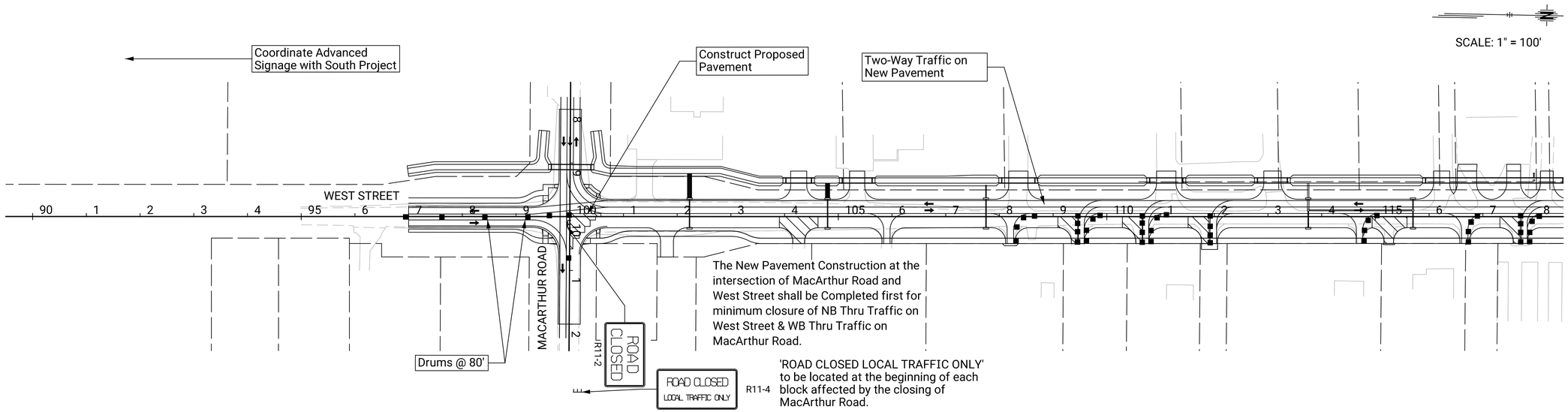
WSP

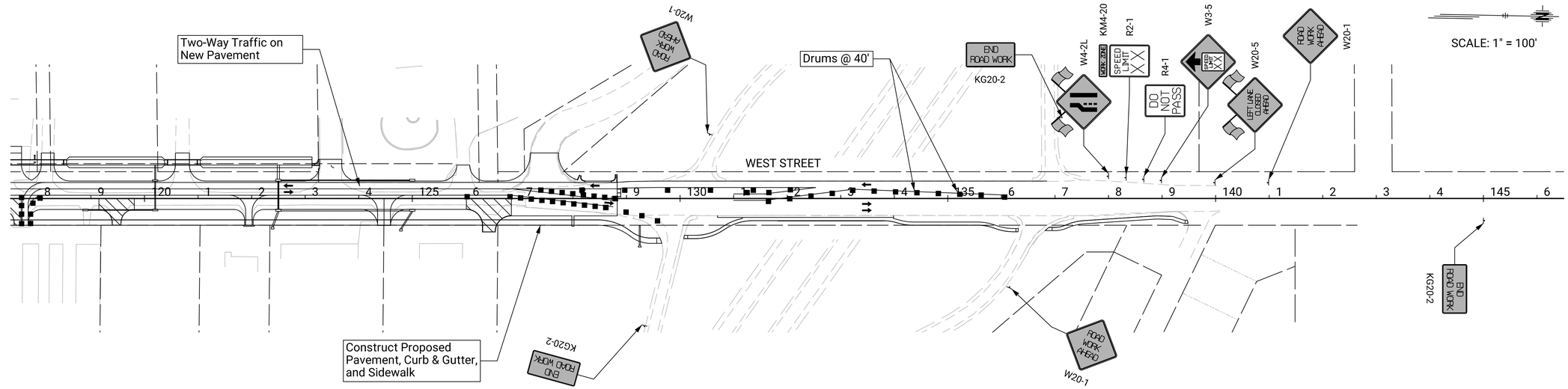
WEST STREET - I-235 TO MACARTHUR
WEST STREET CONSTRUCTION SEQUENCE PLAN - PHASE 3A

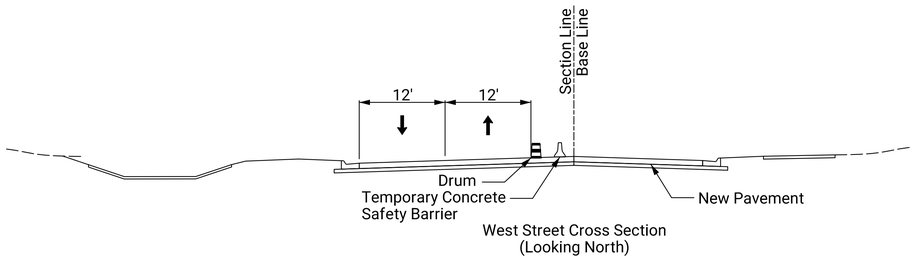
REVISIONS	DESCRIPTION	DATE	NO.

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
86
SHEET 86 OF 128







PHASE 3B

Construct new pavement on the East half of West Street from North of MacArthur Road to I-235. Two-way traffic on the West half of West Street and one-way Eastbound traffic on MacArthur Road is to be carried on new pavement.

LEGEND

- Current Phase Construction
- Current Phase Temporary Pavement
- Previous Phase Temporary Pavement
- Reflectorized Drum (40' Spacing)
- Type III Barricade
- Temporary Concrete Safety Barrier
- Traffic Flow Pattern

CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR
WEST STREET CONSTRUCTION SEQUENCE PLAN - PHASE 3B

NO.	DATE	REVISIONS DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
87
SHEET 87 OF 128

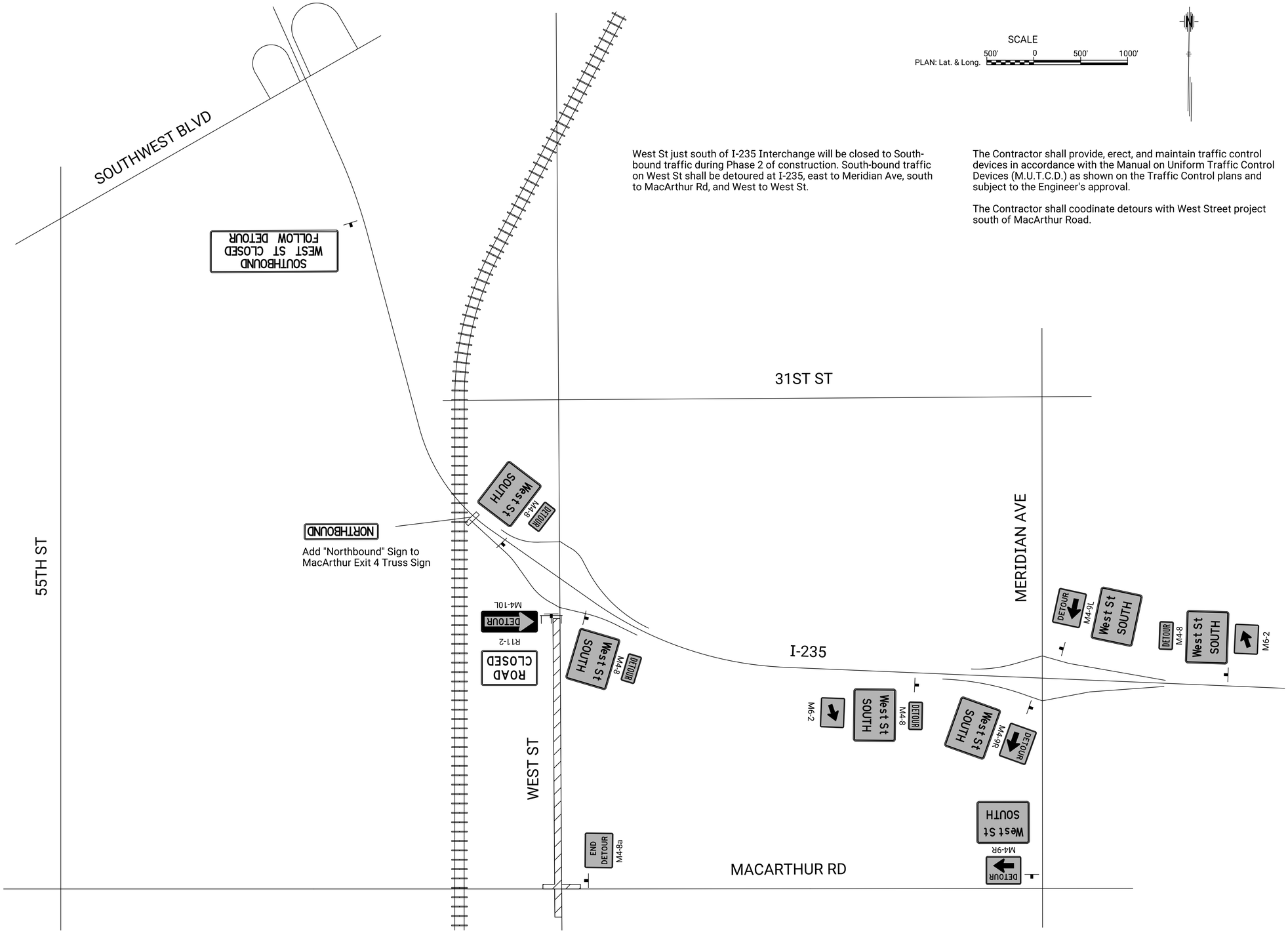
SCALE
PLAN: Lat. & Long. 500' 0 500' 1000'

N

West St just south of I-235 Interchange will be closed to South-bound traffic during Phase 2 of construction. South-bound traffic on West St shall be detoured at I-235, east to Meridian Ave, south to MacArthur Rd, and West to West St.

The Contractor shall provide, erect, and maintain traffic control devices in accordance with the Manual on Uniform Traffic Control Devices (M.U.T.C.D.) as shown on the Traffic Control plans and subject to the Engineer's approval.

The Contractor shall coodinate detours with West Street project south of MacArthur Road.



CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

WEST STREET DETOUR PLAN PHASE 2

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
88
SHEET 88 OF 128

10/29/2024 7:57:08 PM File : c:\bms\wsp-pb-us-pw-02\tyler.voth@wsp.com\d0412832\30901193DET01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	89	128

1) Design Speed: Those items delegated to temporary traffic control should be designed and installed using the posted/legal speed of the roadway prior to work starting.

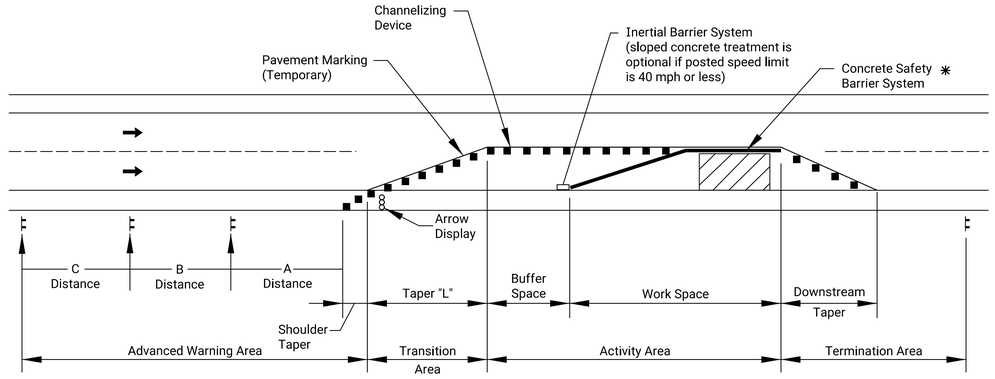
2) Minimum Lane Width: Lane widths shall be a minimum of 11' (measured between centerlines of pavement markings) or as shown on the plans, or as directed by the engineer. A lane width less than 11' may require restricted roadway width signing.

3) Consideration should be made to separate pedestrian and, if needed, bicycle movements from both work site activity and vehicular traffic. Unless a reasonable safe route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway. In urban and suburban areas with high vehicular traffic volumes, these signs should be placed at intersections (rather than midblock locations) so that pedestrians are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing.

4) 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 pedestrian facility.

5) When the driving surface open to traffic is milled or is a temporary surface made of loose material, or when directed by the engineer a W8-15 (Grooved Pavement) or W8-7 (Loose Gravel) sign shall be used on mainline approaches. This sign should be placed a "C" distance after the W20-1 (Road Work Ahead) sign. A W8-15p motorcycle plaque shall be used to supplement the W8-15 or W8-7 signs. All signs shall be displayed as long as the condition is present.

6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 785-296-1183.



TYPICAL WORK ZONE COMPONENTS

✳ When concrete barrier system is used, portable channelizing devices are not needed along the tangent barrier section.

Minimum advance warning sign spacing (in feet):

SPEED (MPH) ✳	*A*	*B*	*C*
URBAN (40 MPH OR LOWER)	*100*	*100*	*100*
URBAN (45 MPH OR HIGHER)	*350*	*350*	*350*
RURAL (55 MPH OR LOWER)	*500*	*500*	*500*
RURAL (60 MPH OR HIGHER)	*750*	*750*	*750*
EXPRESSWAY/FREEWAY	*1000*	*1500*	*2640*

✳ Posted speed prior to work starting

The minimum spacing between signs shall be no less than 100', unless directed by the engineer.

The spacing between any signs may be increased beyond the minimum values in the table above as approved by the engineer in order to maximize visibility.

Taper Formulas:

L = WS for speeds of 45 MPH or more

$L = WS^2/60$ for speeds of 40 MPH or less

Where: L = Minimum length of taper in feet
S = Numericial value of posted speed prior to work starting in MPH
W = Width in offset feet

Shifting Taper=1/2 L
Shoulder Taper=1/3 L

Channelizer Placement:

(1) The spacing between devices in transition area (taper) should not exceed a distance in feet equal to 1/2 the posted speed limit in mph prior to work starting.

(2) The spacing between devices in the advanced warning area and the activity area should not exceed a distance in feet equal to two times the posted speed limit in mph prior to work starting.

(3) Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.

(4) Place directional indicator barricades in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.

(5) Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.

Buffer Space

SPEED (MPH) ✳	*20*	*25*	*30*	*35*	*40*	*45*	*50*	*55*	*60*	*65*	*70*	*75*
LENGTH (ft)	*115*	*155*	*200*	*250*	*305*	*360*	*425*	*495*	*570*	*645*	*730*	*820*

✳ Posted speed prior to work starting

Neither work activity nor storage of equipment, vehicles, or material should occur in the buffer space. When a protection vehicle is placed in advance of the work space, only the space upstream of the vehicle constitutes the buffer space.

If temporary concrete safety barrier system is used to separate approaching traffic from the work space, the barrier system shall be considered part of the activity area. A full lane width should be available throughout the length of the buffer space. See typical work zone components above.

NO.	DATE	REVISIONS	BY	APP'D
3				
2	03/13/18	W8-15p usage changed to Shall	R.W.B.	E.G.K.
1	08/18/15	Channelizer spacing info	R.W.B.	K.E.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL GENERAL NOTES

TE700

FHWA APPROVAL	03/13/18	APP'D Eric Kocher	
DESIGNED B.A.H.	DETAILED R.W.B	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

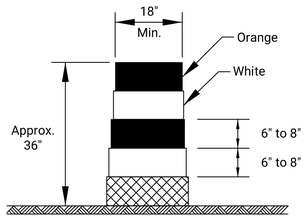
KDOT Graphics Certified 03-13-2018

Sh. No. 89

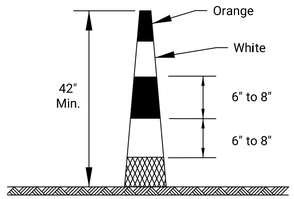
KDOT Graphics Certified

Plotted by : USTV690349 29-OCT-2024 09:47
File : 309011193TE700.dgn

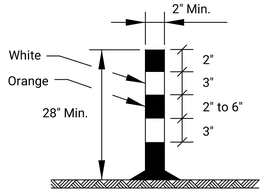
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	90	128



DRUM

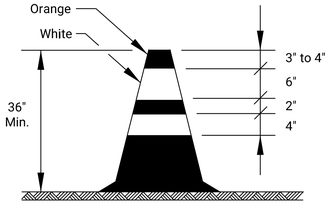


CONICAL
DELINEATOR

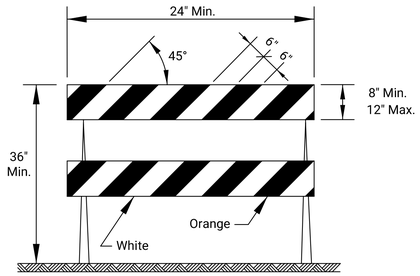


TUBULAR MARKER

Striping as shown for up to 42".

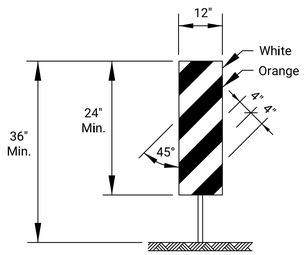


TRAFFIC CONE



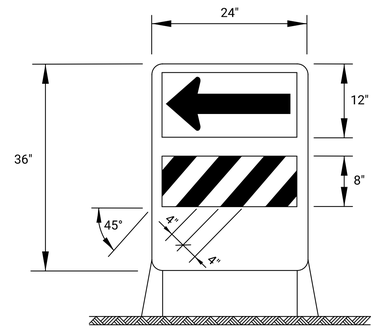
TYPE 2 BARRICADE

For rails less than 36" long, 4" wide stripes may be used. All stripes shall slope downward to the traffic side for channelization.



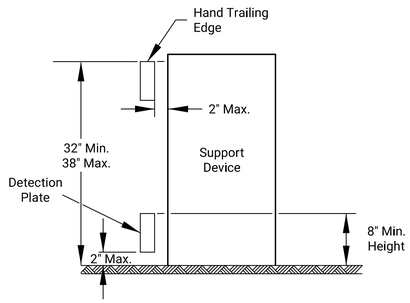
VERTICAL PANEL

The stripes shall slope downward to the traffic side for channelization.



DIRECTION INDICATOR BARRICADE

The stripes shall slope downward in the direction traffic is to pass. The direction indicator barricade shall be used in series to direct the motorist into the intended lane of travel.



PEDESTRIAN CHANNELIZER

1. Support device shall not project beyond the detection plate into the pathway.
2. Hand trailing edges and detection plates are optional for continuous walls.
3. Interconnect pedestrian channelizers to prevent displacement and to provide continuous guidance through or around work.
4. Alternate pathways shall be firm, stable, and slip resistant.
5. Treat height differentials > 1/2" in the surfaces of alternate paths with a firm, stable, and slip resistant temporary ramp having a slope of 12:1 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

Item	Location	Cross-overs	Shoofly Diversions	Tangents	Tapers	Ramps	Head to Head	Object Identifier	Lead-in Devices	Gores
Portable										
	Drums	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Conical Delineators	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Vertical Panels	(2)	(2)	(2)	(2)	(2)	(1,2)	Yes	(2)	(2)
	Direction Indicator Barricade	No	No	No	Yes	No	No	No	No	No
	Type 2 Barricade	(2)	(2)	(2)	(2)	No	No	Yes	No	No
	Traffic Cones	No	No	(4)	(4)	(4)	No	(4)	(4)	(4)
Fixed										
	Tubular Markers	(3)	(3)	(3)	No	(3)	Yes	No	Yes	Yes
	Vertical Panels	(3)	(3)	(3)	(3)	(3)	(3)	Yes	(2,3)	(2)

(1) Not allowed on centerline delineation along freeways or expressways.
(2) The stripes shall slope downward to the traffic side for channelization.
(3) May be used upon the approval of the engineer.
(4) Daytime operations only.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
CHANNELIZING DEVICES

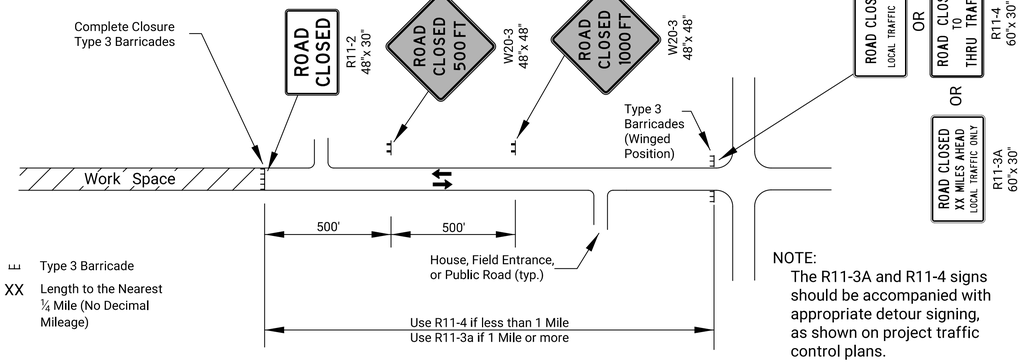
TE702

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

Plotted by : USTV690349 29-OCT-2024 09:50
File : 30901193TE702.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	91	128

Note: Signs shown for one approach to work zone.



NOTE:
The R11-3A and R11-4 signs should be accompanied with appropriate detour signing, as shown on project traffic control plans.

FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE (MAINLINE OR SIDE ROAD)

Note: Sign shown for one approach to intersection (work zone).

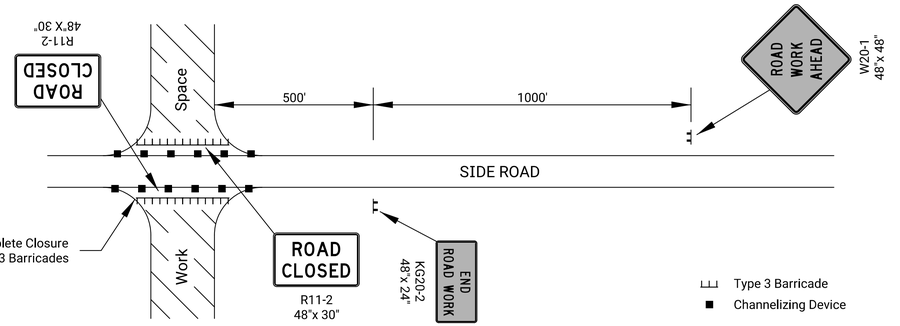


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

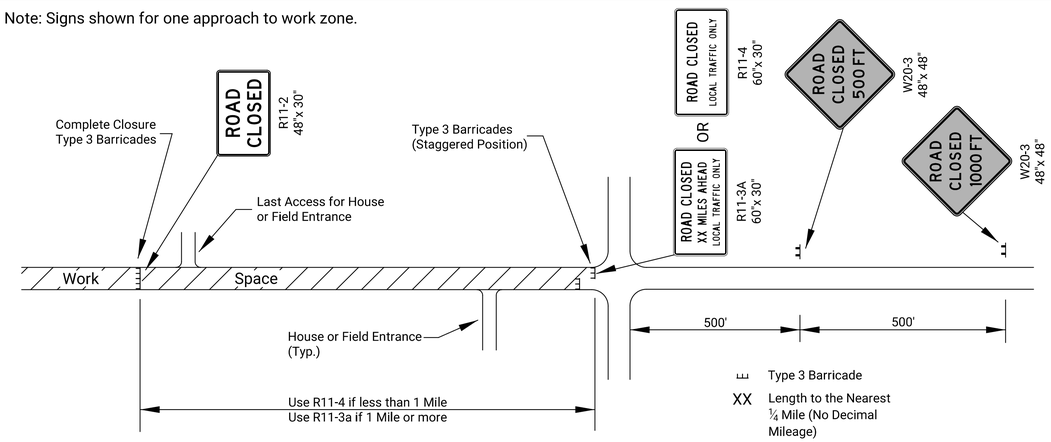


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS

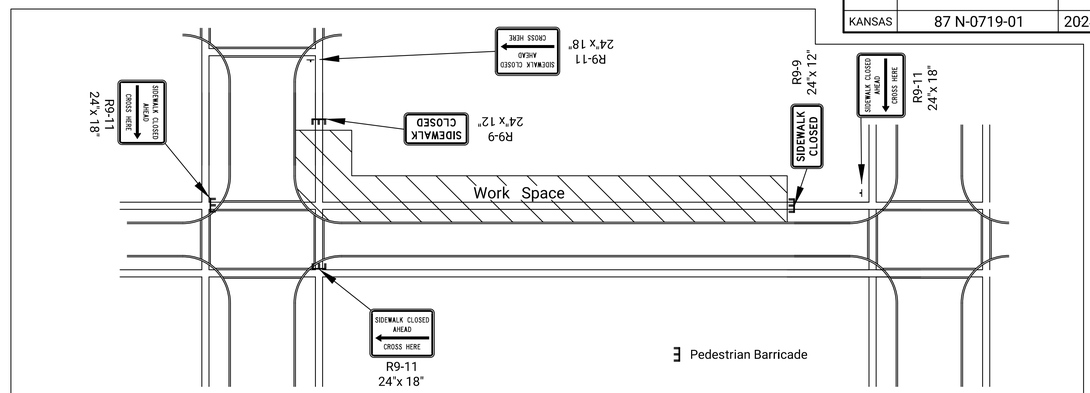
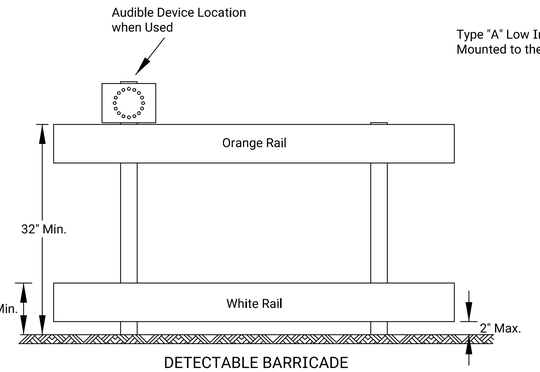
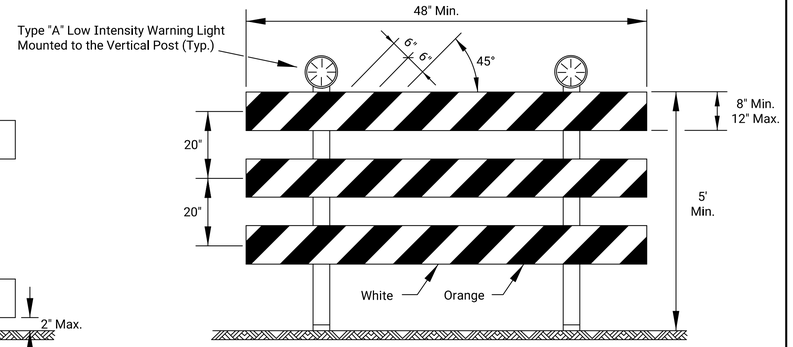


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE



DETECTABLE BARRICADE

1. Support device shall not project beyond the detection plate into the pathway.
2. Barricades shall be used to close the entire width of the pathway.
3. Do not use warning lights on pedestrian barricades.
4. Do not use warning lights on audible devices.



TYPE 3 BARRICADE WITH LIGHTS

Approved signs mounted on Type 3 barricades should not cover more than 50% of the top two rails or 33% of the total area of the three rails.

