

GRE

JUNE 2025

PROJECT ID:

1130-65-88

COUNTY:

OUTAGAMIE

WITH: N/A

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control)
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 68



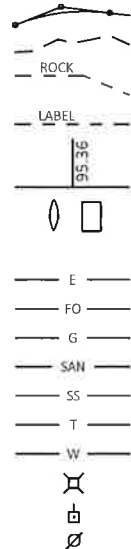
DESIGN DESIGNATION

A.A.D.T.	=	N/A
A.A.D.T.	=	N/A
D.H.V.	=	N/A
D.D.	=	N/A
T.	=	N/A
DESIGN SPEED	=	N/A
ESALS	=	N/A

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

<u>PROFILE</u>	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE	
(To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
<u>UTILITIES</u>	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

APPLETON - DE PERE

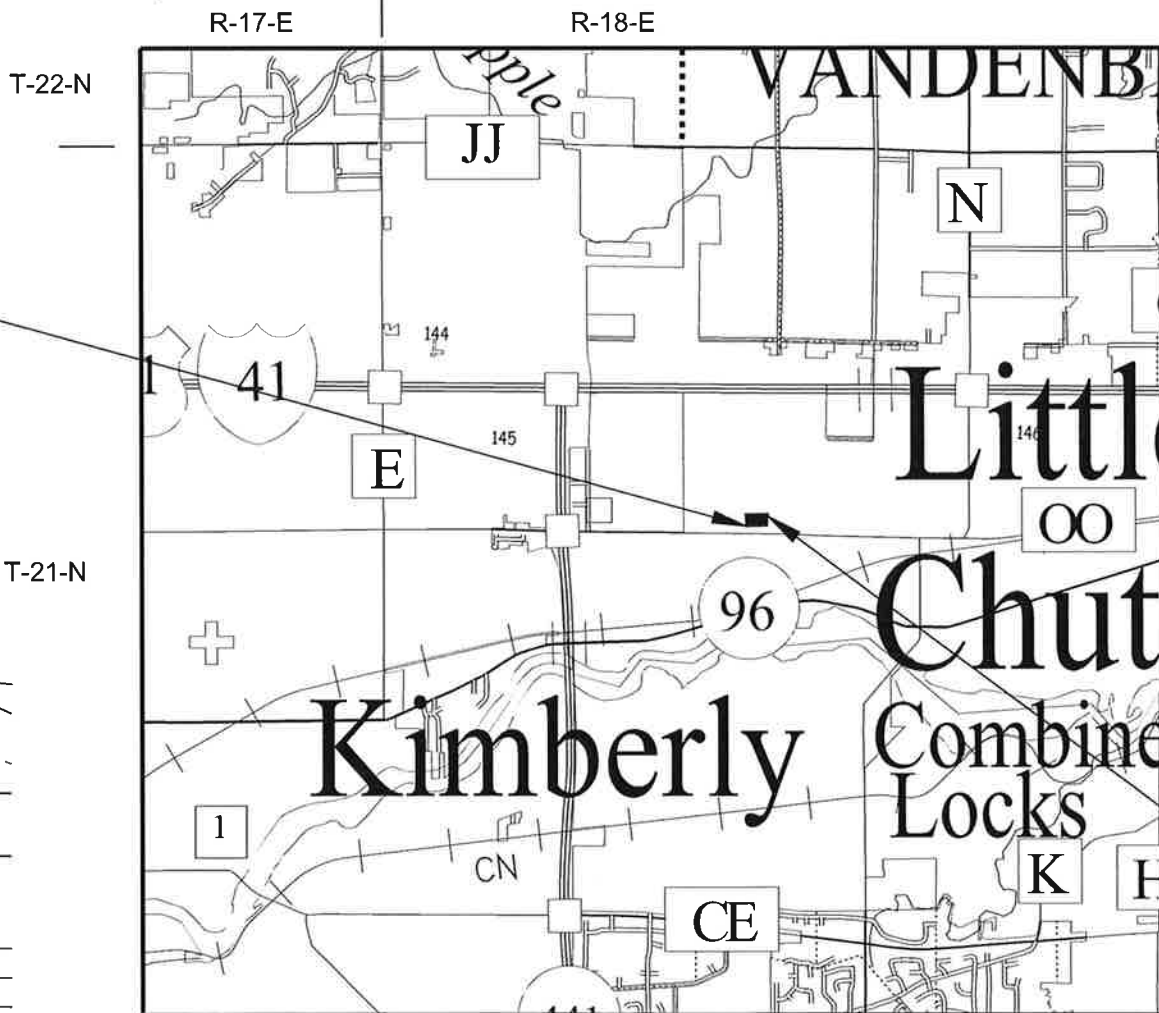
SALT STORAGE FACILITY

NON HWY

OUTAGAMIE COUNTY

STATE PROJECT NUMBER

1130-65-88



LAYOUT
SCALE 0 1.0 MI

TOTAL NET LENGTH OF CENTERLINE = N/A

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), OUTAGAMIE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT

1130-65-88

FEDERAL PROJECT

PROJECT

CONTRACT

ORIGINAL PLANS PREPARED BY
STRAND ASSOCIATES, INC.



DATE: 3-11-2025

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor WISDOT NE REGION
Designer STRAND ASSOCIATES, INC.
Project Manager SCOTT EBEL, P.E.
Regional Examiner WISDOT NE REGION
Regional Supervisor KURT PETERS, P.E.

APPROVED FOR THE DEPARTMENT
DATE: 3-11-25

E

GENERAL NOTES:

THE LOCATION OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

ALL EXISTING SIGNS SHALL REMAIN IN PLACE UNLESS THE ENGINEER APPROVES THEIR REMOVAL. ANY SIGNS REMOVED DUE TO CONTRACTOR MEANS AND METHODS SHALL BE REPLACED BY THE CONTRACTOR AT THEIR EXPENSE.

**** ANR PIPELINE CO - GAS/PETROLEUM**
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W3925 PIPELINE LANE
EDEN, WI 53019
PHONE: (920) 477-2235
todd_brister@tcenergy.com

**** AT&T WISCONSIN - COMMUNICATION LINE**
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GREEN BAY, WI 54301
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kw715w@att.com

**** KAUKAUNA UTILITIES - ELECTRICITY**
BILL MENTING
777 ISLAND ST
KAUKAUNA, WI 54130
PHONE: (920) 462-0222
bmenting@ku-wi.org

OTHER CONTACTS

**** AAMFON - COMMUNICATION LINE**
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531 NORTH MORRISON STREET
APPLETON, WI 54911
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sargentjoseph@aasd.k12.wi.us

UTILITY CONTACTS

**** LITTLE CHUTE MUNICIPAL WATER DEPT - COMMUNICATION LINE**
KENT TAYLOR
108 WEST MAIN STREET
LITTLE CHUTE, WI 54140
PHONE: (920) 423-3865
kent@littlechutewi.org

**** TDS METROCOM LLC - COMMUNICATION LINE**
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525 JUNCTION ROAD
MADISON, WI 53717
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nate.kasten@tdstelecom.com

**** WE ENERGIES - ELECTRICITY**
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APPLETON, WI 54912
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**** WE ENERGIES - GAS/PETROLEUM**
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cody.beckman@we-energies.com

**DENOTES DIGGERS HOTLINE MEMBER



Dial  or (800)242-8511
www.DiggersHotline.com

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIPTURF:	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPETURF:			.25			.27			.28			.30
			.32			.34			.36			.38
PAVEMENT:												
ASPHALT:	.70 - .95											
CONCRETE:	.80 - .95											
BRICK:	.70 - .80											
DRIVES, WALKS:	.75 - .85											
ROOFS:	.75 - .95											
GRAVEL ROADS, SHOULDERS:	.40 - .60											

TOTAL PROJECT AREA = 5.6 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 3.2 ACRES

NE REGION-
DESIGN PROJECT MANAGER

SCOTT EBEL
WISDOT NE REGION
944 VANDERPERREN WAY
GREEN BAY, WI 54304
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SCOTT.EBEL@DOT.WI.GOV