When barricades are placed end-to-end or staggered, a Type "A" low intensity warning light shall be mounted to the vertical post near each outside corner of the end barricades.

ROAD CLOSED GENERAL NOTES

As shown in Figure 1, at the point where thru traffic must detour and local traffic can proceed to the location where the roadway is completely closed, the R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) or R11-4 (ROAD CLOSED LOCAL TRAFFIC ONLY or ROAD CLOSED TO THRU TRAFFIC) sign shall be used with Type 3 barricades (winged position), placed on the shoulders of roadway.

As shown in Figure 3, when local traffic must be allowed access into the work zone, Type 3 barricades shall be longitudinally staggered to maintain the appearance of a closed roadway. A second line of end-to-end Type 3 barricades shall be placed just beyond the last access point in the work zone, to completely close the roadway.

The R11-4 (ROAD CLOSED TO THRU TRAFFIC or ROAD CLOSED LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is less than 1 mile.

The R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is 1 mile or greater.

The words "BRIDGE OUT" (or BRIDGE CLOSED) may be substituted for the words "ROAD CLOSED" on the R11-3a or R11-4 sign where applicable.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CLOSURES

TE704

FHWA APPROVAL			06-01-15	APP'D.		Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED	
DESIGN CK.		DETAIL CK.		QUAN.CK.		TRACE CK.	

Sh. No. 91

Plotted by : USTV690349 29-OCT-2024 09:54
File : 30901193TE704.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	$PROJ#	2024	92	128

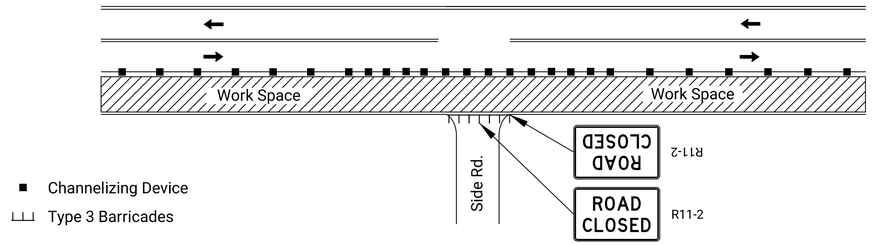


FIGURE 1: SIDE ROAD OR ENTRANCE CLOSED THROUGH WORK AREA

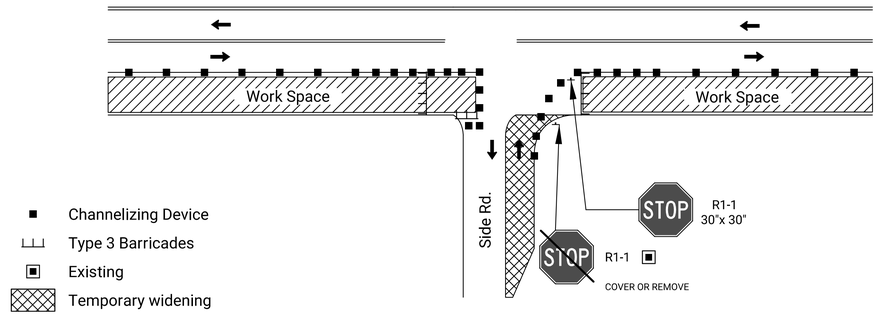


FIGURE 4: SIDE ROAD OR ENTRANCE CONSTRUCTED HALF AT A TIME: TWO WAY TRAFFIC REQUIRED

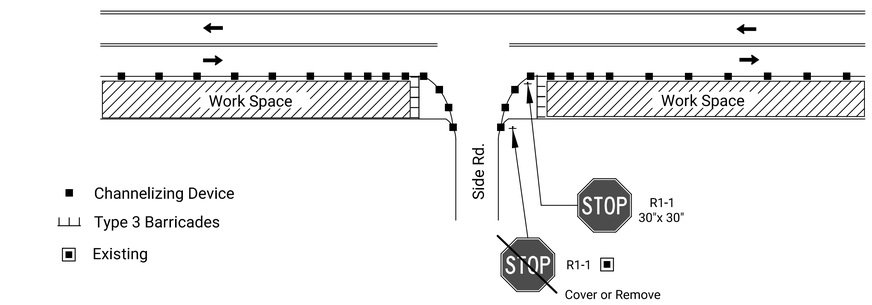


FIGURE 2: SIDE ROAD OR ENTRANCE OPEN THROUGH WORK AREA

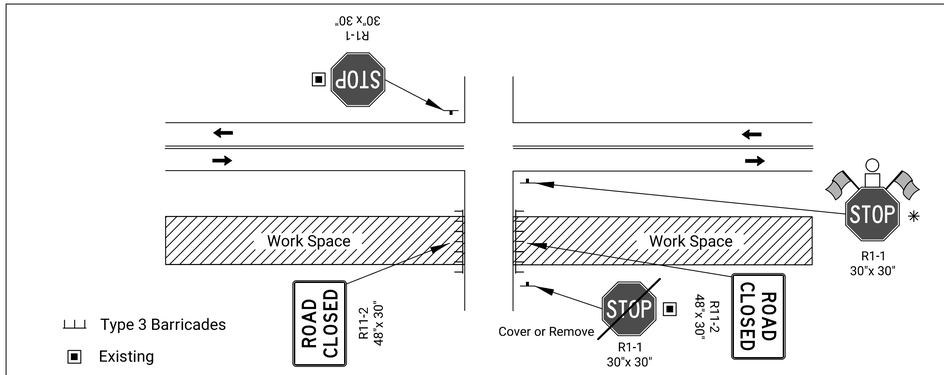


FIGURE 5: SIDE ROAD OPEN THROUGH WORK AREA ON DIVIDED ROADWAY

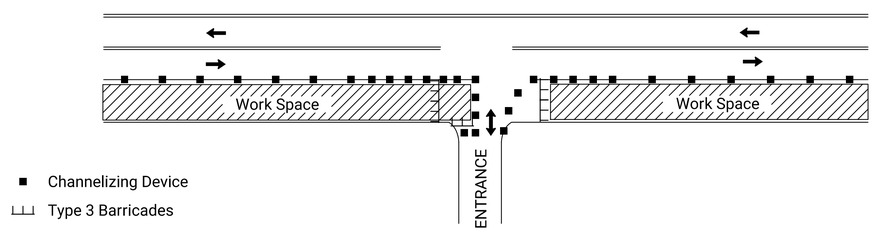


FIGURE 3: LOW VOLUME ENTRANCE CONTRUCTED HALF AT A TIME

Note: Consider large vehicles making right turns into and out of entrance and use figure 4 as needed

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
ACCESS THROUGH THE WORK AREA

TE705

FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	R.W.B.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

Plotted by : USTV690349 29-OCT-2024 09:59
File : 30901193TE705.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	93	128

SIGN LAYOUT INFORMATION

KG20-2

Std. Size Expwy/Freeway
6" C
48"x 24"

KG20-5

Std. Size Expwy/Freeway
6" C
48"x 24"

KM4-20

Std. Size: 3" C, 24"x 6"
Expwy/Freeway: 6" C, 48"x 12"

W7-3a

Mileage to be Determined by the Engineer.

W8-15

Std. Size Expwy/Freeway
8" D
48"x 48"

W8-7

Std. Size Expwy/Freeway
8" D
48"x 48"

W8-15p

Std. Size Expwy/Freeway
30"x 24"

W8-17

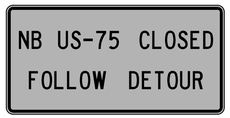
Std. Size Expwy/Freeway
48"x 48"

W8-11

Std. Size Expwy/Freeway
8" D
48"x 48"

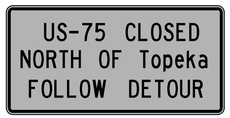
W8-17P
(Optional)

Std. Size Expwy/Freeway
30"x 24"



SP-01
(Special Sign)

Std. Size: 6" C
Expwy/Freeway: 10" D

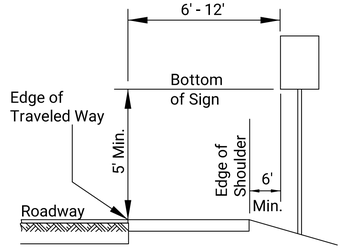


SP-02
(Special Sign)

Std. Size
Uppercase: 6" C
Lowercase: 4.5" C

Expwy/Freeway
Uppercase: 10" D
Lowercase: 8" D

All city names and street names on special signs and destination signs must have upper and lower case letters.

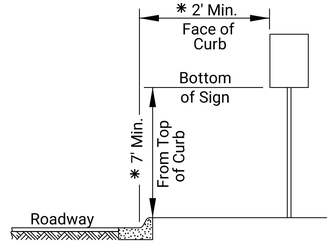


RURAL

1) Ground-mounted signs shall be mounted at a minimum height of 5' measured from the bottom of sign to the near edge of the pavement.

2) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

3) The height of the secondary sign mounted below another sign may be 4' measured from the bottom of the sign to the near edge of the pavement. Signs shall not overlap each other.



URBAN

1) Signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.

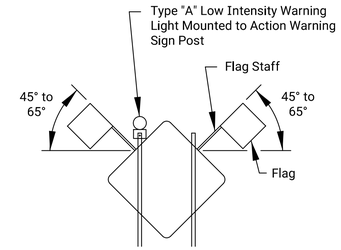
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

3) Signs mounted lower than 7' should not project more than 4" into pedestrian facilities.

4) The height from of the secondary sign mounted below another sign may be 6' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.

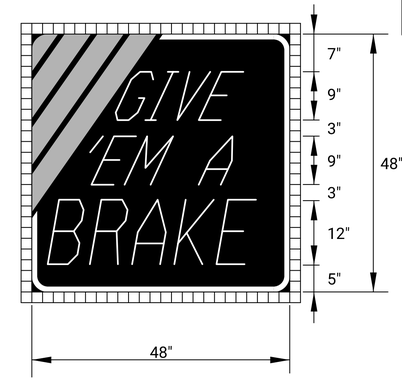
5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

✱ 6) Pedestrian detour signing shall be a minimum of 2' measured from the top of the pedestrian pathway to the bottom of the sign and shall not protrude into the walkway nor shall it project beyond the back of curb.



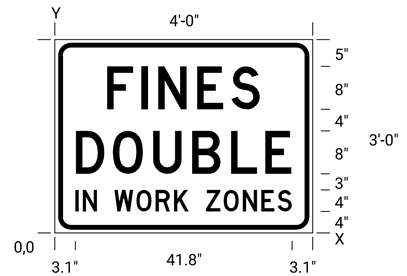
When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

In the case of hitting rock when driving posts
1. Shift the sign location. Do not violate minimum sign spacing.
2. With the engineer's approval, use acceptable alternative sign stands.



KI-104a

Sign Number	GIVE EM A BRAKE
Width x Height	4'-0" x 4'-0"
Border Width	1.0"
Corner Radius	4.0"
Stripe Width	3.0"
Mounting	Ground
Background	Type: Non-Reflective
	Color: Black
Legend/Border	Type: Reflective
	Color: White
Legend Font	Dutch 801 Roman SWC 25 Degree Slant
Stripes	Type: Reflective
	Color: Orange



KI-105a

Sign Number	FINES DOUBLE
Width x Height	4'-0" x 3'-0"
Border Width	0.9"
Corner Radius	3.0"
Mounting	Ground
Background	Type: Reflective
	Color: White
Legend/Border	Type: Non-Reflective
	Color: Black

Dimensions in inches — Spacings are to start of next letter

Y FONT	LETTER SPACINGS															HT LEN
23.0 D	X	F	I	N	E	S	X									8.0
	9.7	6.4	3.2	7.3	6.4	5.4	9.7									28.6
11.0 D	X	D	O	U	B	L	E	X								8.0
	3.9	6.9	7.5	7.3	7.3	6.4	4.9	3.9								40.3
4.0 D	X	I	N	X	W	O	R	K	X	Z	O	N	E	S	X	4.0
	3.1	1.6	2.7	3.2	4.3	3.8	3.6	2.8	3.2	3.4	3.8	3.6	3.2	2.7	3.1	41.8

Notes:

Typically, there are two sets of informational signs installed per project: one for each direction of traffic.

Install signs a minimum of 500' in advance of the road work ahead sign. The engineer may designate a more appropriate location if conditions dictate.

The informational signs are not to interfere with the traffic control signs for the project.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGN INFORMATION

TE710

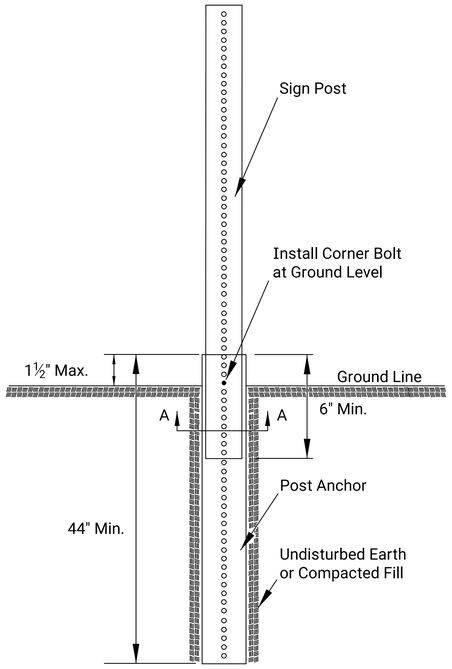
FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	R.W.B.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

Sh. No. 93

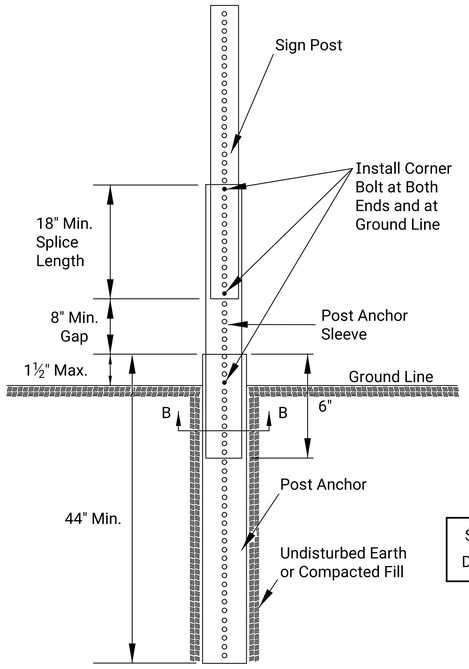
Plotted by : USTV690349 29-OCT-2024 10:01
File : 309011931E710.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	94	128

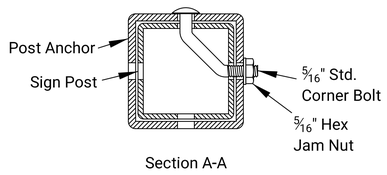
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP



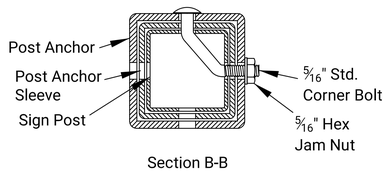
P.S.S.T. Detail



Telescoping P.S.S.T. Detail



Section A-A

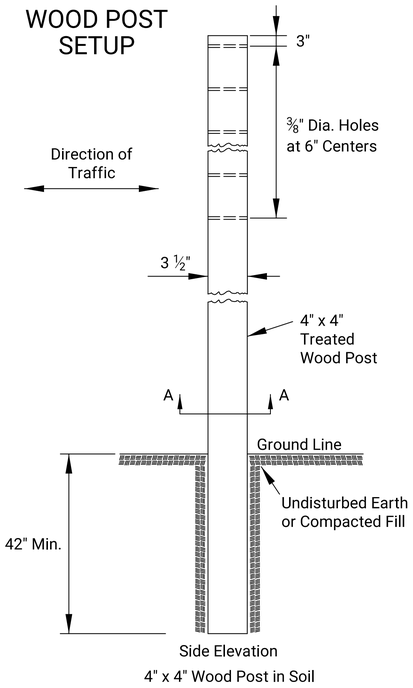


Section B-B

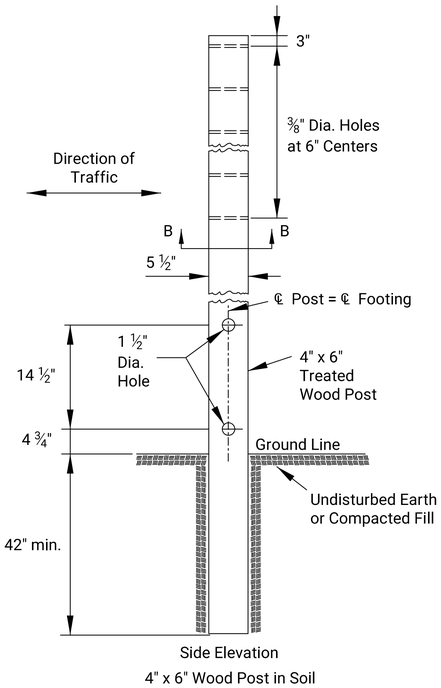
Details for 2", 2 ¼", or 2 ½" sign posts

Place bolts in the same corner along each sign post.

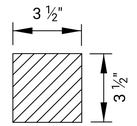
WOOD POST SETUP



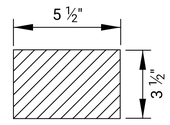
Side Elevation
4" x 4" Wood Post in Soil



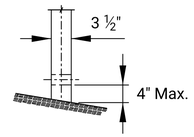
Side Elevation
4" x 6" Wood Post in Soil



Section A-A



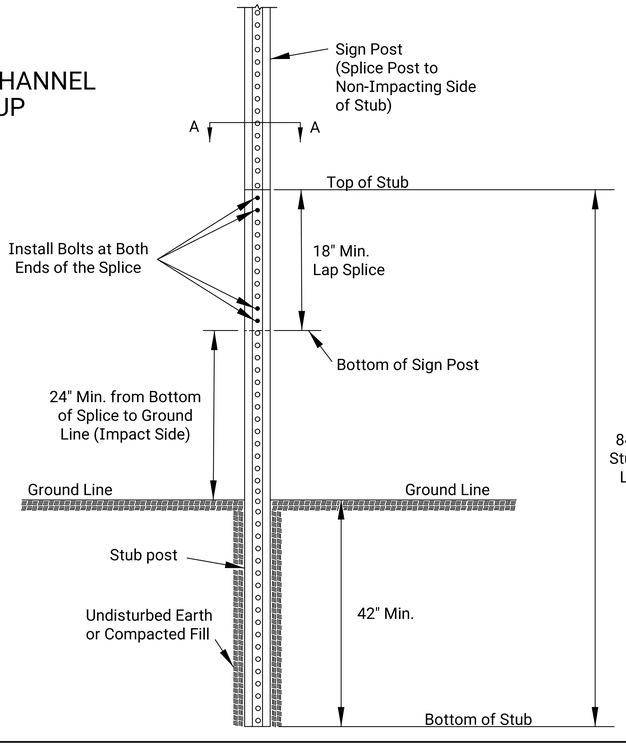
Section B-B



Front Elevation

See TE710 for Additional Details and Requirements

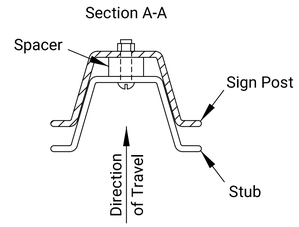
3 LB/F U-CHANNEL SETUP



Notes:

Place two bolts at both ends of the splice through the holes nearest the ends of the splice.

Use manufacturer recommended spacers over the bolts between the spliced pieces of U-Channel.



NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

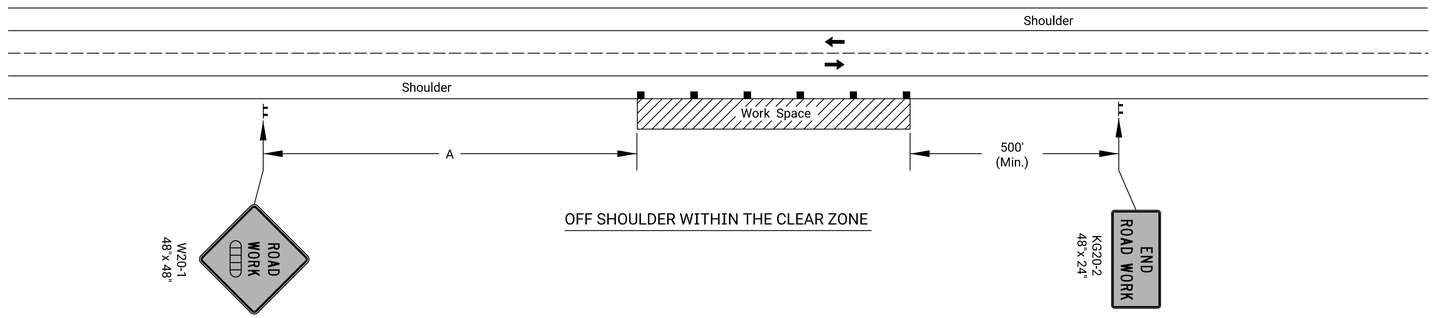
TRAFFIC CONTROL SIGN POSTS

TE712

FHWA APPROVAL			06/01/15	APP'D	Kristina Pyle		
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED	
DESIGN CK.		DETAIL CK.		QUAN. CK.		TRACE CK.	

Plotted by : USTV690349 29-OCT-2024 10:04
File : 309011193TE712.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	95	128

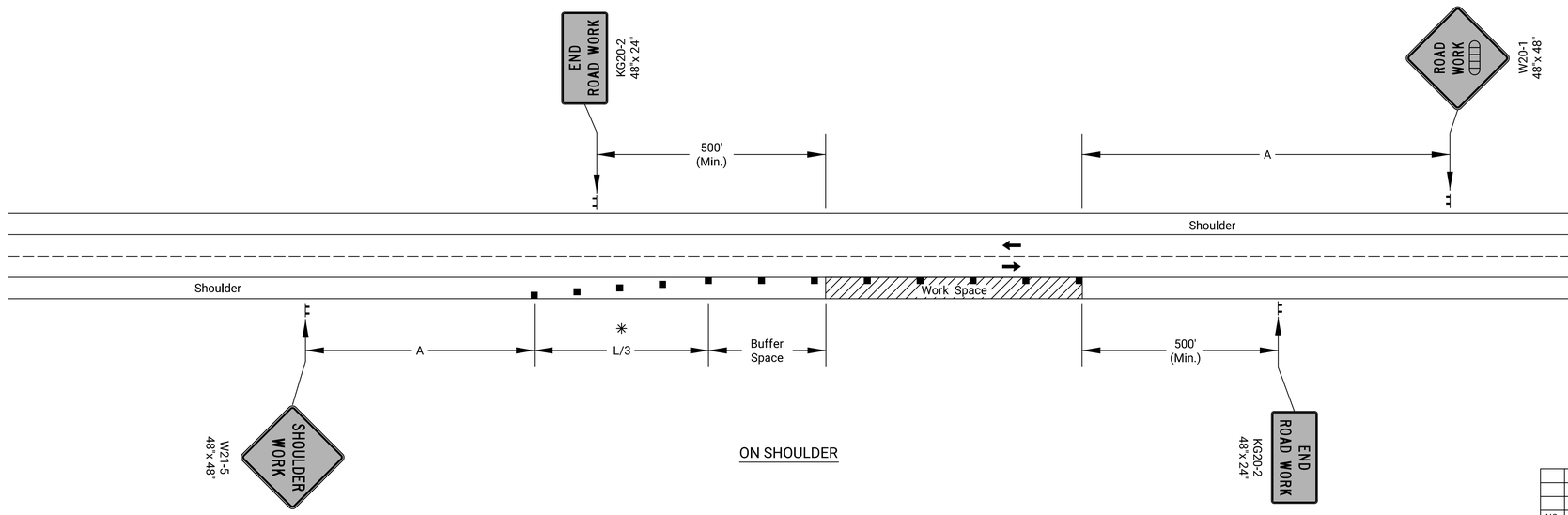


OFF SHOULDER WITHIN THE CLEAR ZONE

Notes:

No traffic control is required if the Work Space is located outside of the clear zone.

For operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with high-intensity rotating, flashing, oscillating, or strobe lights is used.



ON SHOULDER

✳ Omit taper if paved shoulder is less than 8' wide.

■ Channelizing Device

Ahead, 1500 ft, or 1 Mile

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SHOULDER WORK UNDIVIDED ROADWAY

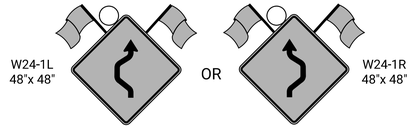
TE720

FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

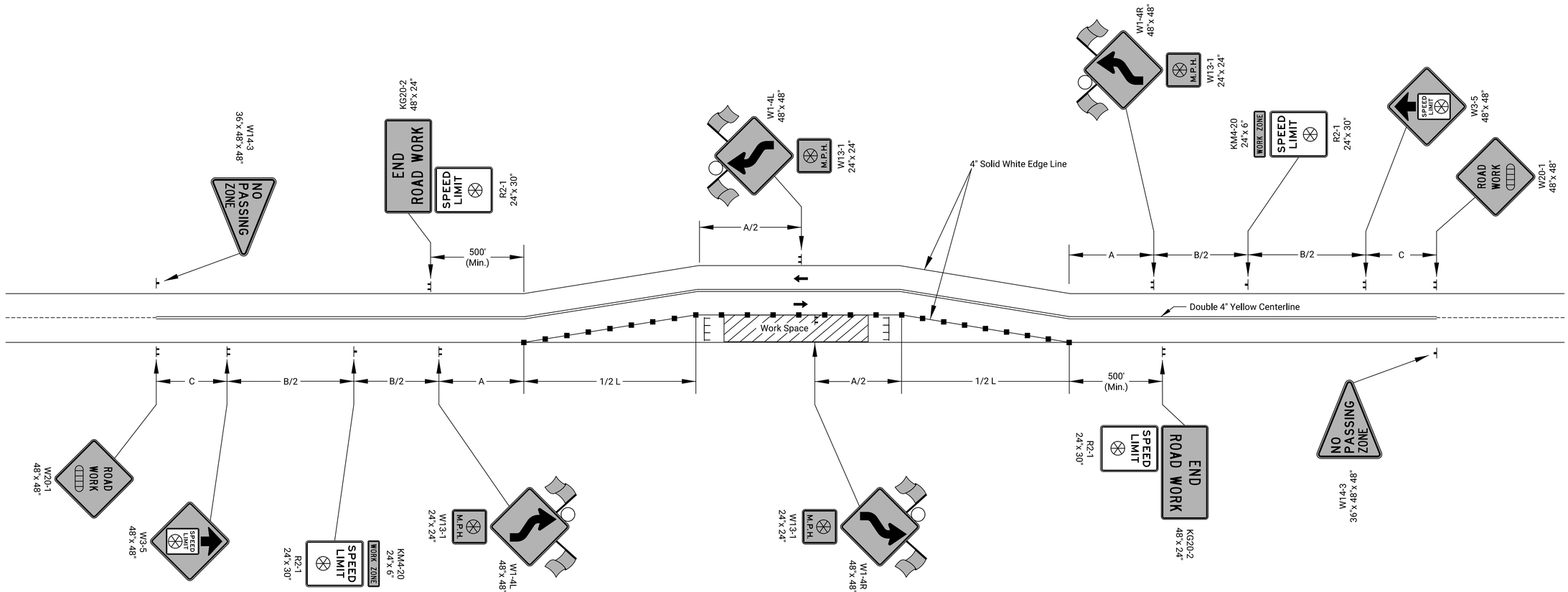
Sh. No. 95

Plotted by : USTV690349 29-OCT-2024 10:06
File : 30901193TE720.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	96	128



One W24-1 should be used per approach where the tangent distance between two reverse curves is less than 600 ft. If used, use in place of the first W1-4 and eliminate the second.



- ■ Channelizing Device
- Type 3 Barricades
- Ahead, 1500 ft, or 1 Mile
- Speed to be Determined by the Engineer
- Type "A" Low Intensity Warning Light

NO.	DATE	REVISIONS	BY	APP'D
01	03-13-18	W24-1 usage changed to Should	R.W.B.	E.G.K.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL LANE SHIFT

TE724

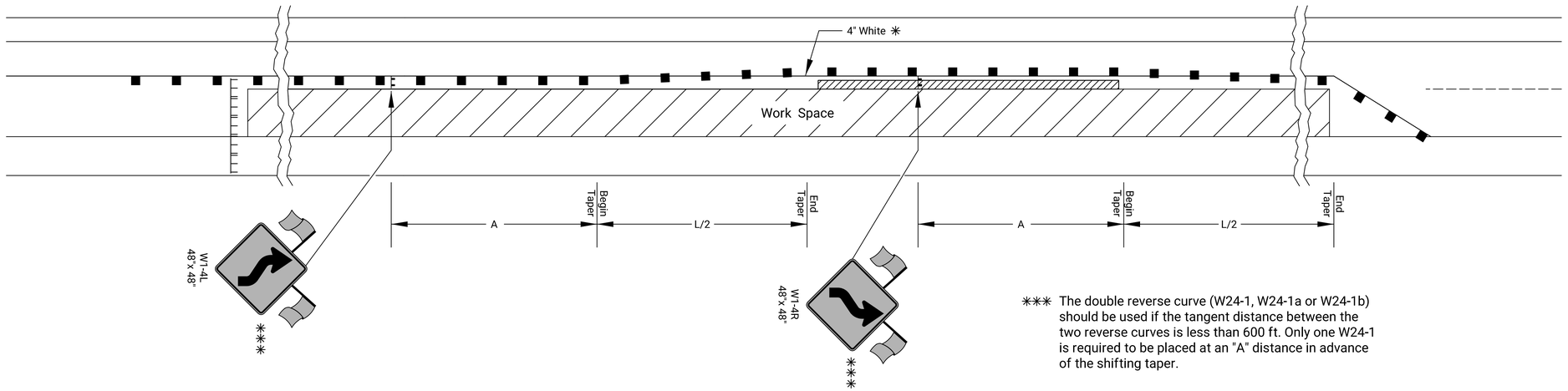
FHWA APPROVAL		03-13-18	APP'D.		Eric Kocher
DESIGNED	R.W.B.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

Plotted by : USTV690349 29-OCT-2024 10:10
File : 30901193TE724.dgn

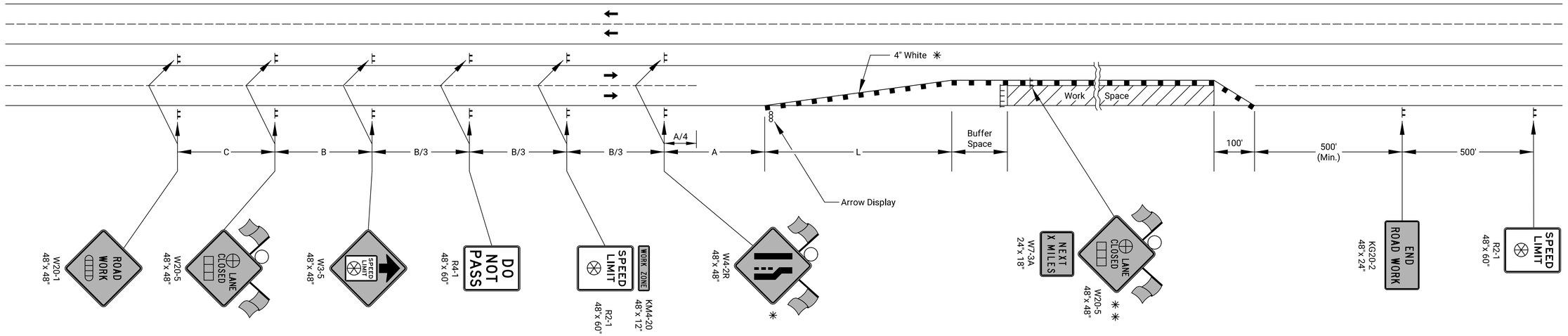
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0719-01	2024	97	128

SHIFTING TAPER DETAIL

Add signs and devices as shown for work inside a closed lane that extends near to (or into) the open traffic lane.



✳✳✳ The double reverse curve (W24-1, W24-1a or W24-1b) should be used if the tangent distance between the two reverse curves is less than 600 ft. Only one W24-1 is required to be placed at an "A" distance in advance of the shifting taper.



- Type 3 Barricades
- X Length to the Nearest Whole Mile
- ■ Channelizing Device
- Ahead, 1500 ft, or 1 mile
- Ahead, 1000 ft, 1500 ft, or ½ mile
- ⊕ Right or Left
- ⊛ Speed to be determined by the Engineer
- ○ Type "A" Low Intensity Warning Light

✳ For left lane closures use W4-2L and yellow edge line along channelizing devices.

✳ ✳ The W20-5 (⊕Lane Closed) and W7-3A (Next X Miles) signs should be placed at 2 mile increments on a project of 4 miles or longer.

Left-side signs shall be omitted for a four-lane undivided highway.

One flagger should be stationed within each multi-lane roadway activity area where work is in a closed lane adjacent to traffic and not separated by a concrete safety barrier system.

NO.	DATE	REVISIONS	BY	APP'D
01	03-13-18	W24-1 usage changed to Should	R.W.B.	E.G.K.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL LANE CLOSURE ON MULTILANE HWY

TE744

FHWA APPROVAL		03-13-18	APP'D.	Eric Kocher	
DESIGNED	B.A.H.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

Plotted by : USTV690349 29-OCT-2024 13:31
File : 30901193TE744.dgn

WHEELCHAIR RAMP WITH DETECTABLE WARNING PANELS

STATION	SIDE	STREET	WIDTH FT.	TYPE 1 EACH	REMARKS
6' Wide Wheel Chair Ramps					
100+52.84	Rt.	West St.	6	1	
100+53.18	Lt.	West St.	6	1	
129+64.44	Rt.	West St.	6	1	Add Alternate #1
136+31.50	Rt.	West St.	6	1	Add Alternate #1
136+85.32	Rt.	West St.	6	1	Add Alternate #1
139+47.98	Rt.	West St.	6	1	Add Alternate #1
9+43.17	Rt.	MacArthur	6	1	
9+42.78	Lt.	MacArthur	6	1	
TOTAL				8	
10' Wide Wheel Chair Ramps					
99+56.81	Rt.	West St.	10	1	
99+57.20	Lt.	West St.	10	1	
130+07.52	Rt.	West St.	10	1	Add Alternate #1
10+45.18	Rt.	MacArthur	10	1	
10+44.80	Lt.	MacArthur	10	1	
TOTAL				5	

REMOVAL OF EXISTING STRUCTURES

STATION	ROADWAY	SIDE	ITEM
101+39.25	West Street	Lt.	47 L.F. of 36" RCP
103+23.50	West Street	CL	96 L.F. of 24" RCP
104+24.39	West Street	Rt.	37 L.F. of 20" CMP
105+34.93	West Street	Lt.	40 L.F. of 24" CMP
105+90.44	West Street	Rt.	40 L.F. of 18" CMP
107+50.78	West Street	Lt.	24 L.F. of 24" RCP
108+19.81	West Street	Rt.	25 L.F. of 15" CMP
108+35.65	West Street	Lt.	49 L.F. of 24" RCP
109+46.03	West Street	Rt.	31 L.F. of 12" CMP
110+63.84	West Street	Rt.	41 L.F. of 12" CMP
111+15.92	West Street	Lt.	49 L.F. of 24" CMP
111+91.07	West Street	Rt.	41 L.F. of 12" CMP
113+20.65	West Street	Lt.	54 L.F. of 12" CMP
114+70.92	West Street	Rt.	22 L.F. of 12" CMP
115+25.46	West Street	Rt.	24 L.F. of 15" CMP
116+37.77	West Street	Lt.	45 L.F. of 18" CMP
116+66.32	West Street	Rt.	24 L.F. of 12" CMP
117+27.53	West Street	Lt.	82 L.F. of 24" CMP
117+69.84	West Street	Rt.	41 L.F. of 18" CMP
118+16.82	West Street	Lt.	54 L.F. of 18" CMP
118+93.07	West Street	Rt.	21 L.F. of 16" CMP
120+74.84	West Street	Lt.	57 L.F. of 18" CMP
121+94.62	West Street	Rt.	25 L.F. of 18" CMP
123+48.48	West Street	Lt.	69 L.F. of 18" CMP
124+48.88	West Street	Rt.	45 L.F. of 18" CMP
125+92.36	West Street	Lt.	52 L.F. of 14" CMP
127+57.81	West Street	Lt.	111 L.F. of 20" CMP
FOR INFORMATION ONLY			

CURB AND GUTTER (COMBINED) (AE)

STATION to STATION		SIDE	LENGTH (ft.)	REMARKS
West Street				
97+00.00	99+81.65	Rt.	311.6	
97+00.00	99+83.41	Lt.	311.8	
100+17.61	128+82.76	Rt.	2,898.2	Includes Driveways
100+18.66	128+71.26	Lt.	2,894.2	Includes Driveways
MacArthur Road				
8+00.00	9+31.42	Rt.	131.4	
8+00.00	9+17.54	Lt.	117.5	
10+69.35	12+00.00	Rt.	130.6	
10+69.61	12+00.00	Lt.	130.4	
TOTAL			6,925.8	

MONOLITHIC EDGE CURB (6") (AE)

STATION to STATION		SIDE	LENGTH (ft.)	REMARKS
126+71.69	127+20.92	Rt.	78.5	Valley Gutter at Bolin Drive
127+73.17	128+19.77	Rt.	78.5	Valley Gutter at Bolin Drive
TOTAL			157.0	

CONCRETE SAFETY BARRIER

STATION to STATION		SIDE	TYPE	LENGTH (Lin. Ft.)	REMARKS
West Street					
130+70.00	133+98.77	Rt.	II	328.77	
TOTAL				328.77	Add Alternate #1

CONCRETE SIDEWALK (4")

STATION to STATION		SIDE	WIDTH	AREA (SQ.FT.)	REMARKS
West Street					
97+00.00	99+48.18	Rt.	6	1,610.0	
100+35.69	100+56.15	Lt.	6	145.3	
130+14.29	131+16.92	Rt.	6	655.9	Add Alternate #1
133+97.77	136+27.12	Rt.	6	1,389.3	Add Alternate #1
136+94.85	139+43.15	Rt.	6	1,508.8	Add Alternate #1
TOTAL				5,309.2	Measured Quantity

CRUSHED ROCK BASE, REINFORCED

STATION to STATION		ROADWAY	THICKNESS (in.)	AREA (SQ. YDS)
97+00.00	128+82.76	West Street	6	21,155.15
		TOTAL		21,155.15
126+70.93	128+22.67	West Street	7	427.79
		TOTAL		427.79

CONCRETE DRIVEWAY (REINFORCED)

STATION	SIDE	THICKNESS (in.)	Area (Sq. Yds.)	Remarks
101+81.00	**Rt.**	**8**	**243.54**	**Measured Quantity**
104+26.23	**Lt.**	**8**	**235.52**	**Measured Quantity**
104+26.23	**Rt.**	**8**	**101.92**	**Measured Quantity**
105+35.14	**Lt.**	**8**	**193.14**	**Measured Quantity**
105+90.37	**Rt.**	**8**	**88.81**	**Measured Quantity**
108+20.34	**Rt.**	**8**	**88.81**	**Measured Quantity**
108+35.19	**Lt.**	**8**	**239.81**	**Measured Quantity**
109+45.87	**Rt.**	**8**	**108.47**	**Measured Quantity**
110+65.87	**Rt.**	**8**	**108.47**	**Measured Quantity**
111+10.64	**Lt.**	**8**	**252.92**	**Measured Quantity**
111+90.23	**Rt.**	**8**	**121.58**	**Measured Quantity**
113+08.25	**Lt.**	**8**	**229.59**	**Measured Quantity**
114+70.49	**Rt.**	**8**	**57.92**	**Measured Quantity**
115+24.93	**Rt.**	**8**	**88.16**	**Measured Quantity**
116+26.35	**Lt.**	**8**	**209.35**	**Measured Quantity**
116+66.30	**Rt.**	**8**	**88.81**	**Measured Quantity**
116+77.43	**Lt.**	**8**	**239.89**	**Measured Quantity**
117+58.37	**Lt.**	**8**	**191.13**	**Measured Quantity**
117+69.75	**Rt.**	**8**	**115.03**	**Measured Quantity**
118+19.11	**Lt.**	**8**	**179.45**	**Measured Quantity**
119+47.68	**Rt.**	**8**	**82.25**	**Measured Quantity**
120+70.84	**Lt.**	**8**	**194.58**	**Measured Quantity**
121+95.02	**Rt.**	**8**	**71.52**	**Measured Quantity**
123+47.79	**Lt.**	**8**	**227.43**	**Measured Quantity**
124+47.27	**Rt.**	**8**	**122.92**	**Measured Quantity**
125+95.19	**Lt.**	**8**	**122.92**	**Measured Quantity**
126+43.04	**Rt.**	**8**	**194.91**	**Measured Quantity**
127+46.79	**Lt.**	**8**	**394.44**	**Measured Quantity**
TOTAL			**4,504.48**	

CONCRETE PAVEMENT, REINFORCED (COLORED)(STAMPED)

LOCATION	THICKNESS (in.)	AREA (SQ. YDS.)	REMARKS
South Crosswalk	9	52.49	West & MacArthur Intersection
North Crosswalk	9	59.92	West & MacArthur Intersection
West Crosswalk	9	49.23	West & MacArthur Intersection
East Crosswalk	9	53.89	West & MacArthur Intersection
TOTAL		215.52	

DITCH LINER

START	END	THICKNESS (in.)	Area (Sq. Yds.)	Remarks
96+98.52	**99+65.05**	**5**	**722.87**	
100+40.63	**103+97.42**	**5**	**864.46**	
104+55.50	**105+02.76**	**5**	**92.63**	
105+69.60	**107+98.81**	**5**	**477.23**	
108+70.58	**110+76.26**	**5**	**457.08**	
111+46.02	**112+73.87**	**5**	**284.10**	
113+41.63	**115+87.97**	**5**	**547.42**	
118+61.27	**120+38.45**	**5**	**408.45**	
121+02.22	**123+12.88**	**5**	**468.15**	
TOTAL			**4,322.39**	

CONCRETE SIDEWALK (5")

STATION to STATION		SIDE	WIDTH	SQ.FT.	REMARKS
West Street					
97+00.00	99+71.58	Lt.	10	2,776.1	
99+49.18	99+59.18	Rt.	10	142.0	
100+24.33	128+82.76	Rt.	10	27,255.6	
128+82.76	129+64.13	Rt.	10	736.2	Add Alternate #1
131+16.92	133+97.77	Rt.	6	1,810.8	Add Alternate #1
TOTAL				31,984.5	Measured Quantity

CONCRETE SIDEWALK PROTECTION CURB

STATION to STATION		SIDE	HEIGTH (in.)	LENGTH (Lin. Ft.)	REMARKS
West Street					
131+82.94	133+79.07	Rt.	6	196.13	Measured Quantity
TOTAL				196.13	Add Alternate #1

CONCRETE PAVEMENT (NRDJ)

STATION to STATION		THICKNESS	AREA (SQ. YDS.)
West Street			
97+00.00	99+04.20	9"	771.43
100+94.53	128+82.76	9"	15,143.46
MacArthur Road			
8+00.00	8+98.17	9"	504.88
10+89.98	12+00.00	9"	440.07
TOTAL			16,747.63

CONCRETE PAVEMENT, REINFORCED

STATION to STATION		THICKNESS (in.)	AREA (SQ. YDS.)	REMARKS
99+04.20	100+94.53	9	1,511.54	West & MacArthur Intersection
	TOTAL		1,511.54	
STATION	SIDE			
108+20.34	Rt.	8	11.55	Drive Hook-up
111+91.23	Rt.	8	36.66	Drive Hook-up
117+69.75	Rt.	8	15.09	Drive Hook-up
	TOTAL		63.30	

A.C. PAVEMENT

STATION	SIDE	THICKNESS (in.)	AREA (SQ. YDS.)	REMARKS
116+67.43	Lt.	8	49.46	Drive Hook-up
117+57.43	Rt.	8	36.12	Drive Hook-up
	TOTAL		85.58	

EXISTING MAILBOX REPLACEMENTS

STATION	OFFSET	ADDRESS #	SIDE	# OF BOXES
108+41.21	20.50'	3850	Rt.	1
110+40.65	20.00'	3842	Rt.	1
121+68.76	19.00'	3656	Rt.	1
126+46.36	23.50'	3511	Lt.	2

FOR INFORMATION ONLY: Existing Mailboxes to be Removed and Reset on Non-Hazardous Support. Cost to be SUBSIDIARY to the Bid Item "Site Restoration".

CONCRETE PAVEMENT (VG) (REINFORCED)

STATION	SIDE	AREA (SQ. YDS.)	THICKNESS (in.)	REMARKS
127+46.79	Rt.	427.79	8	Bolin Drive
TOTAL		427.79		

See Sheet 128 for Earthwork Quantities Recap

RECAPITULATION OF ROAD & PROJECT QUANTITIES

ITEM	QUANTITY	UNIT
Lump Sum Bid Items - Paving		
Field Office and Laboratory (Type A)	**1**	**Each**
Mobilization	**1**	**Lump Sum**
Mobilization (DBE)	**1**	**Lump Sum**
Removal of Existing Structures	**1**	**Lump Sum**
Site Clearing	**1**	**Lump Sum**
Site Restoration	**1**	**Lump Sum**
Fill, Compacted (90% Density)	**3,235**	**Cu. Yds.**
Excavation	**25,387**	**Cu. Yds.**
Measured Quantity Bid Items - Paving		
Pavement Removed	**14,710**	**Sq. Yds.**
A.C. Pavement 8" (6" Bit Base)	**86**	**Sq. Yds.**
Concrete Pavement 9", Reinforced	**1,511**	**Sq. Yds.**
Concrete Pavement 9" Reinforced (Colored)(Stamped)	**216**	**Sq. Yds.**
Concrete Pavement 9" (NRDJ)	**16,748**	**Sq. Yds.**
Concrete Pavement 8" Reinforced	**64**	**Sq. Yds**
Concrete Pavement (VG) 8" (Reinf.)	**428**	**Sq. Yds.**
Crushed Rock Base 6", Reinforced	**21,156**	**Sq. Yds.**
Crushed Rock Base 7", Reinforced	**428**	**Sq. Yds.**
Concrete Curb, Mono Edge (6" & 1-1/2")	**157**	**Lin. Ft.**
Concrete C & G, Type 1 (6" & 1-1/2")	**6,926**	**Lin. Ft.**
Concrete Ramp Nose Section (Median)	**1**	**Each**
Wheel Chair Ramp w/ Detectable Warnings (6' Wide)	**4**	**Each**
Wheel Chair Ramp w/ Detectable Warnings (10' Wide)	**4**	**Each**
Concrete Sidewalk 4"	**1,756**	**Sq. Ft.**
Concrete Sidewalk 5"	**29,438**	**Sq. Ft.**
Concrete Driveway 8" (Reinforced)	**4,505**	**Sq. Yds.**
AC Pavement 6" Temp (Utility Patching)	**100**	**Sq. Yds.**
AC Pavement 6" Temp (Phase Shifts)	**100**	**Sq. Yds.**
Measured Quantity Sum Bid Items - Drainage		
Pipe, SWS 8" (PVC)	**380**	**Lin. Ft.**
Pipe, SWS 15" (RCP)	**714**	**Lin. Ft.**
Pipe, SWS 18" (RCP)	**336**	**Lin. Ft.**
Pipe, SWS 24" (RCP)	**108**	**Lin. Ft.**
Pipe, SWS 30" (RCP)	**35**	**Lin. Ft.**
Pipe, SWS, HERCP (19"x30")	**272**	**Lin. Ft.**
Pipe, SWS, HERCP (29"x45")	**29**	**Lin. Ft.**
Pipe, SWS, RCBC (9'x3')	**485**	**Lin. Ft.**
Pipe, SWS, RCBC (9'x4')	**175**	**Lin. Ft.**
Wingwalls (Precast)(9'x3')	**10**	**Each**
Wingwalls (Precast)(9'x4')	**6**	**Each**
Inlet, Curb (Type 1) (L=10' W=3')	**13**	**Each**
Inlet, Curb (Type 1) (L=10' W=4')	**4**	**Each**
Inlet, Drop (Single)	**3**	**Each**
MH, Shallow SWS (4')	**2**	**Each**
Inlet Hookup	**17**	**Each**
Pipe, SWS, PVC, 4" Perforated	**170**	**Lin. Ft.**
Concrete Flume	**3**	**Each**
Ditch Liner	**4,323**	**Sq. Yds.**
Fill, Sand (Flushed & Vibrated)	**2,532**	**Lin. Ft.**
Abandoned Gas Line Removal	**40**	**Lin. Ft.**
Lum Sum Bid Item - Traffic		
Traffic Control	**1**	**Lump Sum**
Traffic Signal (West & MacArthur)	**1**	**Lump Sum**
Pavement Marking	**1**	**Lump Sum**
Signing, except Street Name Signs	**1**	**Lump Sum**
Measured Quantity Bid Items - Traffic		
Signing, Arrow Board (Each per Day)	**100**	**Day**
Lump Sum Bid Items - Landscaping		
Seeding, Temporary	**1**	**Lump Sum**
Sodding, Buffalo	**20,401**	**Sq. Yds.**
Measured Quantity Bid Items - Landscaping		
Large Tree Removed	**2**	**Each**
Measured Quantity Bid Items - Erosion Contol BMP		
BMP, Back of Curb Protection	**8,553**	**Lin. Ft.**
BMP, Construction Entrance	**4**	**Each**
BMP, Curb Inlet Protection	**17**	**Each**
BMP, Drop Inlet Protection	**2**	**Each**
BMP, Ditch Check	**3**	**Each**
BMP, Silt Fence	**4,104**	**Lin. Ft.**
Lump Sum Bid Items - Paving (Non-Participating)		
Transportation of Salvaged Material	**1**	**Lump Sum**
Measured Quantity Bid Items - Traffic (Non-Participaing)		
Signing, Street Name Signs Only (D-3 Metro Street Name Signs)	**1**	**Lump Sum**
Measured Quantity Bid Items - Water (Non-Participating Items)		
Pipe , WL 16"	**72**	**Lin Ft.**
Pipe, WL 16" (DICL)	**38**	**Lin. Ft.**
Valve Box Adjusted	**3**	**Each**
Fire Hydrant Relocation	**3**	**Each**
Add Alternate #1		
Concrete Sidewalk Protection Curb	**197**	**Lin. Ft.**
Wheel Chair Ramp w/ Detectable Warnings (6' Wide)	**4**	**Each**
Wheel Chair Ramp w/ Detectable Warnings (10' Wide)	**1**	**Each**
Concrete Sidewalk 4"	**3,554**	**Sq. Ft.**
Concrete Sidewalk 5"	**2,547**	**Sq. Ft.**
Concrete Safety Barrier	**329**	**Lin. Ft.**
Handrail	**283**	**Lin. Ft.**
Traffic Signalization (I-235 Entrance Ramp)	**1**	**Lump Sum**
Traffic Signal (I-235 Exit Ramp)	**1**	**Lump Sum**

CITY OF WICHITA

WSP

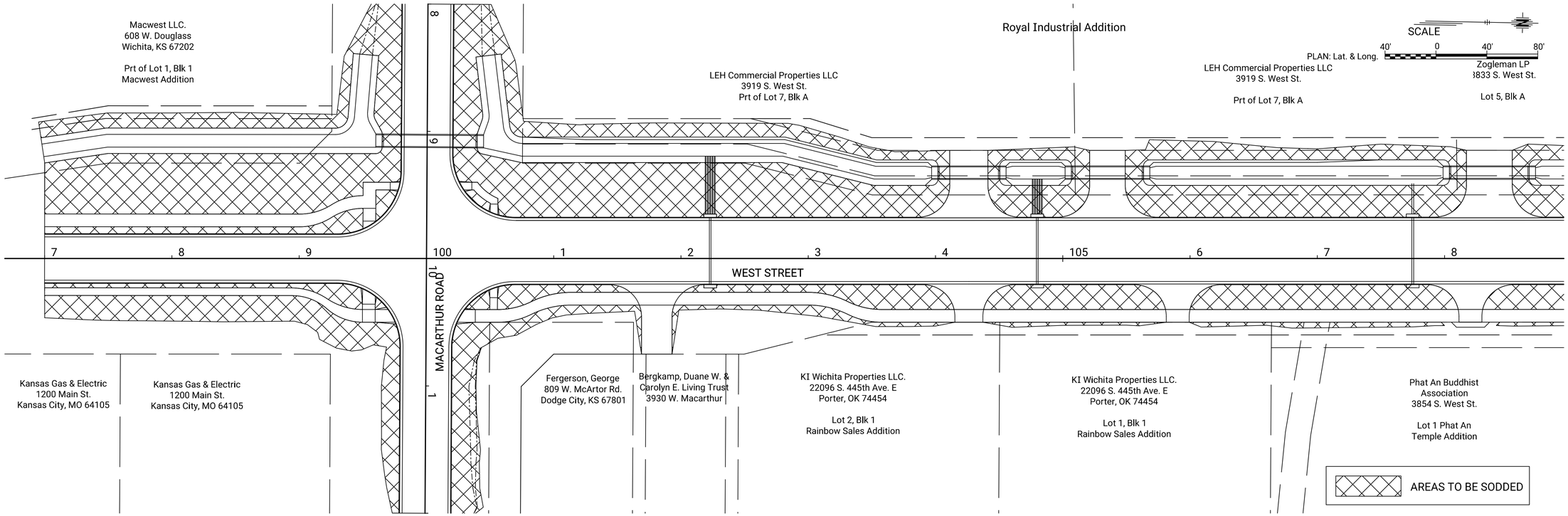
RECAPITULATION OF QUANTITIES

WEST STREET - I-235 TO MACARTHUR

NO.	DATE	DESCRIPTION
		REVISIONS

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
98
SHEET 98 OF 128



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CITY OF WICHITA

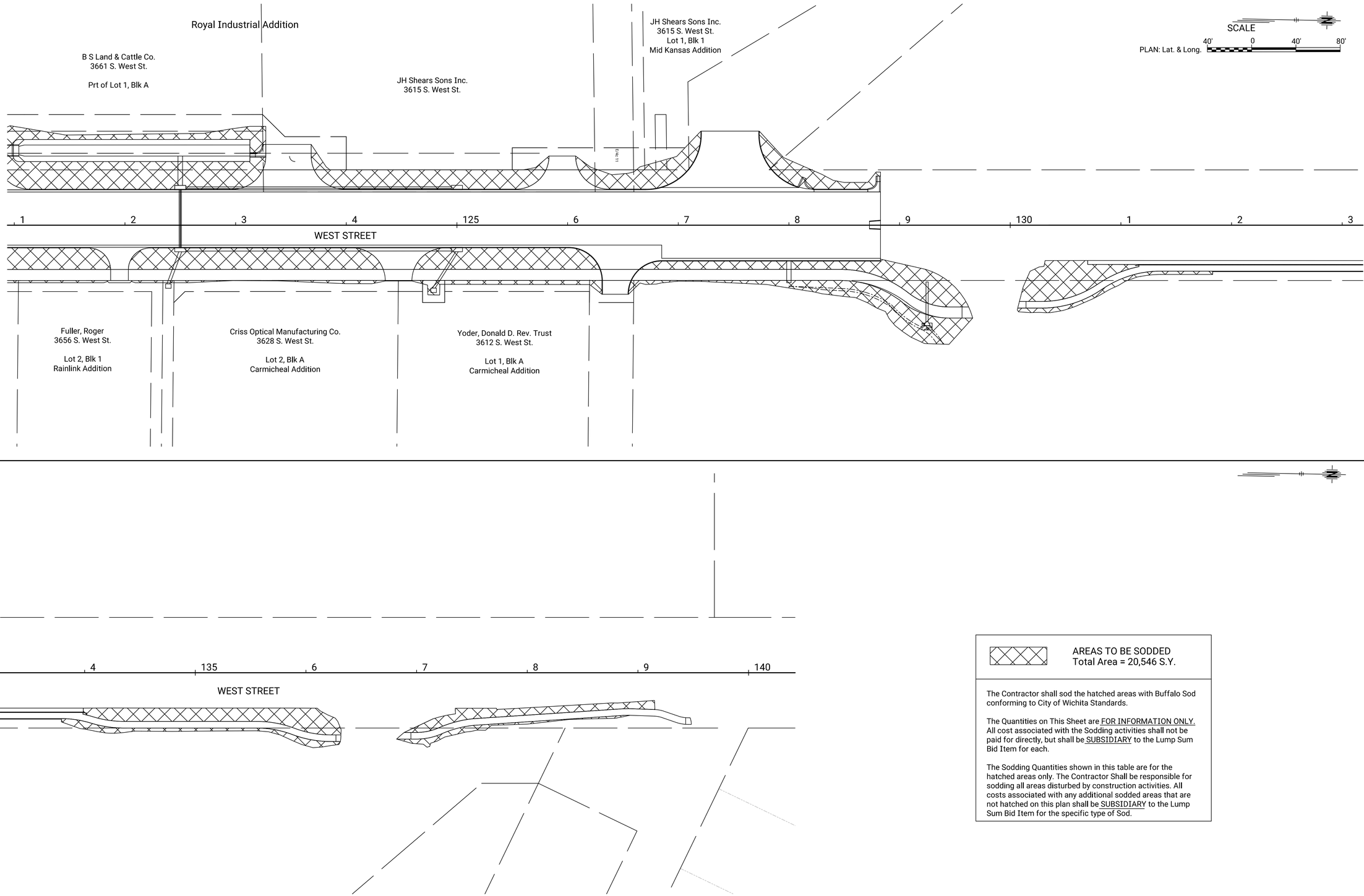
WSP

WEST STREET - I-235 TO MACARTHUR
RESTORATION PLAN
STA. 97+00 TO STA. 121+00

REVISIONS		
NO.	DATE	DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
99
SHEET 99 OF 128



AREAS TO BE SODDED
Total Area = 20,546 S.Y.