DESIGN CONSULTANT

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OUTAGAMIE COUNTY

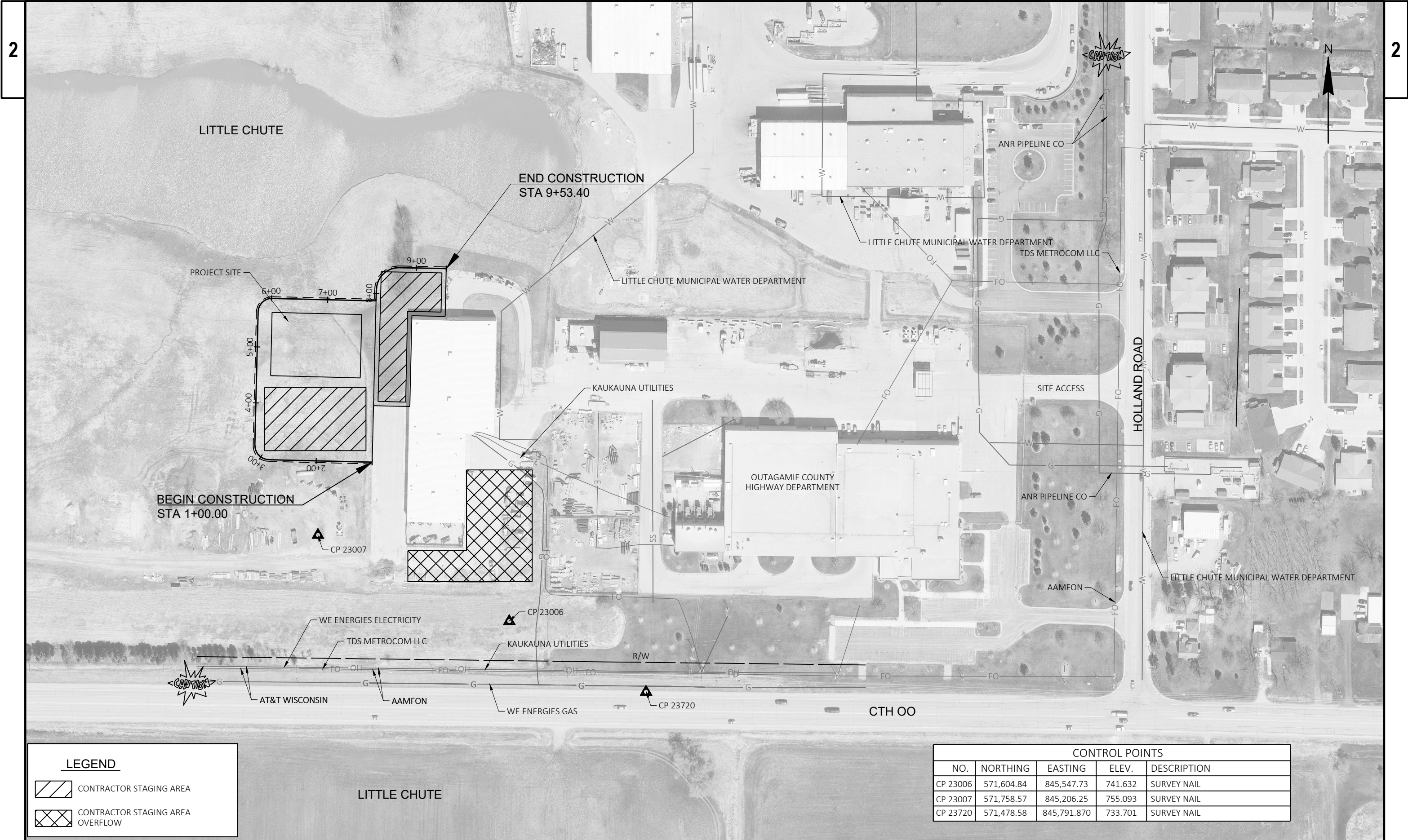
JOE ZELLMER
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1313 HOLLAND ROAD
APPLETON, WI 54911
(920) 832-5673
JOSEPH.ZELLMER@OUTAGAMIE.ORG