The Contractor shall sod the hatched areas with Buffalo Sod conforming to City of Wichita Standards.

The Quantities on This Sheet are FOR INFORMATION ONLY. All cost associated with the Sodding activities shall not be paid for directly, but shall be SUBSIDIARY to the Lump Sum Bid Item for each.

The Sodding Quantities shown in this table are for the hatched areas only. The Contractor Shall be responsible for sodding all areas disturbed by construction activities. All costs associated with any additional sodded areas that are not hatched on this plan shall be SUBSIDIARY to the Lump Sum Bid Item for the specific type of Sod.

CITY OF WICHITA

WSP

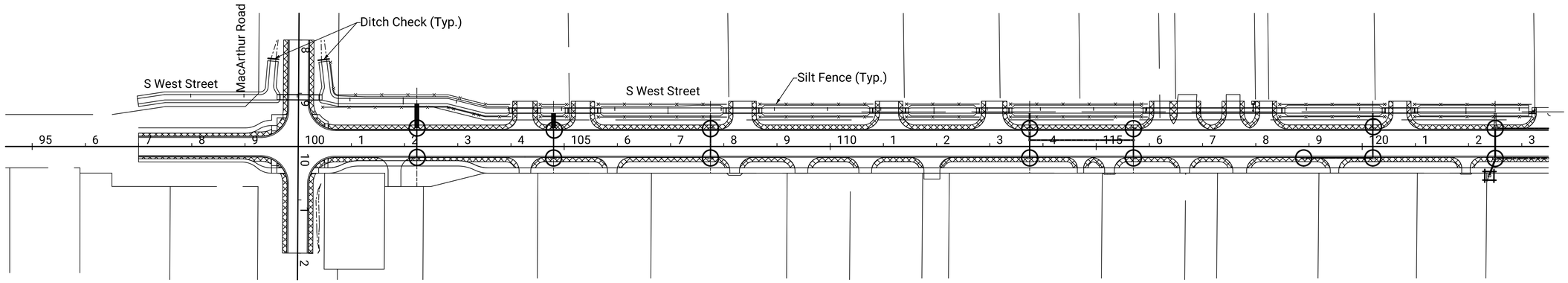
WEST STREET - I-235 TO MACARTHUR

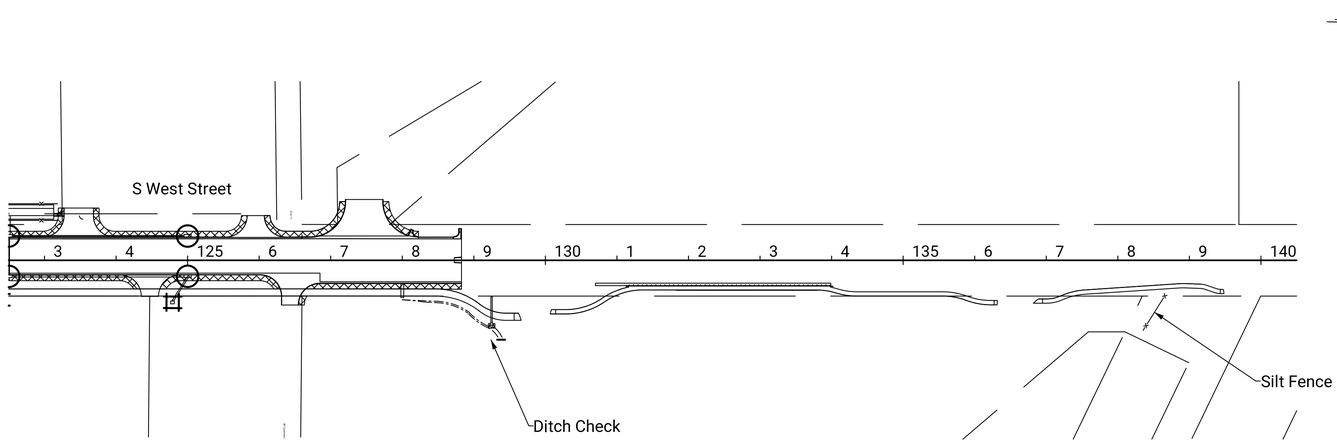
RESTORATION PLAN
STA. 121+00 TO STA. 145+00

NO.	DATE	REVISIONS / DESCRIPTION

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
100
SHEET 100 OF 128





EROSION CONTROL MEASURE	UNITS	QUANTITY
BMP, CURB INLET PROTECTION	EACH	17
BMP, DROP INLET PROTECTION	EACH	2
BMP, SILT FENCE	LIN. FT.	4,104
BMP, DITCH CHECK	EACH	3
BMP, BACK OF CURB PROTECTION*	LIN. FT.	8,553
BMP, CONSTRUCTION ENTRANCE	EACH	4

*8' WIDE CURLEX I EXCELSIOR BLANKET OR EQUAL INSTALL PER MANUFACTURER'S RECOMMENDATIONS INCLUDING STAPLES

EROSION CONTROL PLAN LEGEND

(Installation Details Found in the BMP Details Sheets)

- BMP, CURB INLET PROTECTION
- BMP, DROP INLET PROTECTION
- BMP, BACK OF CURB PROTECTION
- BMP, SILT FENCE

NO SCALE

CITY OF WICHITA

wsp

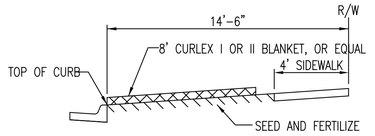
WEST STREET - I-235 TO MACARTHUR

EROSION CONTROL PLAN

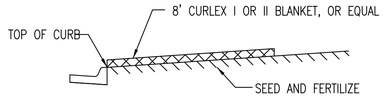
NO.	DATE	DESCRIPTION
REVISIONS		

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

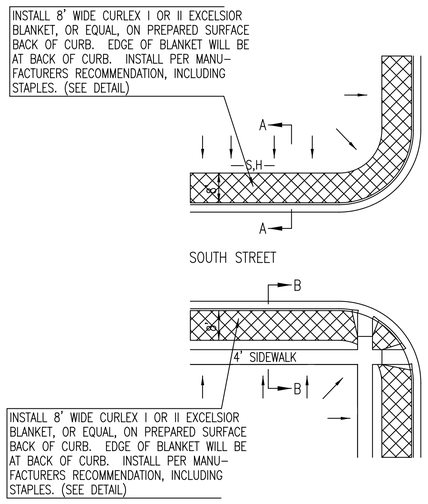
SHEET NO
101
SHEET 101 OF 128



SECTION B-B



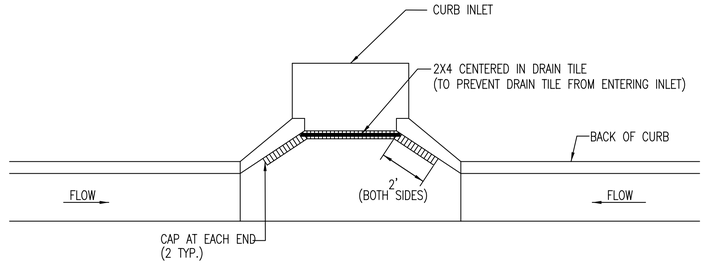
SECTION A-A



GENERAL NOTES

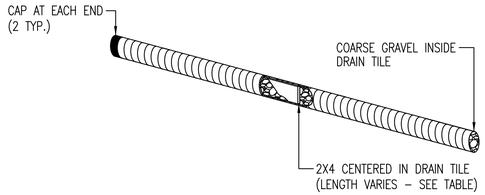
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

BACK OF CURB PROTECTION DETAIL

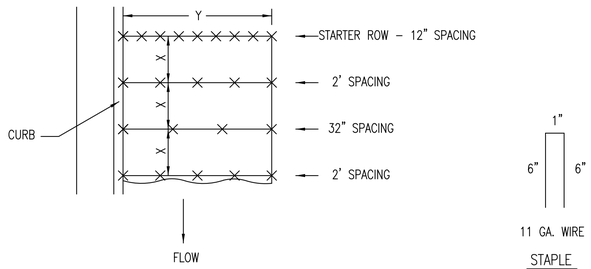


NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"



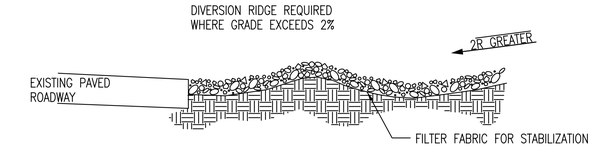
CURB INLET PROTECTION
4" PERFORATED PIPE W/ GRAVEL



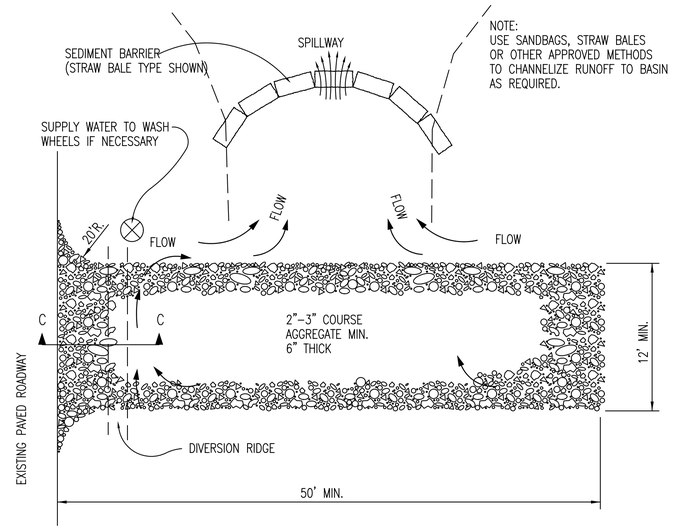
STAPLE PATTERN

NOTES: USE 6" SEAM OVERLAP
(X & Y = RECOMMENDED BY MANUFACTURE)

DETAILS FOR APPROVED EROSION CONTROL MAT



SECTION C-C



STABILIZED CONSTRUCTION ENTRANCE

GENERAL NOTES

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

REVISION DATE: MAY 2013

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

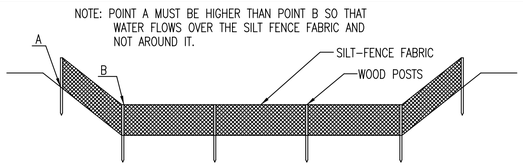
CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET

SW-501



ELEVATION

SILT FENCE DITCH CHECKS

(STREAM PROTECTION)

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK, NOT OVER IT. SILT FENCE DITCH CHECKS OFTEN FAIL WHEN OVERTOPPED. SILT FENCE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. THE SILT FENCE SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE TOP OF THE LOW POINT OF THE FENCE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK. SILT FENCE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD. SILT FENCE SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.

THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH CHECK DITCH GRADE (%)	SPACING CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS AT LEAST 12" DEEP BY 6" WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH FOR LATER USE. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSTREAM SIDE OF THE TRENCH. PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSTREAM EDGE OF THE TRENCH. LINE TWO SIDES OF THE TRENCH WITH THE FABRIC AS SHOWN ON DETAIL. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED. LAY THE EXPOSED SILT FENCE ON THE UPSTREAM SIDE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSTREAM OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 24". PLACE POSTS NO MORE THAN 4' APART. ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

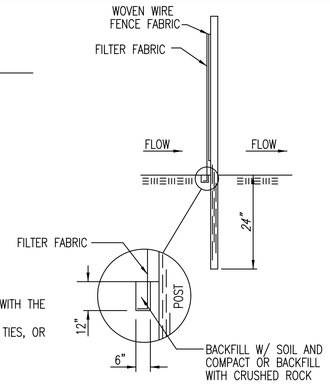
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK–NOT OVER IT. PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. SILT FENCE INSTALLATIONS QUICKLY DETERIORATE WHEN WATER OVERTOPS THEM. DO NOT PLACE SILT FENCE POSTS ON THE UPSTREAM SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT PLACE A SILT FENCE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW. DO NOT PLACE SILT FENCE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW. FOLLOW PRESCRIBED DITCH CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS. DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE LOW POINT ON THE TOP OF THE FENCE. DO NOT PLACE SILT FENCE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.

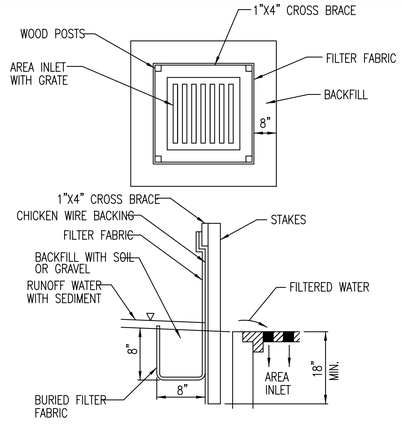
INSPECTION AND MAINTENANCE:

SILT FENCE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



ANCHOR TRENCH DETAIL



SILT FENCE BARRIERS FOR AREA INLETS

(INLET PROTECTION)

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE WIRE OR POLYMERIC MESH BACKING USED TO HELP SUPPORT THE SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. THE MATERIAL USED TO FRAME THE TOPS OF THE POSTS SHOULD BE 1" BY 4" BOARDS. SILT FENCE FABRIC AND SUPPORT BACKING SHOULD BE ATTACHED TO THE WOODEN POSTS AND FRAME WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE A SILT FENCE DROP INLET BARRIER IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. WATER SHOULD FLOW THROUGH SILT FENCE, NOT OVER IT. SILT FENCE BARRIERS FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED. WHEN USED AS A BARRIER FOR AREA INLETS, SILT FENCE FABRIC AND POSTS MUST BE SUPPORTED AT THE TOP BY A WOODEN FRAME. WHEN A SILT FENCE BARRIER FOR AREA INLETS IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 8" DEEP BY 8" WIDE. DRIVE POSTS TO A DEPTH OF AT LEAST 18" AROUND THE PERIMETER OF THE AREA INLET. THE DISTANCE BETWEEN POSTS SHOULD BE 4' OR LESS. IF THE DISTANCE BETWEEN TWO ADJACENT CORNER POSTS IS MORE THAN 4', ADD ANOTHER POST(S) BETWEEN THEM. CONNECT THE TOPS OF ALL THE POSTS WITH A WOODEN FRAME MADE OF 1" BY 4" BOARDS. USE NAILS OR SCREWS FOR FASTENING. ATTACH THE WIRE OR POLYMERIC–MESH BACKING TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC LONG ENOUGH TO WRAP AROUND THE PERIMETER OF THE AREA INLET. ADD MORE LENGTH FOR OVERLAPPING THE FABRIC JOINT. PLACE THE EDGE OF THE FABRIC IN THE TRENCH, STARTING AT THE OUTSIDE EDGE OF THE TRENCH. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED. ATTACH THE SILT FENCE TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. THE JOINT SHOULD BE OVERLAPPED TO THE NEXT POST. NOTE: WHEN A SILT FENCE BARRIER FOR AREA INLET IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

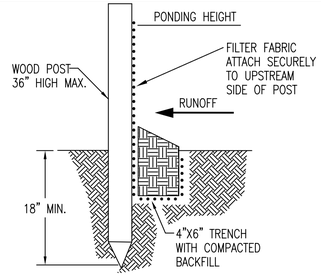
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE BARRIER FOR AREA INLET–NOT OVER IT. PLACE A SILT FENCE BARRIER FOR AREA INLET IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. SILT FENCE BARRIER FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED. DO NOT PLACE POSTS ON THE OUTSIDE OF THE SILT FENCE BARRIER FOR AREA INLET. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESISTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT INSTALL SILT FENCE BARRIER FOR AREA INLETS WITHOUT FRAMING THE TOP OF THE POSTS. THE CORNER POSTS AROUND AREA INLETS ARE STRESSED IN TWO DIRECTIONS WHEREAS A NORMAL SILT FENCE IS ONLY STRESSED IN ONE DIRECTION. THIS ADDED STRESS REQUIRES MORE SUPPORT.

INSPECTION AND MAINTENANCE:

SILT FENCE BARRIER FOR AREA INLETS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE SILT FENCE?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



SILT FENCE BARRIERS

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT. WHEN PRACTICABLE, SILT FENCE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. SILT FENCE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT–OF–WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 6" DEEP BY 4" WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH. PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT–FENCE FABRIC SHOULD REMAIN EXPOSED. LAY THE EXPOSED SILT FENCE UPSLOPE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 18". PLACE POSTS NO MORE THAN 4' APART. ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICABLE, DO NOT PLACE SILT FENCE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. WHEN THE FLOW CONCENTRATES, IT OVERTOPS THE BARRIER AND THE SILT FENCE SLOPE BARRIER QUICKLY DETERIORATES. DO NOT PLACE SILT–FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT PLACE SILT FENCE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT SUFFICIENTLY ANCHORED, IT WILL WASH OUT. SILT FENCE SLOPE BARRIERS MUST BE DUG INTO THE GROUND–SILT FENCE AT GROUND LEVEL DOES NOT WORK BECAUSE WATER WILL FLOW UNDERNEATH.

INSPECTION AND MAINTENANCE:

SILT FENCE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION: ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING? DOES WATER FLOW UNDER THE SLOPE BARRIER? DO THE SILT FENCES SAG EXCESSIVELY? HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS? DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

REVISION DATE: MAY 2013

CITY OF WICHITA

PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SILT FENCE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER

PAUL GUNZELMAN, P.E.

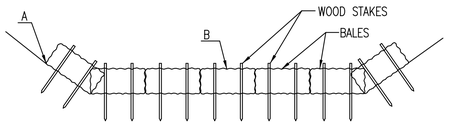
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET

SW–502

NOTE: POINT A MUST BE HIGHER THAN POINT B
SO THAT WATER FLOWS OVER THE BALES AND
NOT AROUND THEM.



STRAW BALE DITCH CHECKS

MATERIAL SPECIFICATION:

BALE DITCH CHECKS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
OPTIONAL: THE DOWNSTREAM SCOUR APRON SHOULD BE CONSTRUCTED OF A DOUBLE-NETTED STRAW EROSION-CONTROL BLANKET AT LEAST 6' WIDE.
OPTIONAL: THE METAL LANDSCAPE STAPLES USED TO ANCHOR THE EROSION-CONTROL BLANKET SHOULD BE AT LEAST 8" LONG.

PLACEMENT:

BALE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. THE DITCH CHECK SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.
STRAW BALE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD. BALES SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED. THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH GRADE (%)	CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH-IT WILL BE USED LATER. OPTIONAL: ON THE DOWNSTREAM SIDE OF THE TRENCH, ROLL OUT A LENGTH OF EROSION-CONTROL BLANKET (SCOUR APRON) EQUAL TO THE LENGTH OF THE TRENCH. PLACE THE UPSTREAM EDGE OF THE EROSION-CONTROL BLANKET ALONG THE BOTTOM UPSTREAM EDGE OF THE TRENCH. THE EROSION CONTROL BLANKET SHOULD BE ANCHORED IN THE TRENCH WITH ONE ROW OF 8" LANDSCAPE STAPLES PLACED ON 18" CENTERS. THE REMAINDER OF THE EROSION-CONTROL BLANKET (THE PORTION THAT IS NOT LYING IN THE TRENCH) WILL SERVE AS THE DOWNSTREAM SCOUR APRON. THIS SECTION OF THE BLANKET SHOULD BE ANCHORED TO THE GROUND WITH 8" LANDSCAPE STAPLES PLACED AROUND THE PERIMETER OF THE BLANKET ON 18" CENTERS. THE REMAINDER OF THE BLANKET SHOULD BE ANCHORED USING TWO EVENLY SPACED ROWS OF 8" LANDSCAPE STAPLES ON 18" CENTERS PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSTREAM SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP AND EXTEND UPSTREAM NO MORE THAN 24".

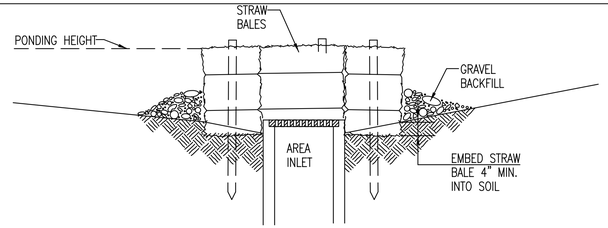
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

DO NOT PLACE A BALE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW. DO NOT PLACE BALE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW. FOLLOW PRESCRIBED DITCH-CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS. DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. DO NOT PLACE BALE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT. BALE DITCH CHECKS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE CHECK.

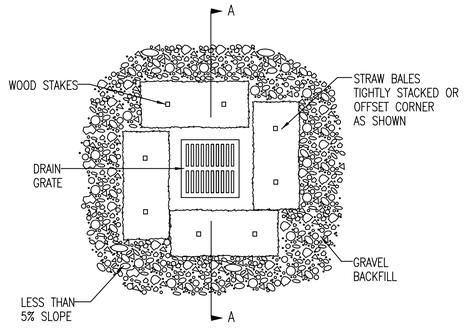
INSPECTION AND MAINTENANCE:

BALE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES AND/OR SCOUR APRONS (OPTIONAL) DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS

(INLET PROTECTION)

MATERIAL SPECIFICATION:

BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

BALE AREA INLET BARRIERS SHOULD BE PLACED DIRECTLY AROUND THE PERIMETER OF A DROP INLET. WHEN A BALE AREA INLET BARRIER IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 4" DEEP BY A BALE'S WIDTH WIDE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. SOME BALES MAY NEED TO BE SHORTENED TO FIT INTO THE TRENCH AROUND THE AREA INLET. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS.
STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE RECEIVING SIDE OF THE BARRIER AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.
NOTE: WHEN A BALE AREA INLET BARRIER IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

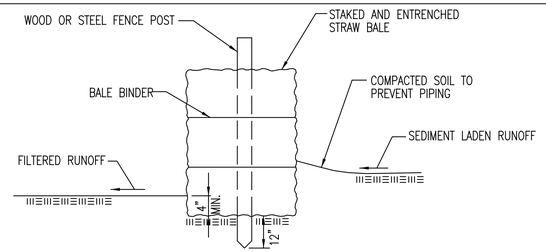
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

BALES SHOULD BE PLACED DIRECTLY AGAINST THE PERIMETER OF THE AREA INLET. THIS ALLOWS OVERTOPPING WATER TO FLOW DIRECTLY INTO THE INLET INSTEAD OF ONTO NEARBY SOIL CAUSING SCOUR.
BALE AREA INLET BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE AREA INLET BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE AREA INLET BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



STRAW BALE BARRIERS

MATERIAL SPECIFICATION:

BALE SLOPE BARRIERS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE.
THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG.
TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT.
WHEN PRACTICABLE, BALE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW.
BALE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE.
PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND.
ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSLOPE SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER FAILS.
DO NOT PLACE BALE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.
BALE SLOPE BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

REVISION DATE: MAY 2013

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STRAW BALE DITCH CHECK AND BARRIER DETAILS

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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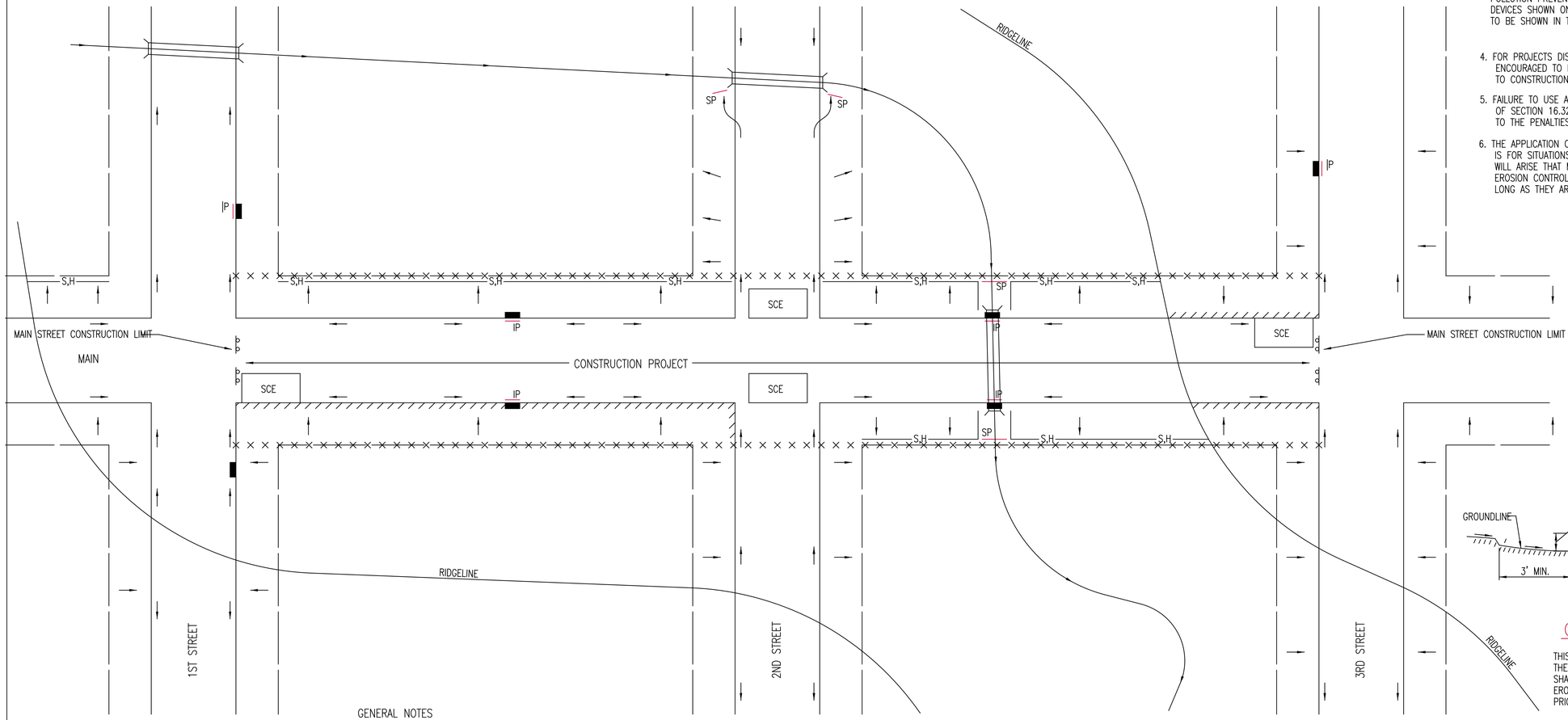
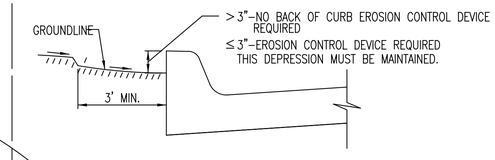


GENERAL NOTES

1. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPES OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
2. EROSION CONTROL DEVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS AND UNTIL THE DISTURBED EARTH IS RESTABILIZED.
3. IF THE PROJECT WILL DISTURB 1 ACRE OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE EROSION CONTROL DEVICES SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.
4. FOR PROJECTS DISTURBING LESS THAN 1 ACRE, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION. EROSION CONTROL DEVICES MUST BE USED ON ALL PROJECTS.
5. FAILURE TO USE AND MAINTAIN EROSION CONTROL DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE CONTRACTOR TO THE PENALTIES PROVIDED FOR THEREIN.
6. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT DEVICE OTHER THAN THOSE SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.



CURB BACKFILL DETAIL

THIS IS A TEMPORARY MEASURE ONLY, WHEN APPROVED BY THE PROJECT ENGINEER. THE DIRT GRADE BEHIND THE CURB SHALL BE BROUGHT TO THE TOP OF CURB, WITH TEMPORARY EROSION CONTROL MAT OR PERMANENT VEGETATION PLACED, PRIOR TO THE COMPLETION OF ALL PROJECTS.

LEGEND

- R–O–W LIMITS
- DRAINAGE FLOW PATH
- R/W LIMIT WITHIN CONSTRUCTION LIMIT
- STORM WATER INLETS
- IP — INLET PROTECTION
- S,H — SILT FENCE OR HAY BALE BARRIER
- SP — STREAM PROTECTION
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- BACK OF CURB PROTECTION

GENERAL NOTES

1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, LAKES, AND OTHER DRAINAGE FACILITIES, AND OFF OF STREETS.
2. THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT–OF–WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.
3. EROSION CONTROL DEVICES WILL BE REQUIRED AT ALL POINTS ALONG THE PROJECT WHERE DISTURBED EARTH CAN DRAIN ONTO PRIVATE PROPERTY.
4. INLET PROTECTION DEVICES WILL BE REQUIRED WHEREVER WATER CAN DRAIN OFF THE PROJECT SITE INTO AN INLET, INCLUDING ANY SIDE STREET INLETS.
5. EROSION CONTROL DEVICES SHALL BE INSTALLED AT CREEK CROSSINGS SO AS TO PREVENT SEDIMENT FROM ENTERING THEREIN.
6. STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED, AS NEEDED, TO PREVENT MUD FROM TRACKING ONTO STREETS NOT UNDER CONSTRUCTION AND ON STREETS WITHIN THE PROJECT LIMITS IF TRAFFIC IS BEING MAINTAINED THROUGH THE PROJECT.
7. ANY MUD TRACKED ONTO STREETS MUST BE REMOVED AT THE END OF EACH WORK DAY.
8. THE CONTACTOR WILL BE REQUIRED TO PLACE EROSION CONTROL DEVICES BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES, IN ACCORDANCE WITH THE FOLLOWING:
   A. THE DEVICE REQUIRED WILL BE APPROVED EROSION CONTROL MAT LISTED ON THE CITY'S APPROVED MATERIAL LIST. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE SOIL EROSION BMPs – BACK OF CURB SEDIMENT BARRIER DETAILS)
   B. THIS DEVICE SHALL BE INSTALLED IMMEDIATELY WHENEVER THE CURB IS BACKFILLED TO WITHIN 3" OF THE TOP OF CURB. (SEE CURB BACKFILL DETAIL) OTHER BMP'S MAY BE REQUIRED AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB.
   C. ADDITIONALLY, OTHER EROSION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) WILL BE INSTALLED AT LOCATIONS OF CONCENTRATED FLOW RESULTING IN SEDIMENT OVERRUNNING THE MAT.
   D. SHOULD THE PROJECT PLANS SPECIFY THAT THE RIGHT–OF–WAY IS TO BE SODDED, THE EXCELSIOR MAT WILL NOT BE REQUIRED SO LONG AS THE SOD IS PLACED WITHIN 48 HOURS AFTER CURB BACKFILL REACHES A HEIGHT OF 3" OR LESS FROM TOP OF CURB. (SEE CURB BACKFILL DETAIL)

REVISION: JUNE 2015

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

STREET IMPROVEMENT PROJECTS

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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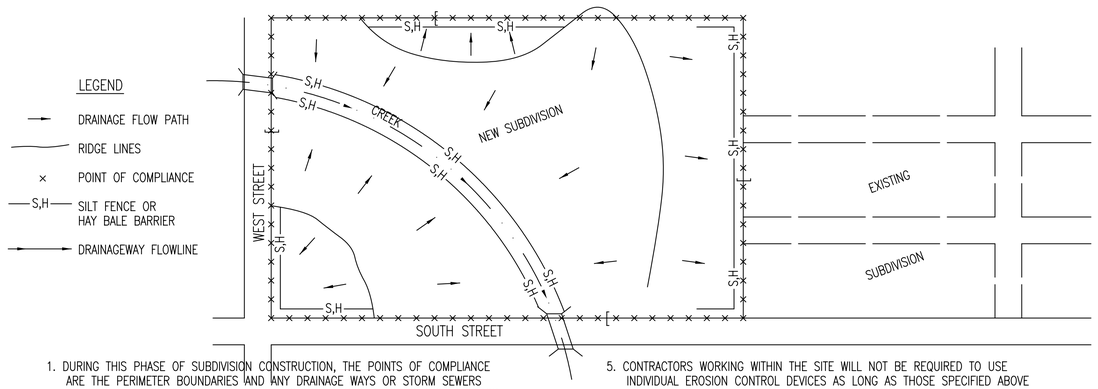
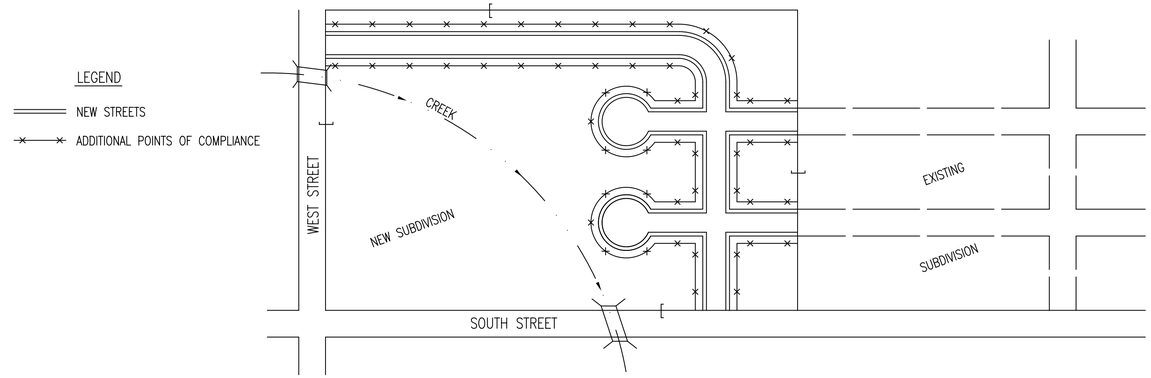
PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



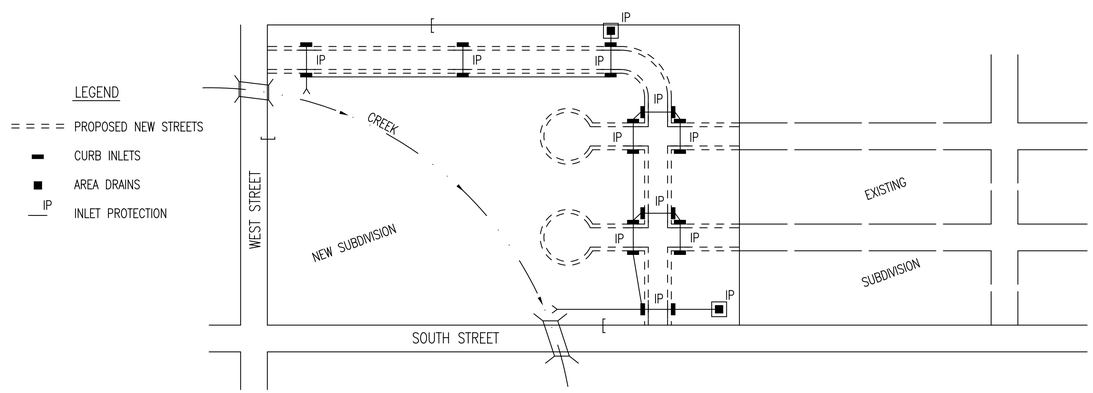
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAY BALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE EROSION CONTROL DEVICES WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR STREETS ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE EROSION CONTROL DEVICES WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED WITHIN 48 HOURS OR BY FRIDAY AT 6:00 PM, WHICHEVER IS EARLIER.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL EROSION CONTROL DEVICES AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE EROSION CONTROL DEVICES AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. IF THE INITIAL EARTH WORK AND UTILITIES ARE DONE AS PART OF A PUBLIC IMPROVEMENT PROJECT, THESE EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS SPECIFIED IN THE INDIVIDUAL PROJECT CONTRACTS. THE CONTRACTOR WILL MAINTAIN THE DEVICES UNTIL COMPLETION OF THE CONTRACT, AT WHICH TIME THE DEVELOPER WILL ASSUME MAINTENANCE RESPONSIBILITIES. IF THESE CONTRACTS ARE NOT PUBLIC IMPROVEMENT PROJECTS, THE DEVELOPER WILL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THESE DEVICES.
8. WITHIN 14 DAYS OF COMPLETION OF EARTHWORK ACTIVITIES IN ANY GIVEN AREA, THAT AREA SHALL BE TEMPORARILY OR PERMANENTLY SEEDED AND MULCHED.

PHASE 3 – STREET CONSTRUCTION



1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL EROSION CONTROL DEVICES INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
   A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
   B. NON–SUMP LOCATIONS – PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
3. EROSION CONTROL DEVICES WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), ADDITIONAL DEVICES WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
4. SEE DETAIL SHEET FOR BACK OF CURB PROTECTION.
5. THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLEMENTED WITH HAY BALE OR SILT FENCE EROSION CONTROL DEVICES AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
6. THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB EROSION CONTROL DEVICES.
7. THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB EROSION CONTROL DEVICES IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.

PHASE 2 – INSTALLATION OF STORM SEWER

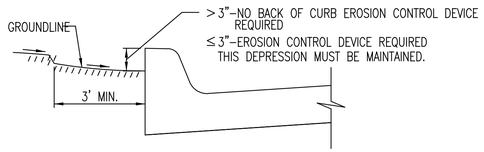


1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL EROSION CONTROL DEVICES REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAY BALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
4. CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION DEVICES MUST BE INSTALLED. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION. SEE PHASE 3 – STREET CONSTRUCTION.
5. THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE DEVICES.
6. THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE EROSION CONTROL DEVICES ONCE INSTALLED.
7. ALL DISTURBED GROUND WILL BE FINAL GRADED AND TEMPORARILY OR PERMANENTLY SEEDED WITHIN 14 DAYS IF COMPLETION OF WORK IN ANY GIVEN PART OF THE SUBDIVISION.
8. ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

GENERAL NOTES

1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, LAKES, STREETS OR ANY OTHER OTHER DRAINAGE FEATURE.
2. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
3. EROSION CONTROL DEVICES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON SOIL EROSION BMP'S DETAIL SHEETS.
4. PERSONS DESTROYING EROSION CONTROL DEVICES SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT DEVICES.
5. THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 1 ACRE OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL DEVICES ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLANS.
6. FOR SUBDIVISIONS SMALLER THAN 1 ACRE, SOIL EROSION DEVICES ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
7. FAILURE TO USE AND MAINTAIN SOIL EROSION DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
8. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE DEVICES OTHER THAN THAT SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
9. A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

SEE DETAIL SHEET FOR BACK OF CURB PROTECTION DETAIL



CURB BACKFILL DETAIL (STREET CONSTRUCTION ONLY)

THIS IS A TEMPORARY MEASURE ONLY, WHEN APPROVED BY THE PROJECT ENGINEER. THE DIRT GRADE BEHIND THE CURB SHALL BE BROUGHT TO THE TOP OF CURB, WITH TEMPORARY EROSION CONTROL MAT OR PERMANENT VEGETATION PLACED, PRIOR TO THE COMPLETION OF ALL PROJECTS.

REVISION DATE: MAY 2013

CITY OF WICHITA
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

SUBDIVISION DEVELOPMENT PROCESS

CITY ENGINEER
PAUL GUNZELMAN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
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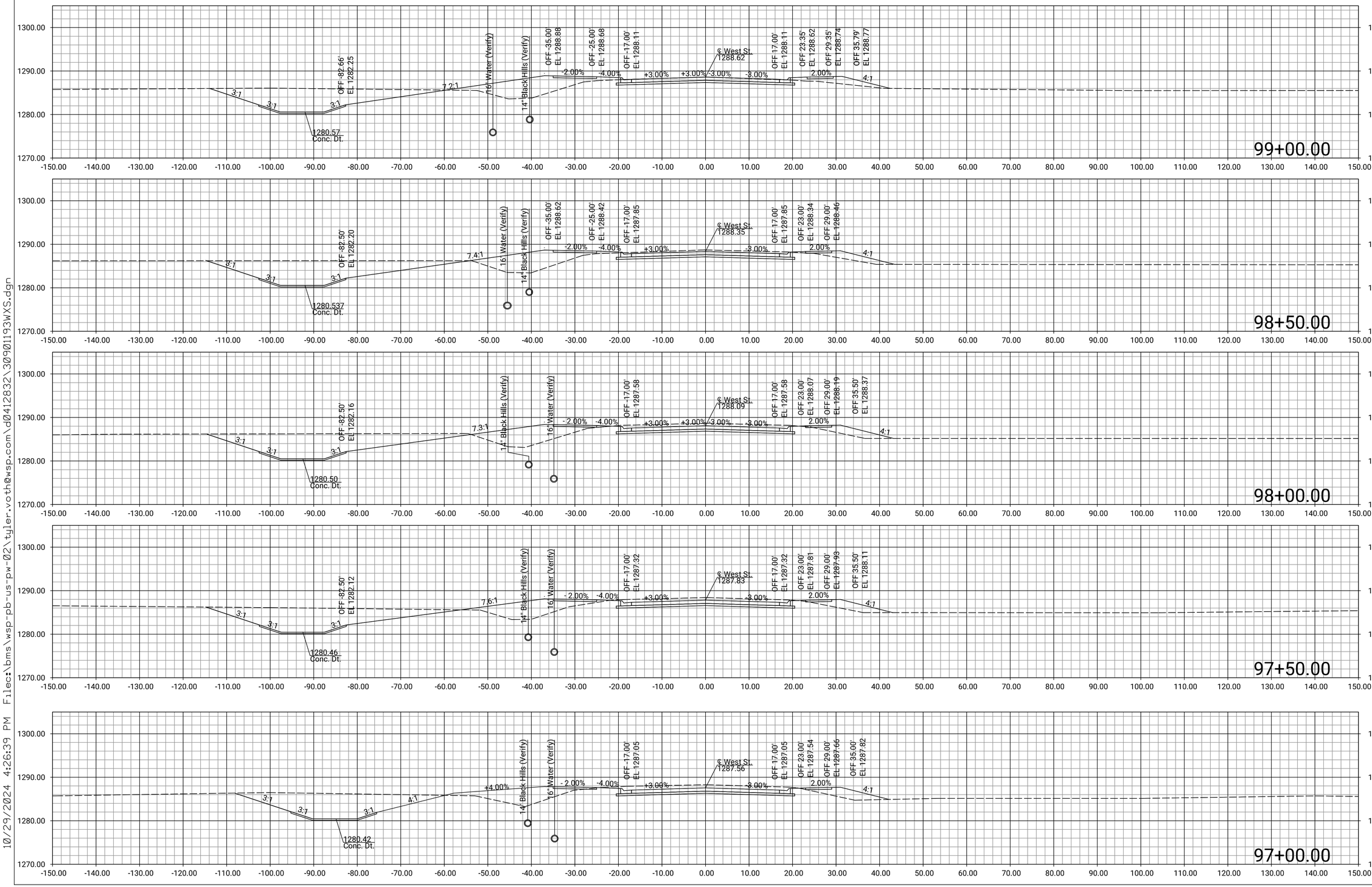
SW–505



CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR

WEST STREET CROSS SECTIONS

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	87 N-0719-01
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
107
SHEET 107 OF 128

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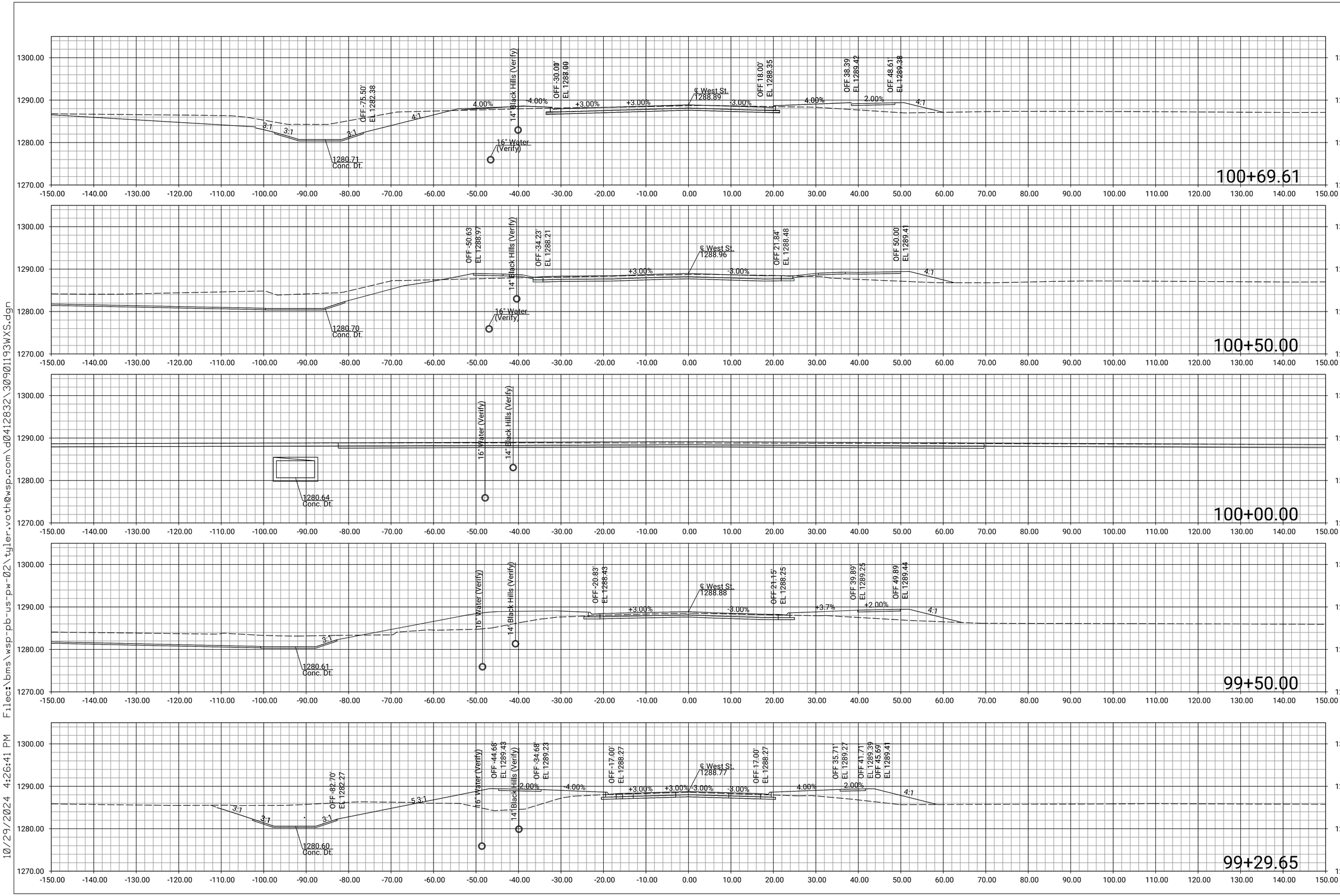

CITY OF WICHITA

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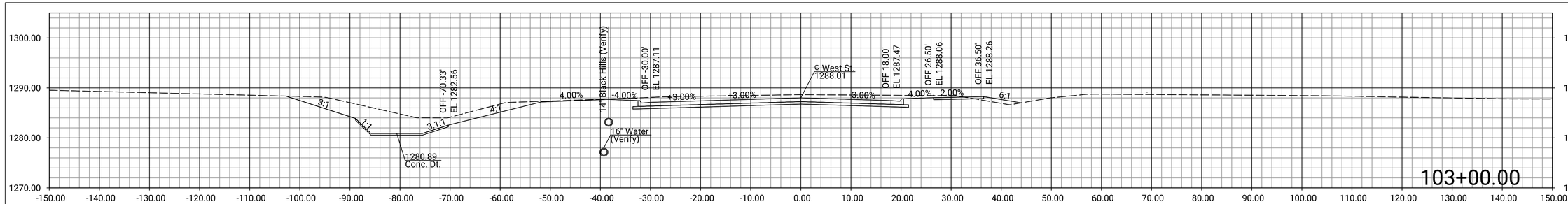

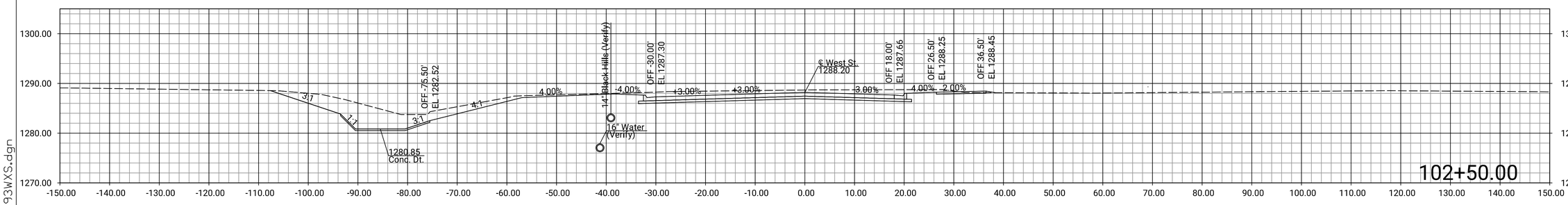

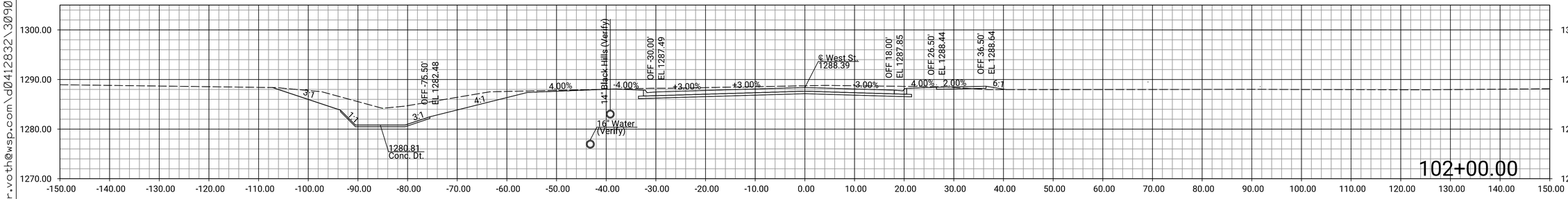

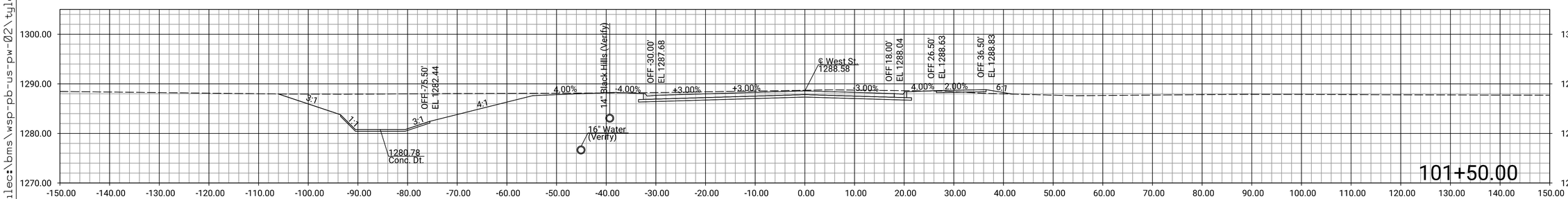

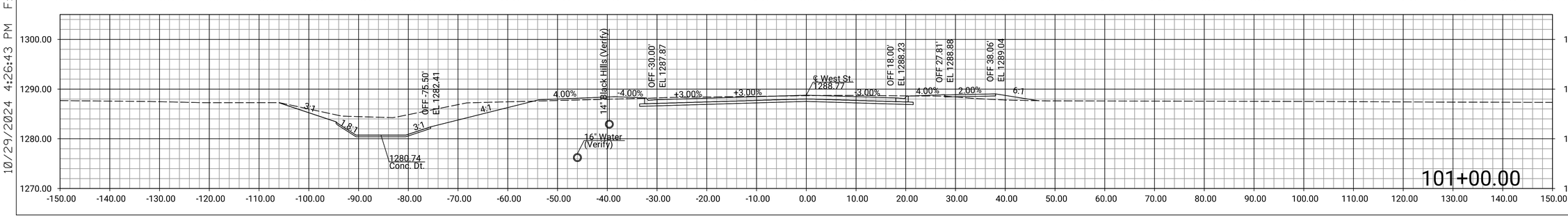

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YEAR:	2024

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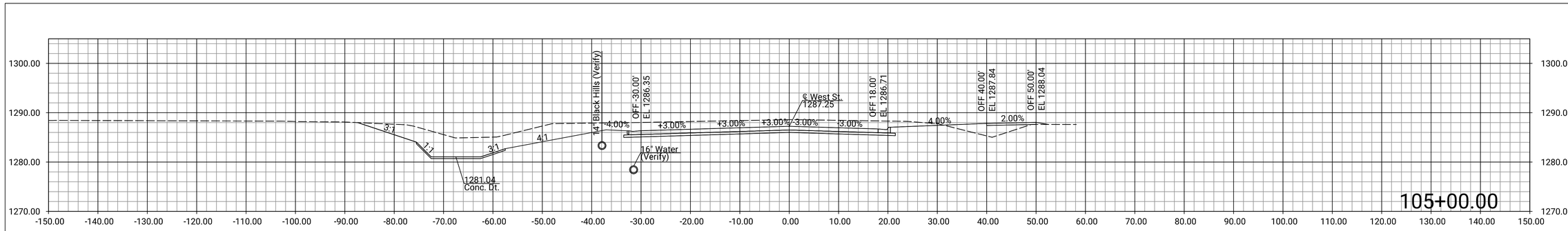

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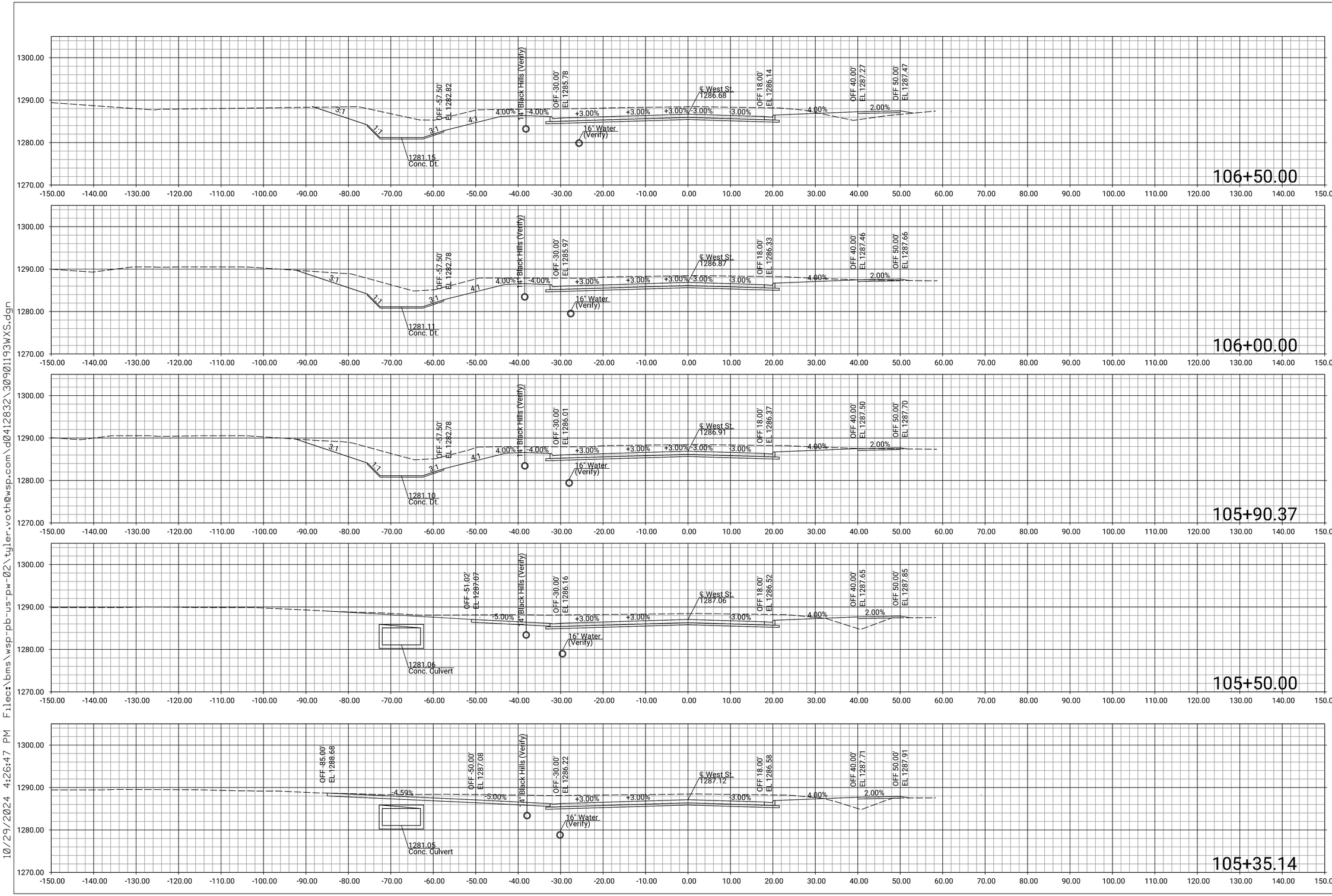

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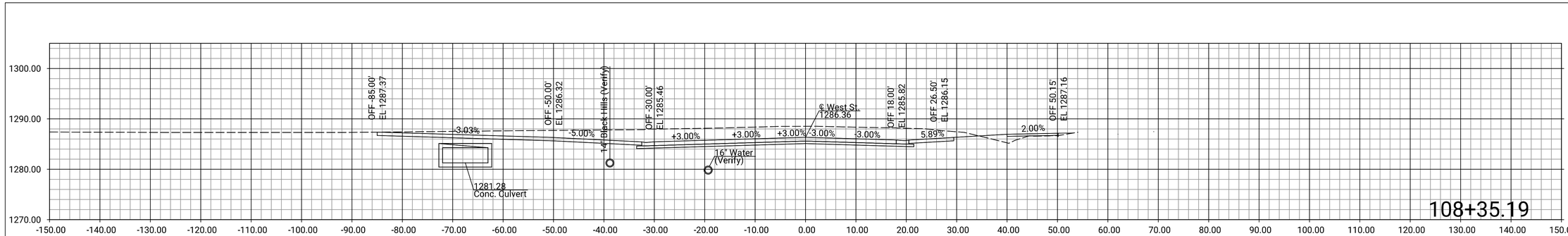

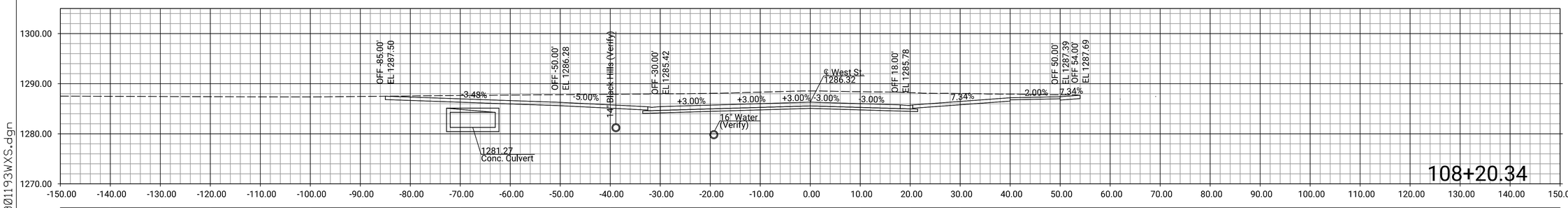

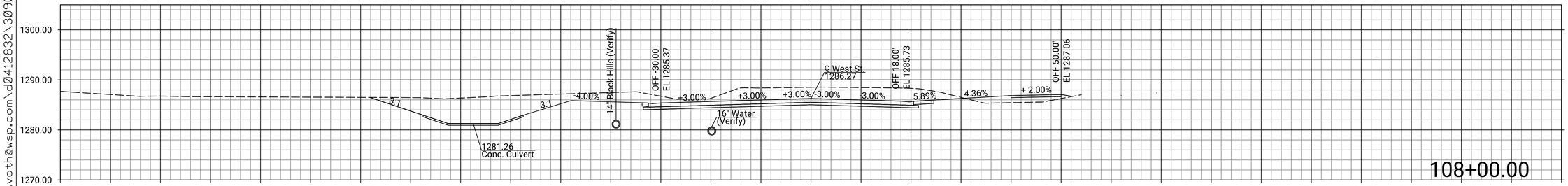

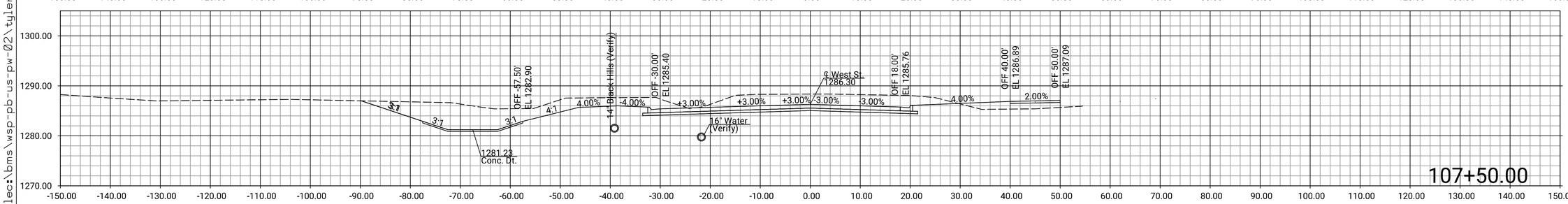

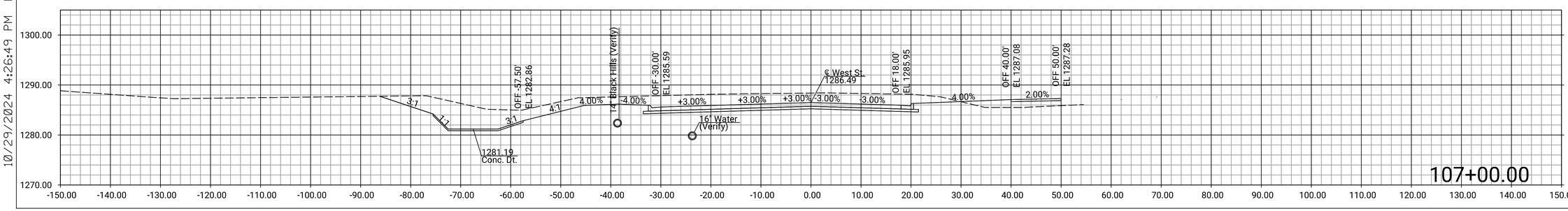

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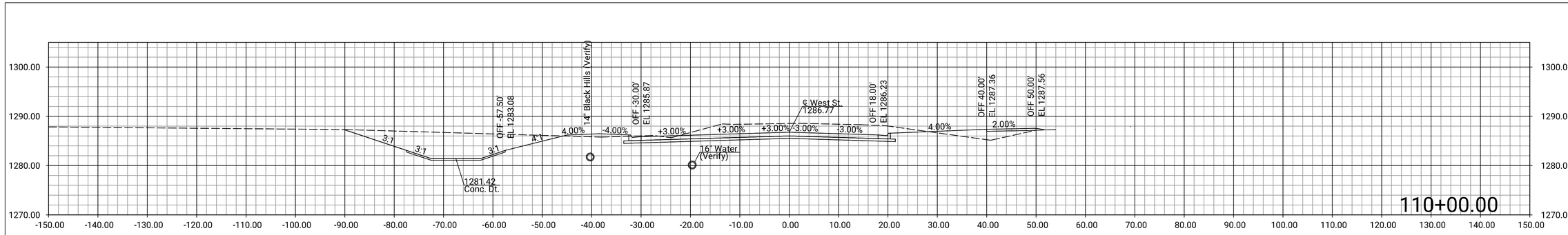

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		REVISIONS

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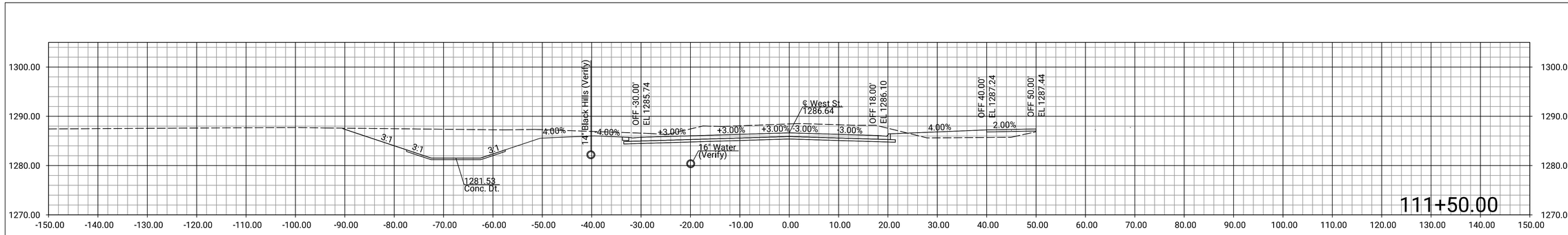

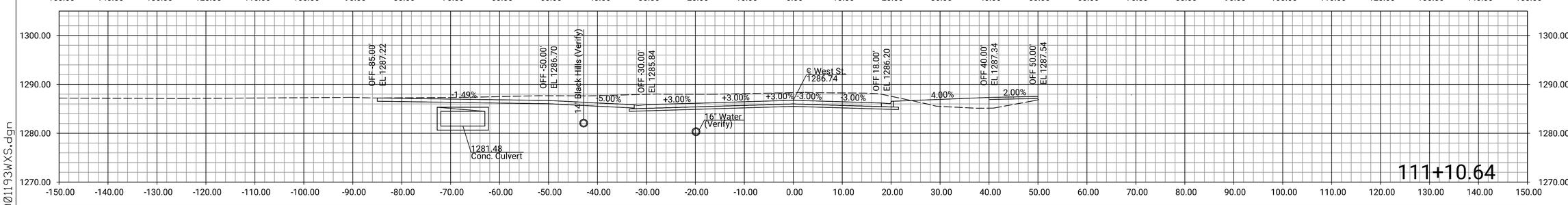

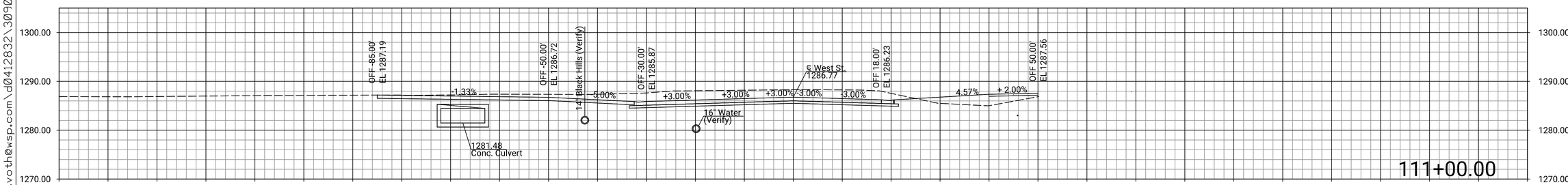

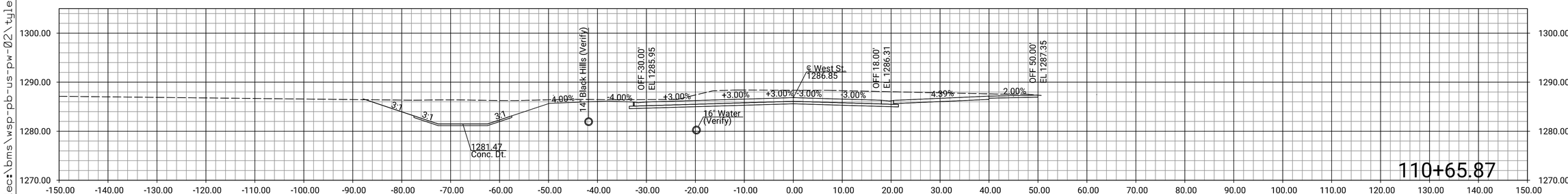

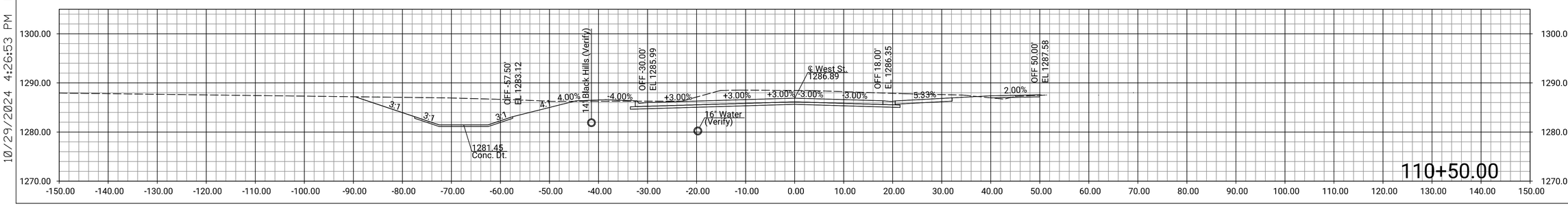

CITY OF WICHITA

WSP

WEST STREET - I-235 TO MACARTHUR
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NO.	DATE	REVISIONS	DESCRIPTION

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DATE:	10/9/2024
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SHEET NO
114
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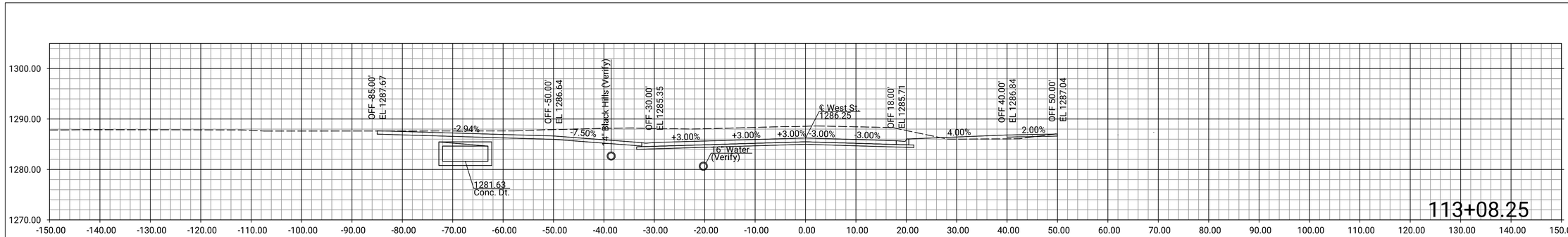

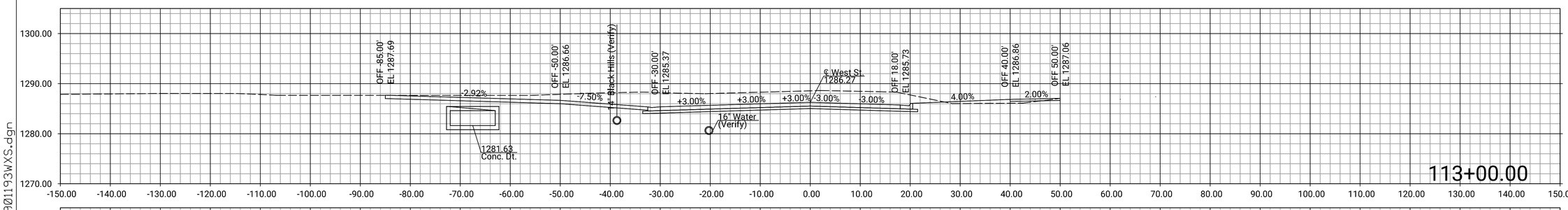

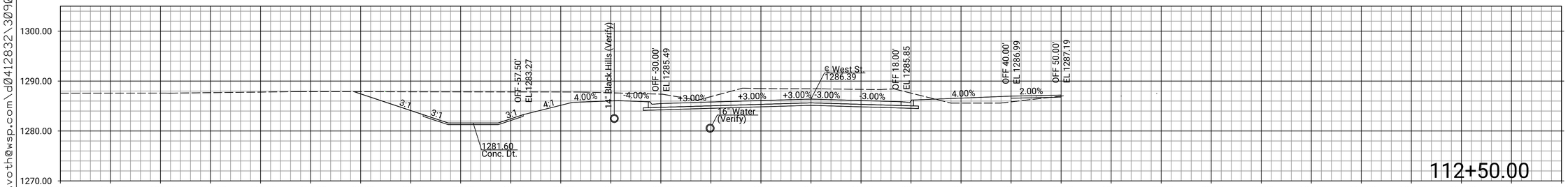

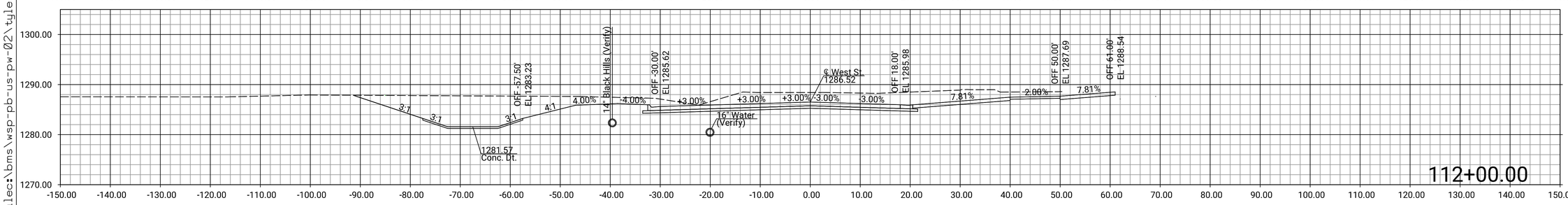

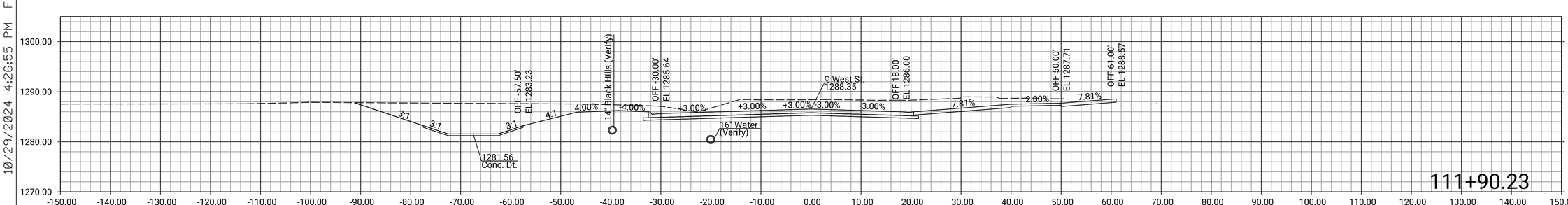

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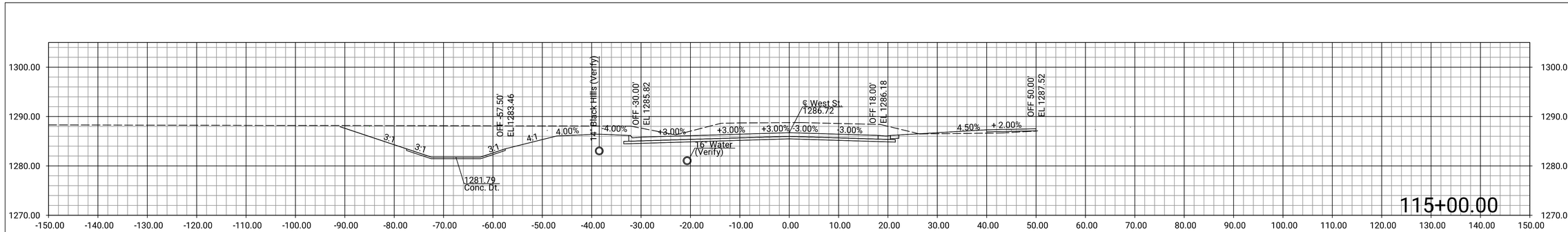

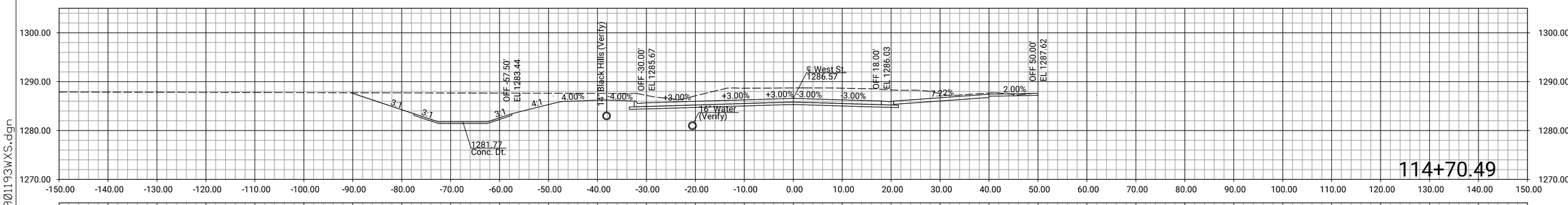

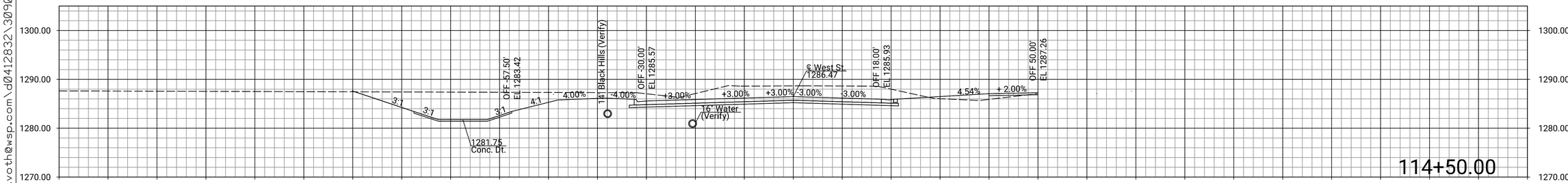

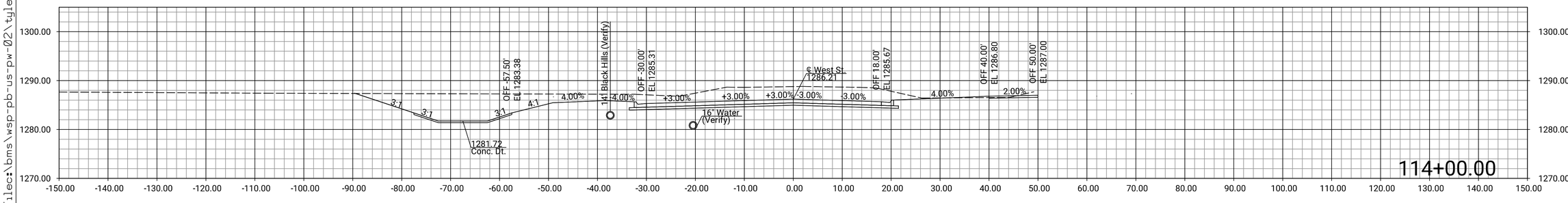

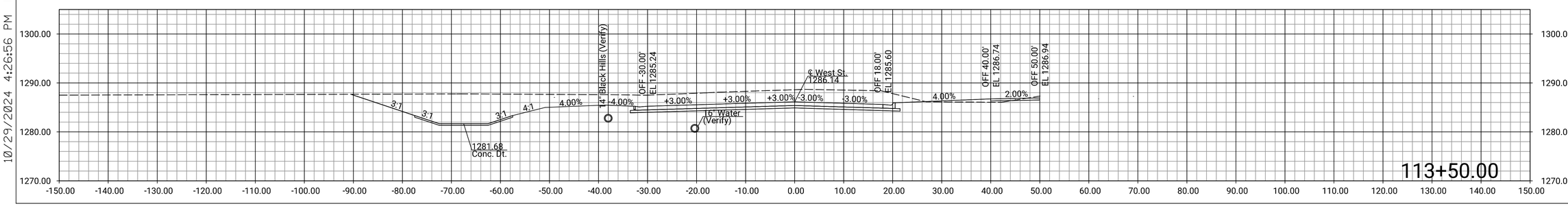

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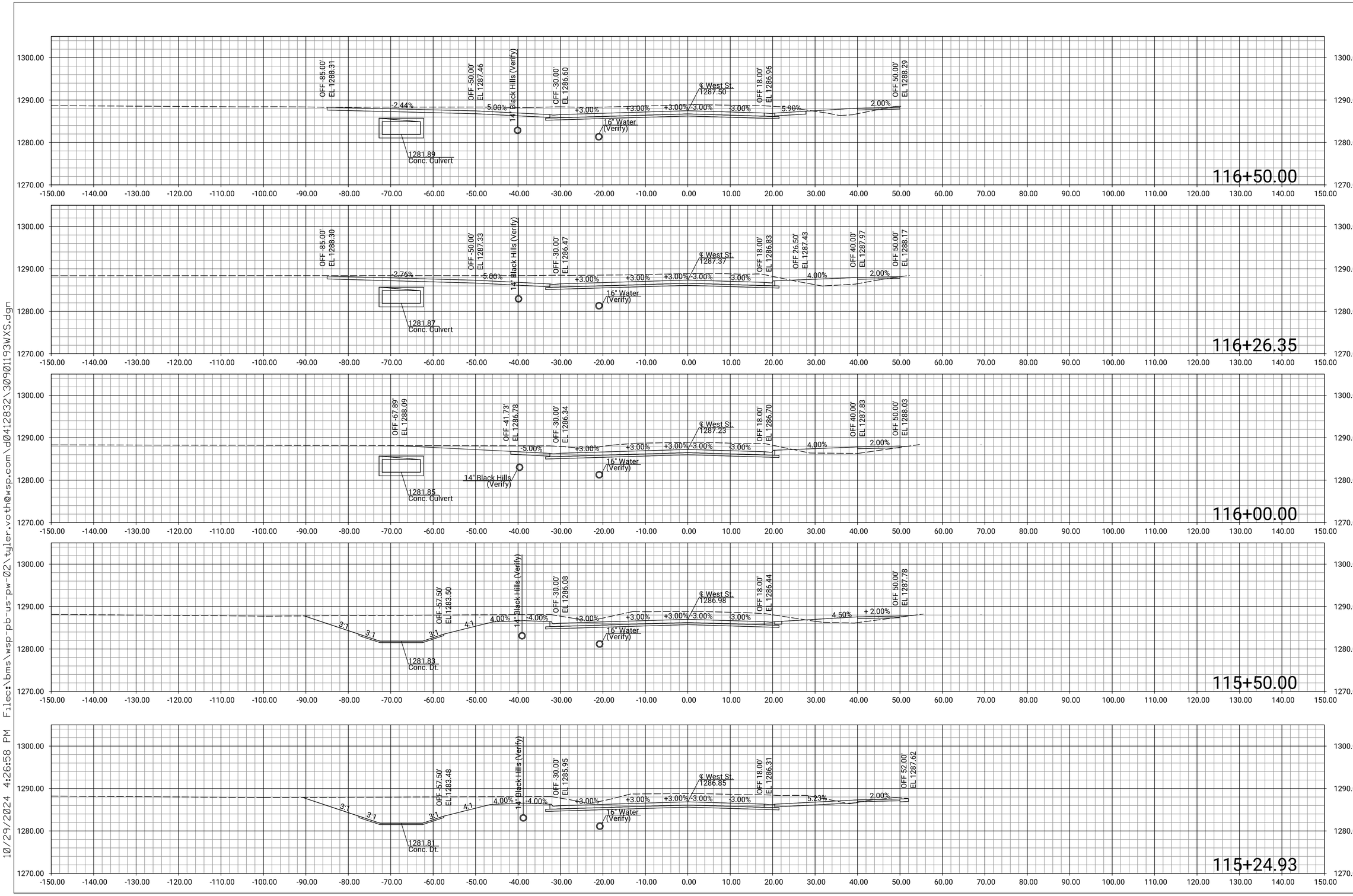

CITY OF WICHITA

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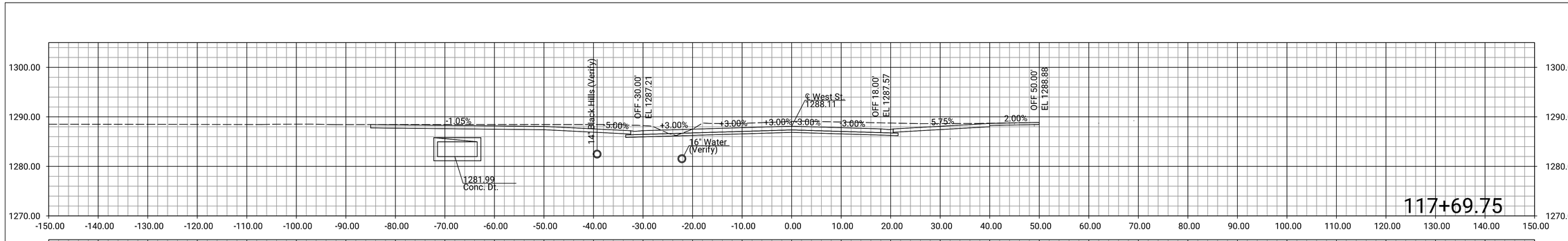

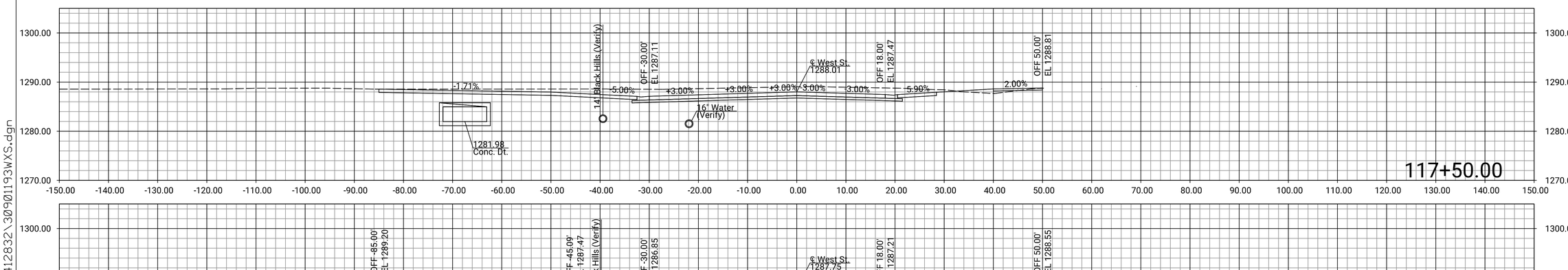

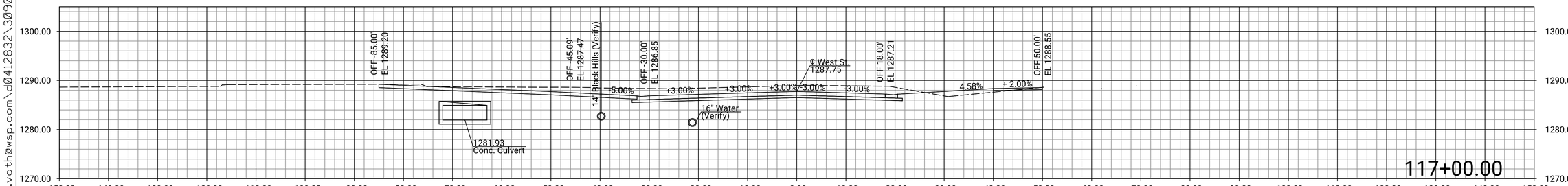

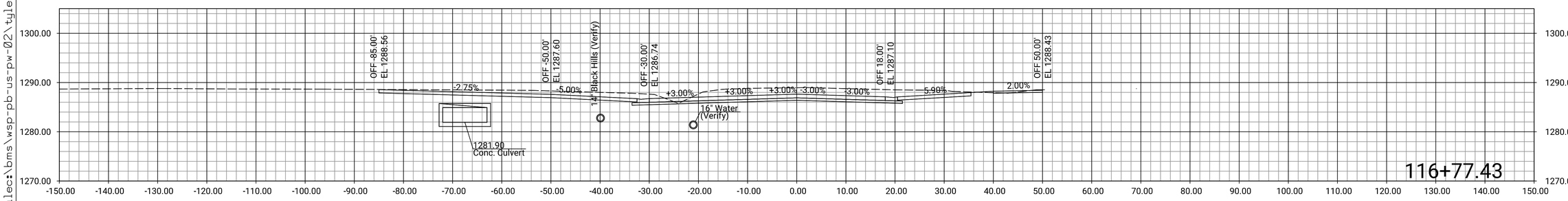

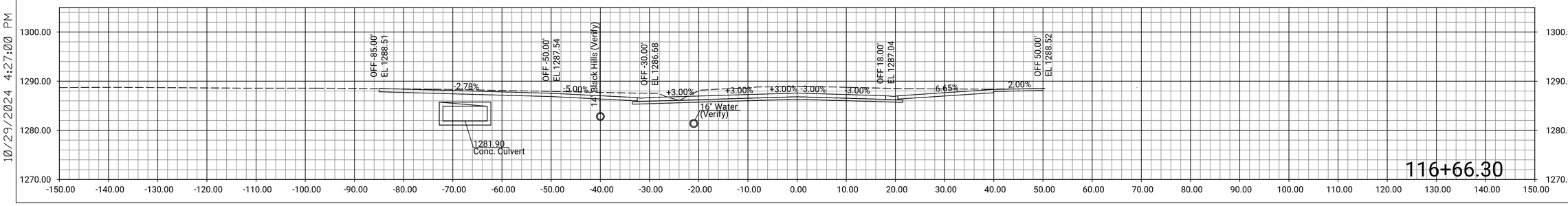

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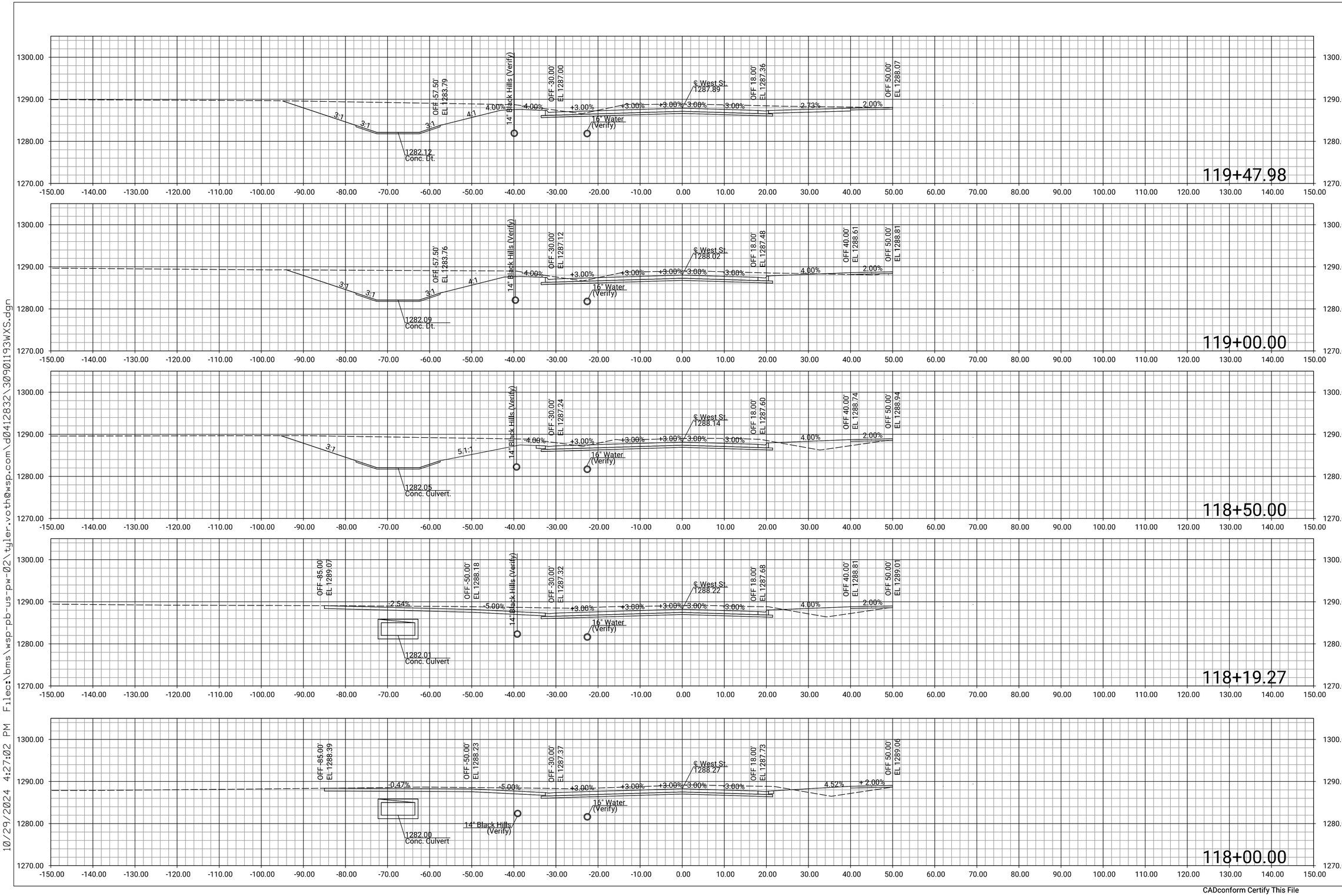

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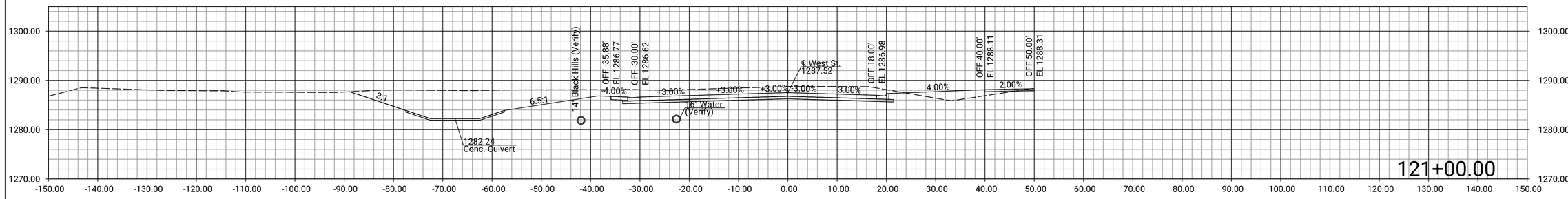

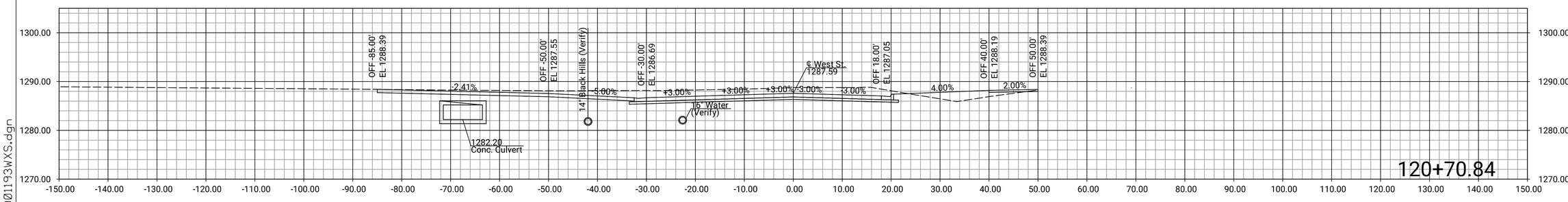

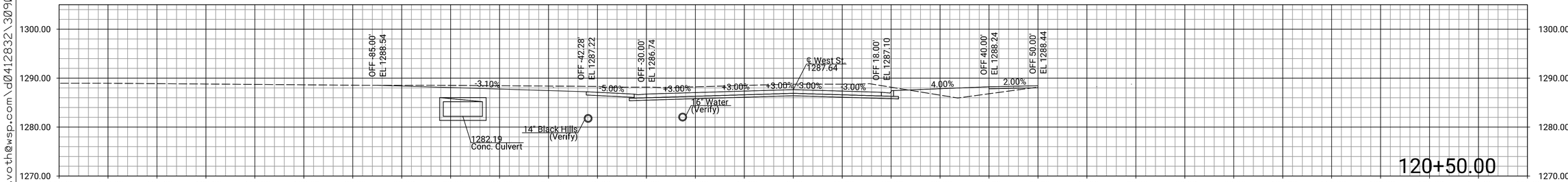

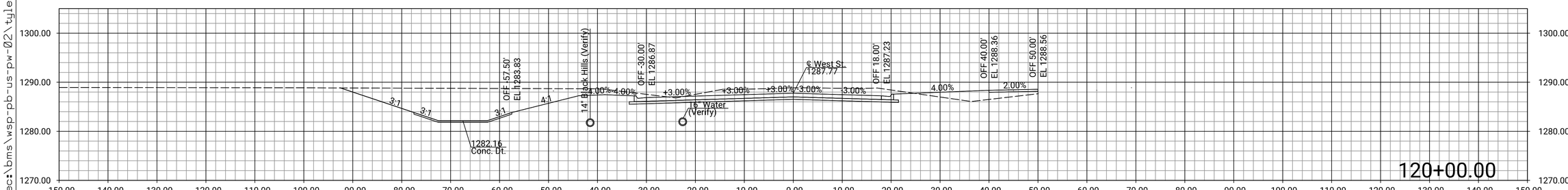

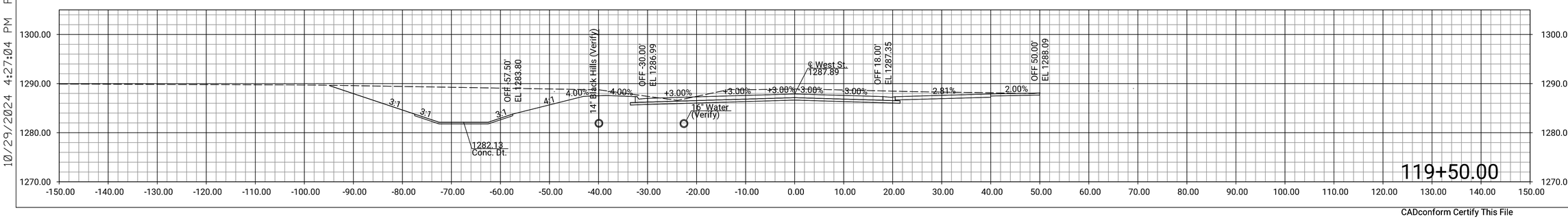

WEST STREET - I-235 TO MACARTHUR

WEST STREET CROSS SECTIONS

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
SCALE:	AS NOTED
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
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SHEET 120 OF 128

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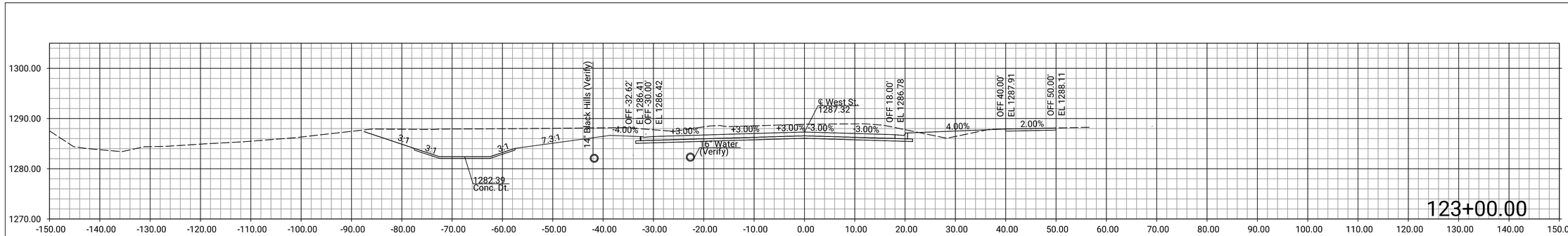

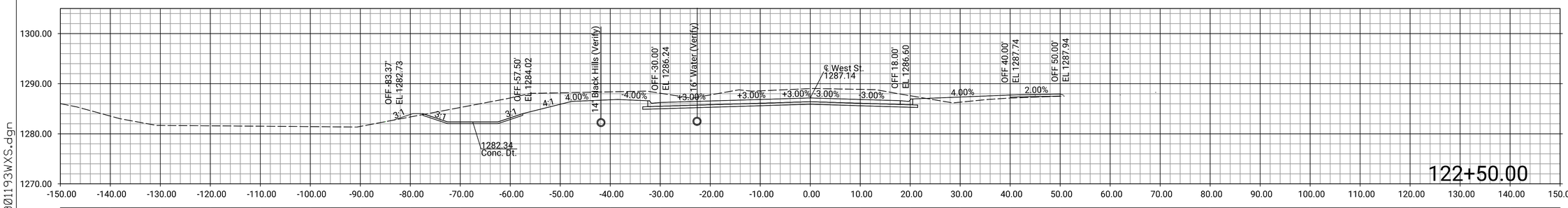

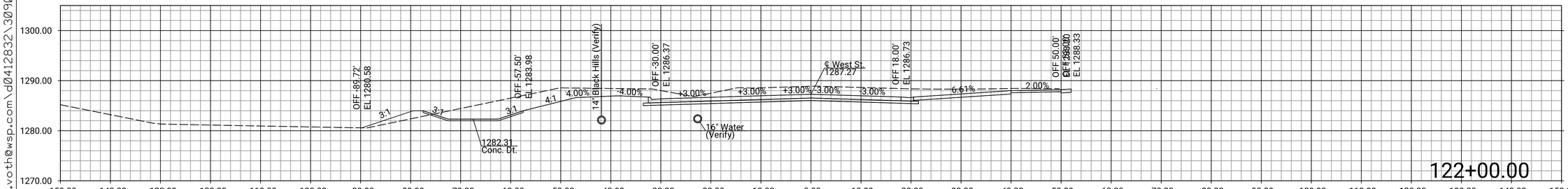

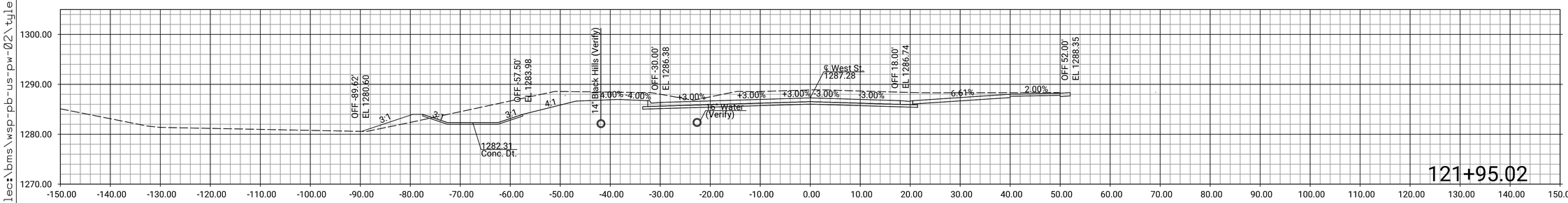

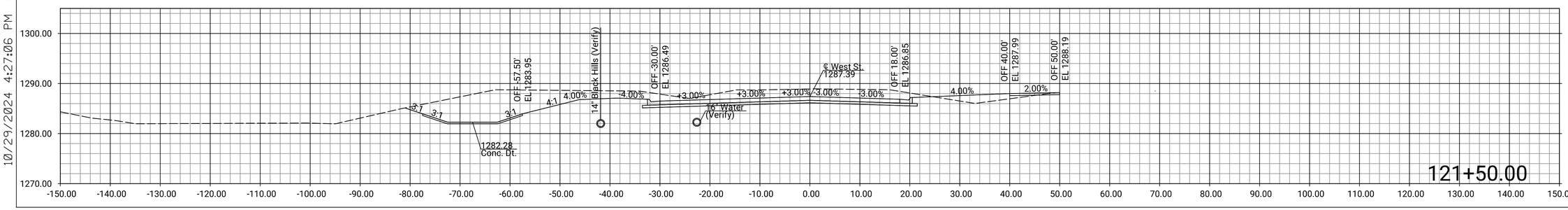

CITY OF WICHITA

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WEST STREET - I-235 TO MACARTHUR

WEST STREET CROSS SECTIONS

NO.	DATE	DESCRIPTION
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DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
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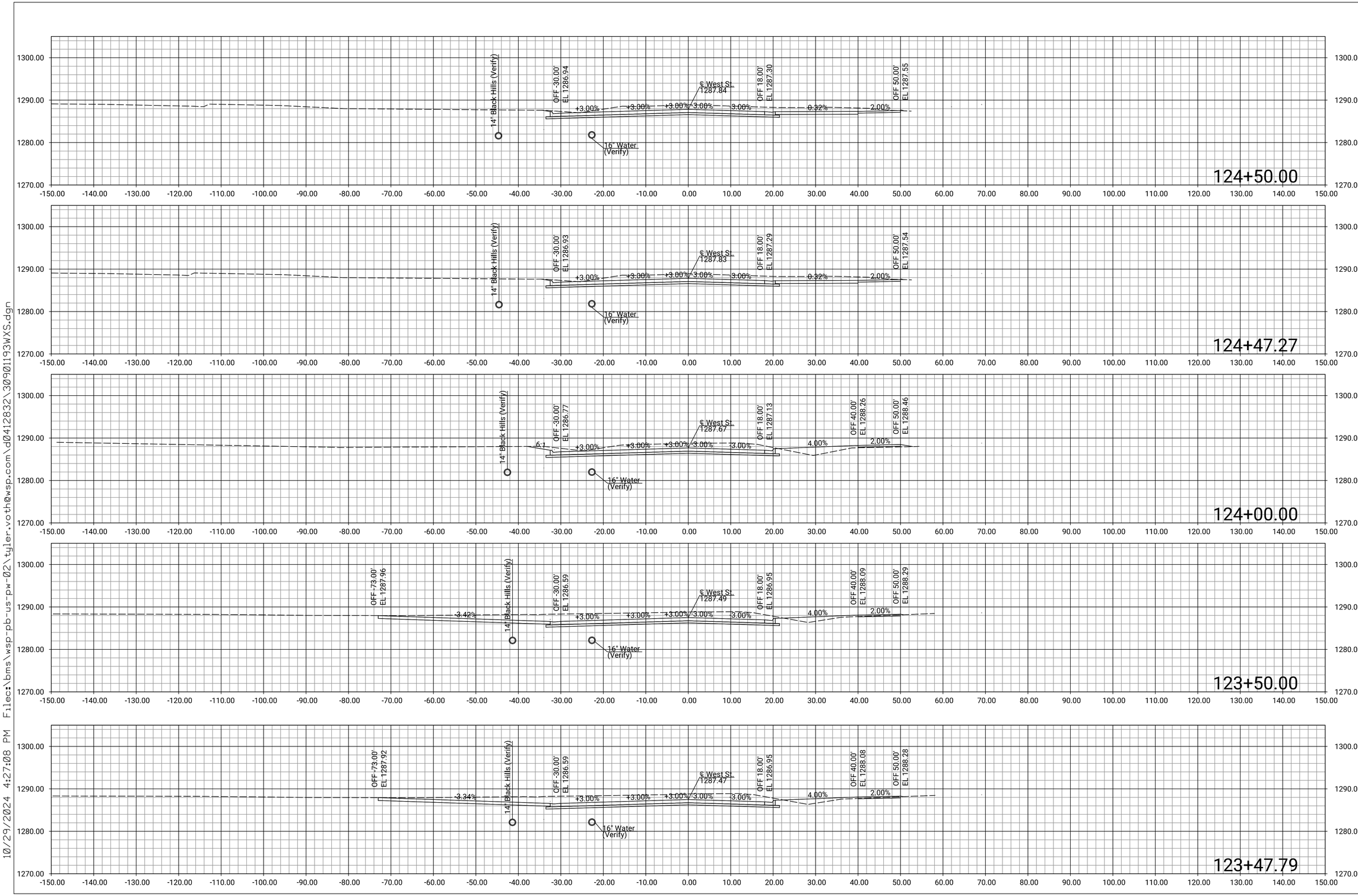
SHEET 121 OF 128



WEST STREET - I-235 TO MACARTHUR

WEST STREET CROSS SECTIONS

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CHECKED BY:	TPV
YEAR:	2024

SHEET NO
122
SHEET 122 OF 128

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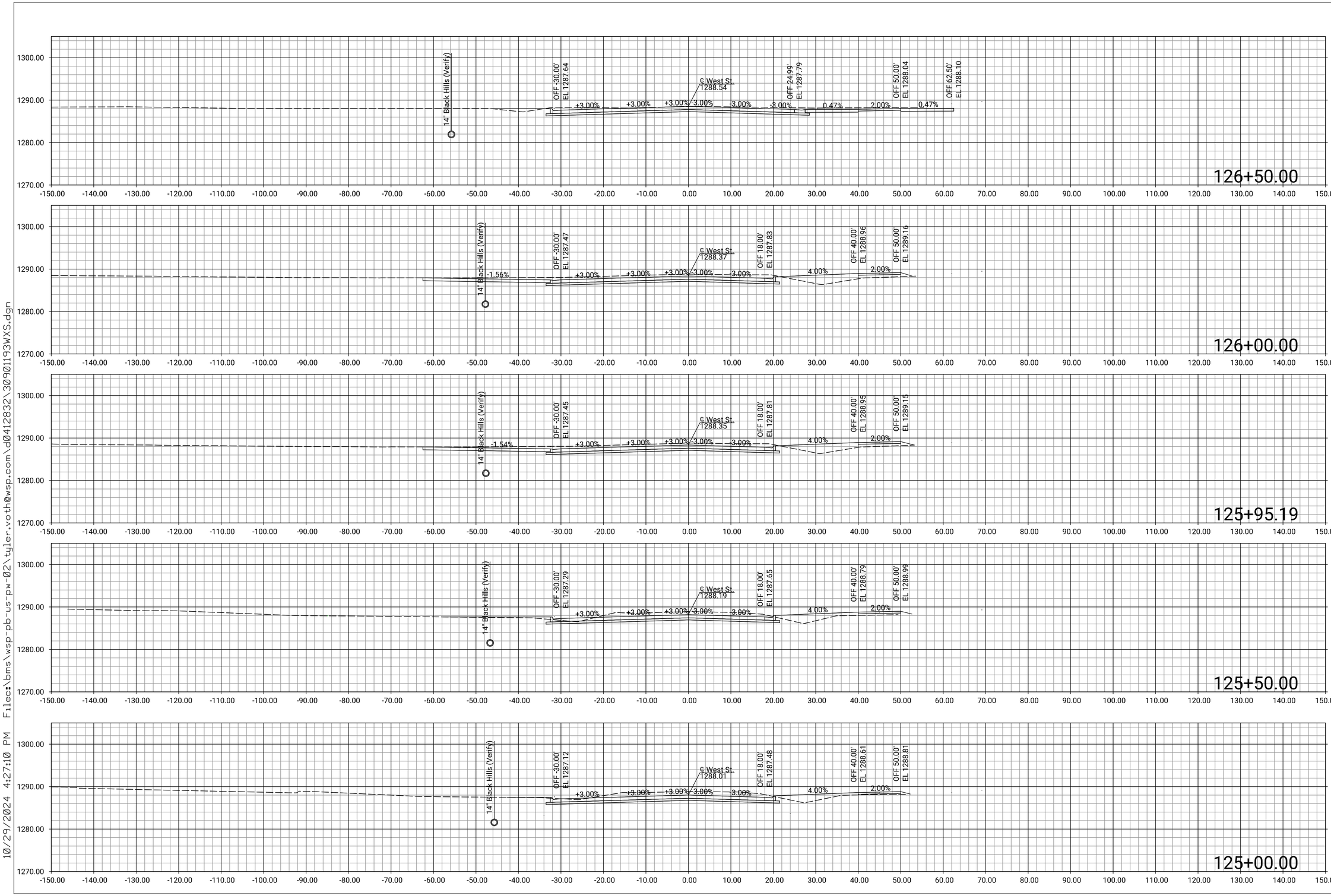

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WEST STREET - I-235 TO MACARTHUR

WEST STREET CROSS SECTIONS

REVISIONS		
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YEAR:	2024

SHEET NO
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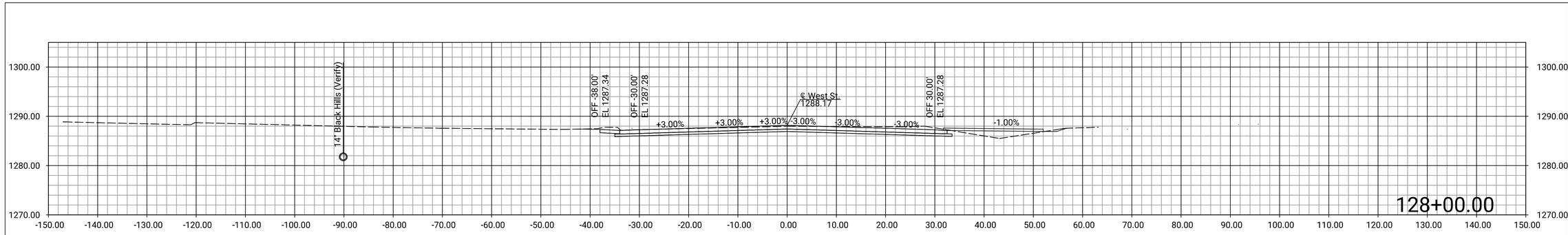
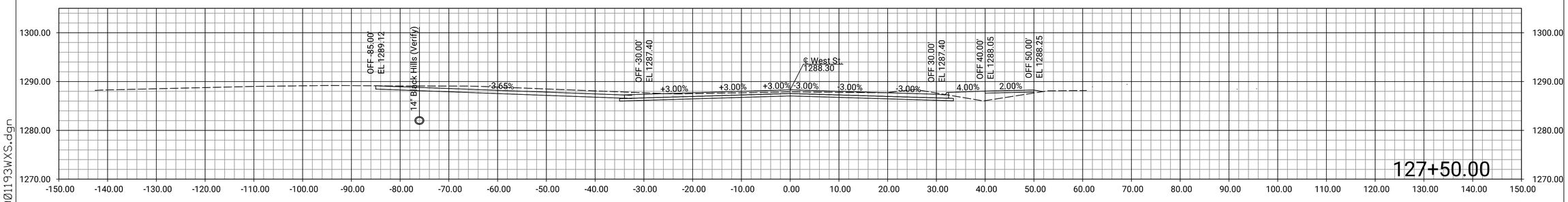
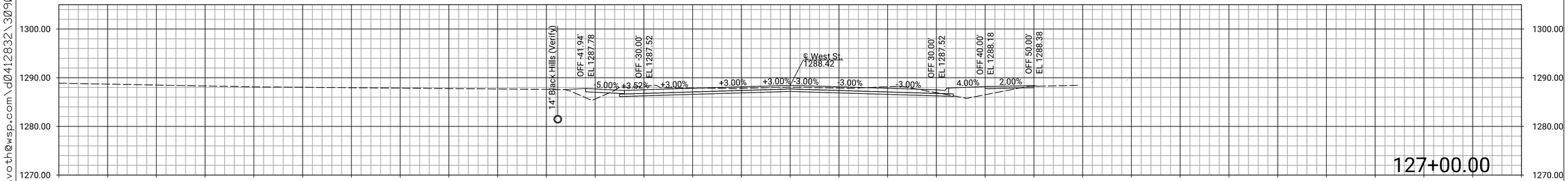
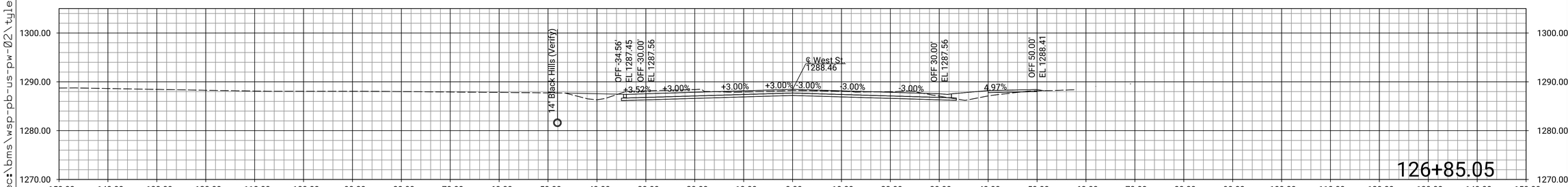
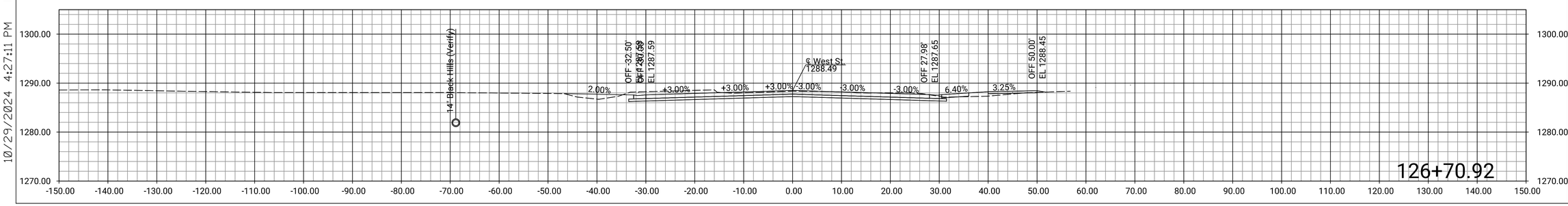
SHEET 123 OF 128











WEST STREET - I-235 TO MACARTHUR

WEST STREET CROSS SECTIONS

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PROJ NO:	30901193
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DATE:	10/9/2024
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DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
124
SHEET 124 OF 128

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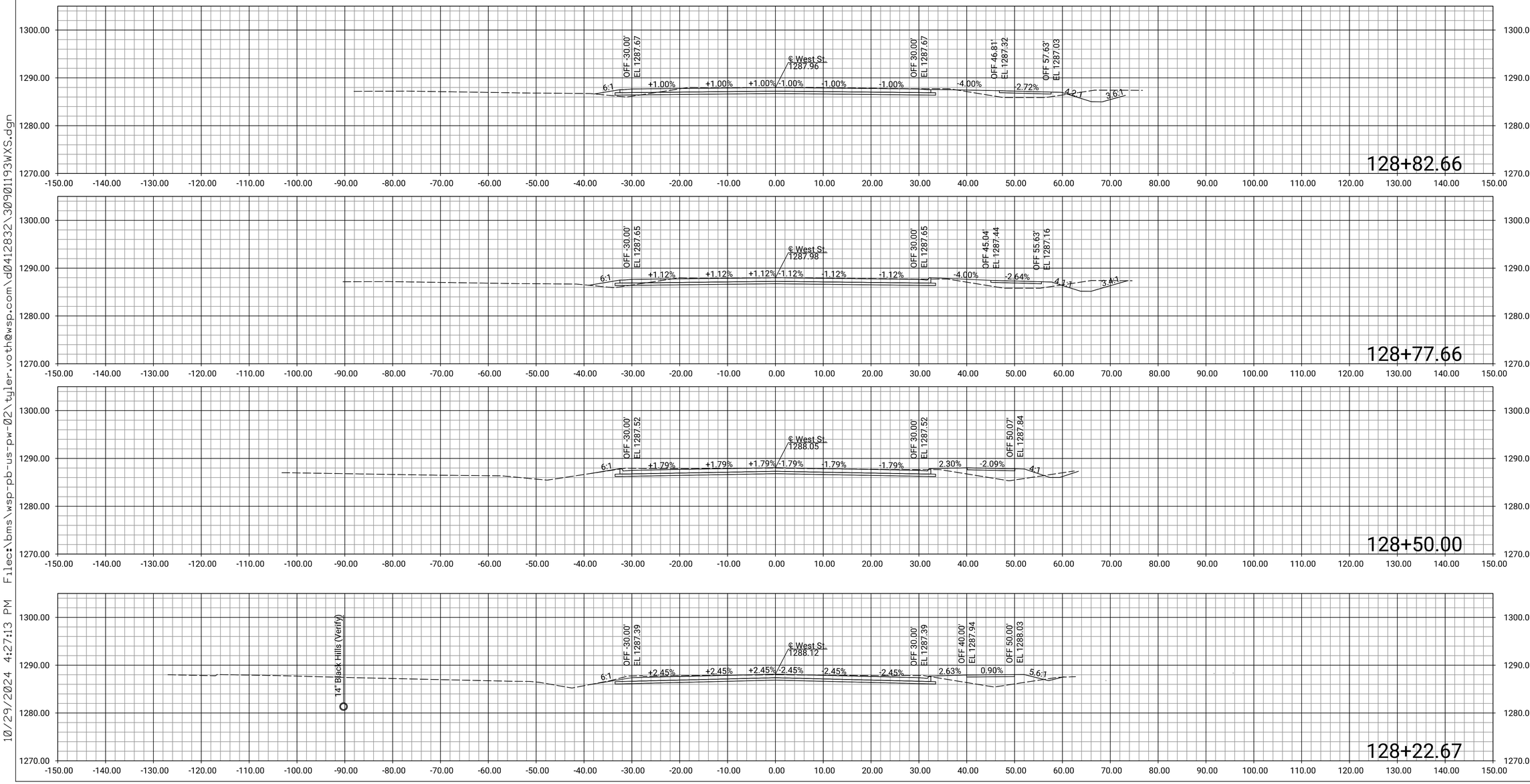

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CITY OF WICHITA

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WEST STREET - I-235 TO MACARTHUR

WEST STREET CROSS SECTIONS

REVISIONS			
NO.	DATE	DESCRIPTION	

PROJ NO:	30901193
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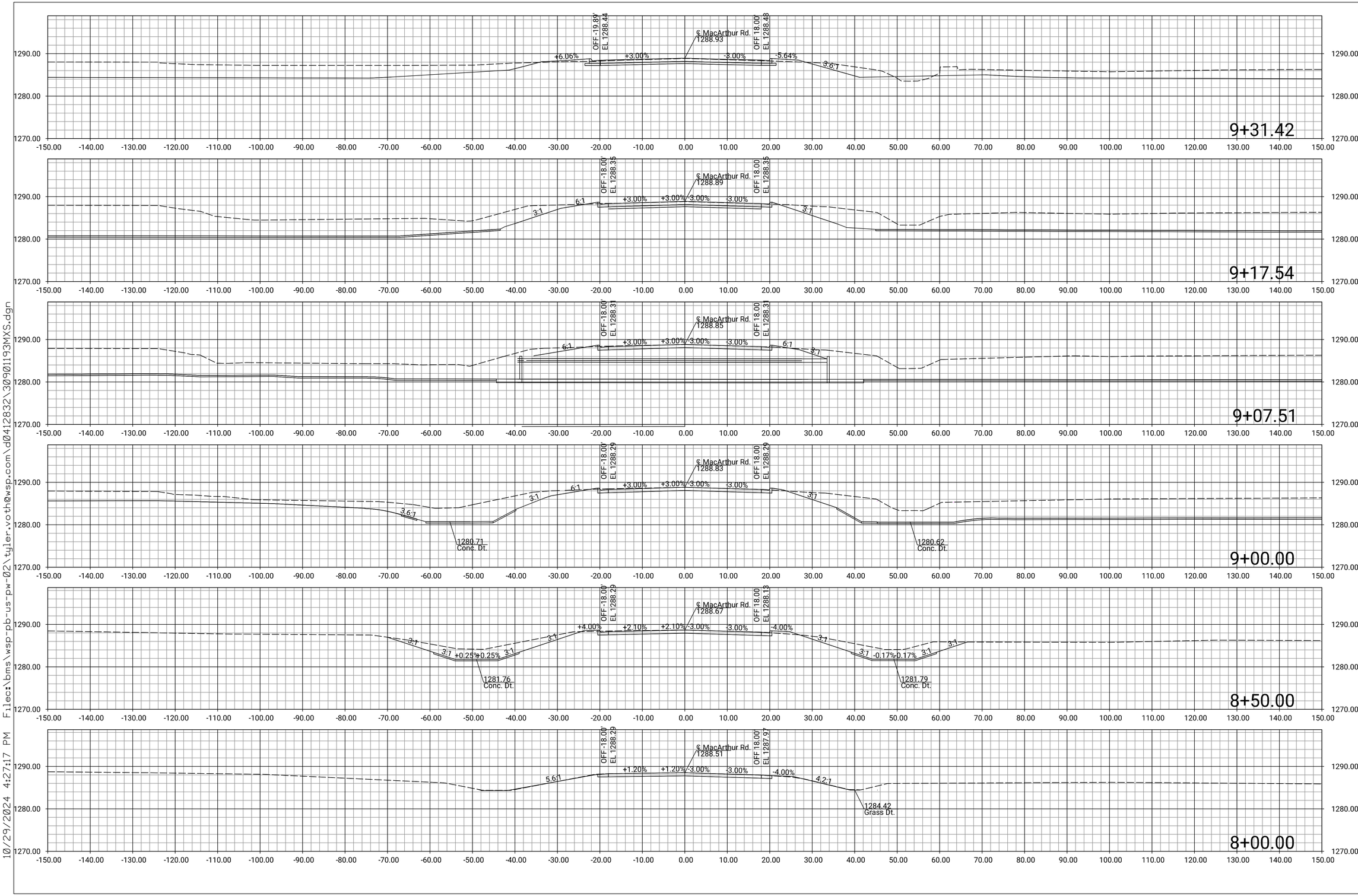
DATE:	10/9/2024
DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO
125
SHEET 125 OF 128



WEST STREET - I-235 TO MACARTHUR

MACARTHUR ROAD CROSS SECTIONS

REVISIONS			
NO.	DATE	DESCRIPTION	

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SCALE:	AS NOTED
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DESIGNED BY:	TPV
DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

SHEET NO

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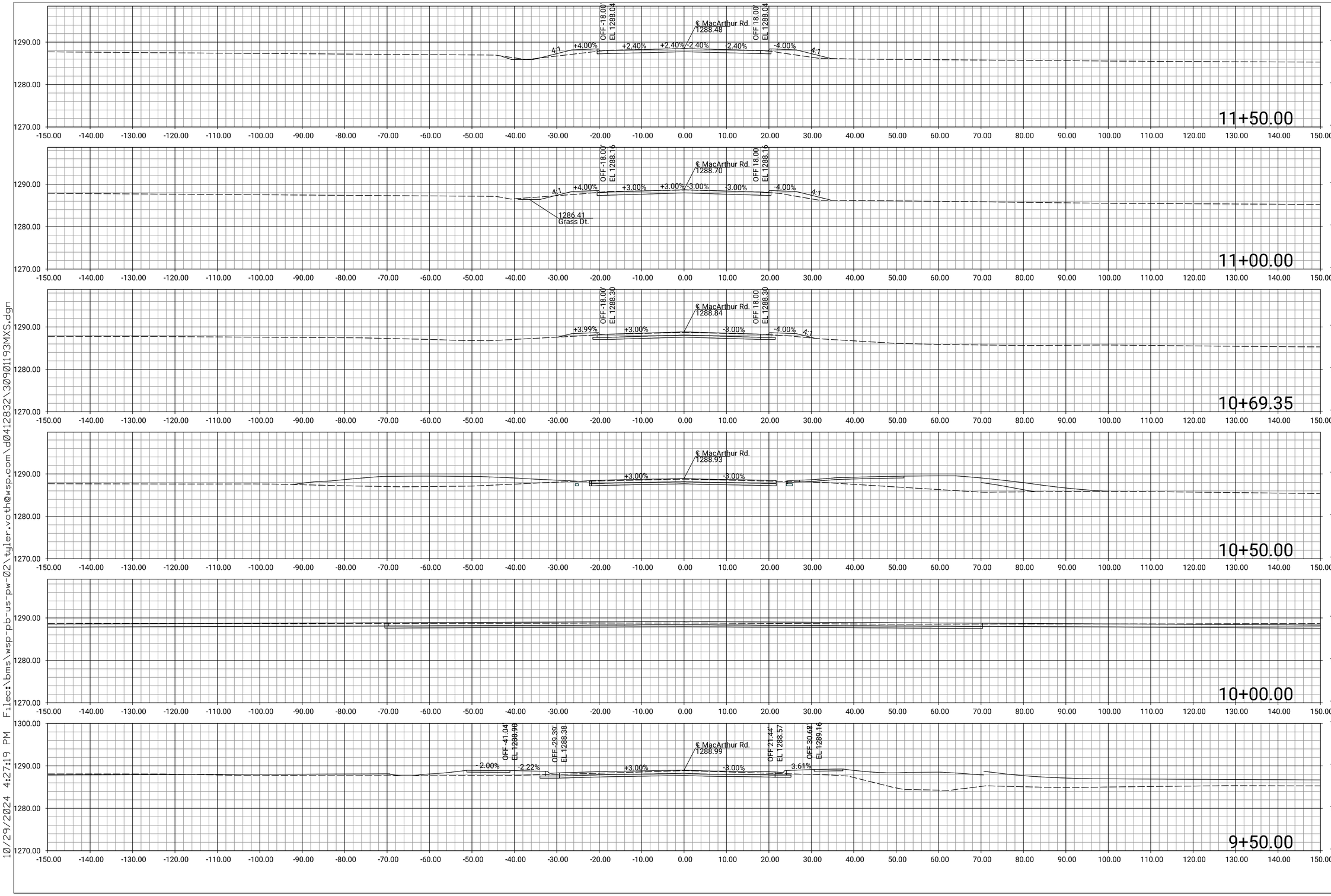

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WEST STREET - I-235 TO MACARTHUR
MACARTHUR ROAD CROSS SECTIONS

REVISIONS	DESCRIPTION	DATE	NO.

PROJ NO:	30901193
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DRAWN BY:	STAFF
CHECKED BY:	TPV
YEAR:	2024

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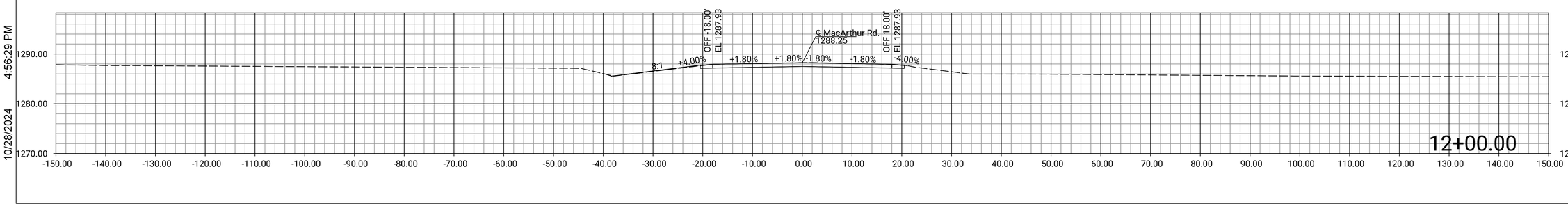
EARTHWORK					
STATION to STATION		EXCAVATION		COMPACTION	
		COMMON		IN FILL (TYPE B) (MR-90)	
		CU.YDS.	VMF		VMF
West Street					
97+00.00	139+15.00	33,663✳	-	3,080	-
MacArthur Road					
8+00.00	9+17.61	555✳	-	44	-
10+69.97	12+00.00	198✳	-	111	-
NET TOTALS		34,416✳		3,235	
EX. PAVEMENT ADJUSTMENT		9,029✳✳			
BID TOTALS		25,387✳✳✳			

✳Earthwork Quantities listed in these tables reflect the existing ground (including pavement) at the time of the survey. Actual Quantities for the Bid Summary shall be reduced by the volume of removed pavement. figured using the following information.

✳✳Estimated Volume of Removal of Existing Pavement figured by assuming pavement thickness shown below

✳✳✳These Quantities have not been adjusted by any factors.

STREET	STATIONS	PAVEMENT THICKNESS (ASSUMED)
West Street	97+00 to 127+10	8" Asphalt
West Street	127+10 to 128+83	9" Concrete



WEST STREET - I-235 TO MACARTHUR
MACARTHUR ROAD
CROSS SECTIONS

REVISIONS		
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