DNR LIASON

MATTHEW SCHAEVE
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GREEN BAY, WI 54313
(920) 366-1544
MATTHEW.SCHAEVE@WISCONSIN.GOV



PROJECT NO: 1130-65-88	HWY: IH 41	COUNTY: OUTAGAMIE	PROJECT OVERVIEW	SHEET 3	E
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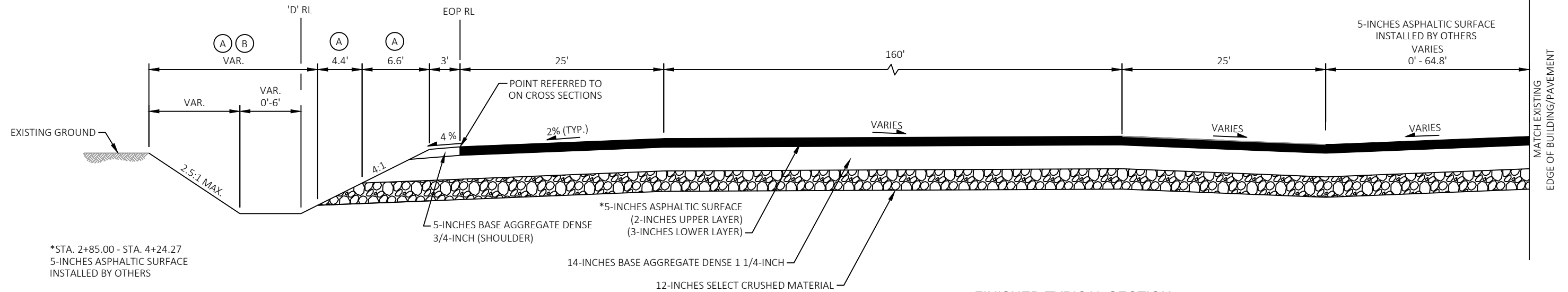


LEGEND

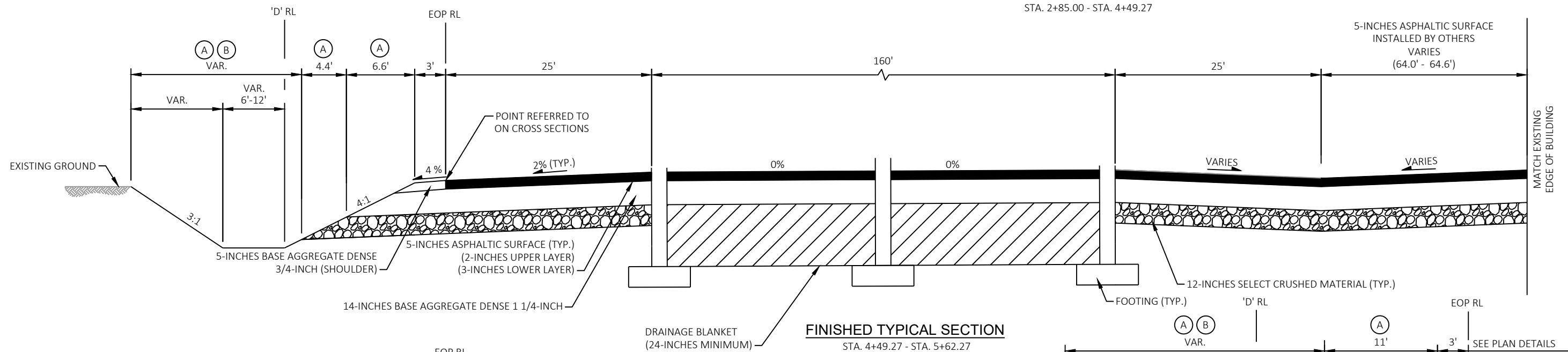
-  CONTRACTOR STAGING AREA
-  CONTRACTOR STAGING AREA OVERFLOW

CONTROL POINTS

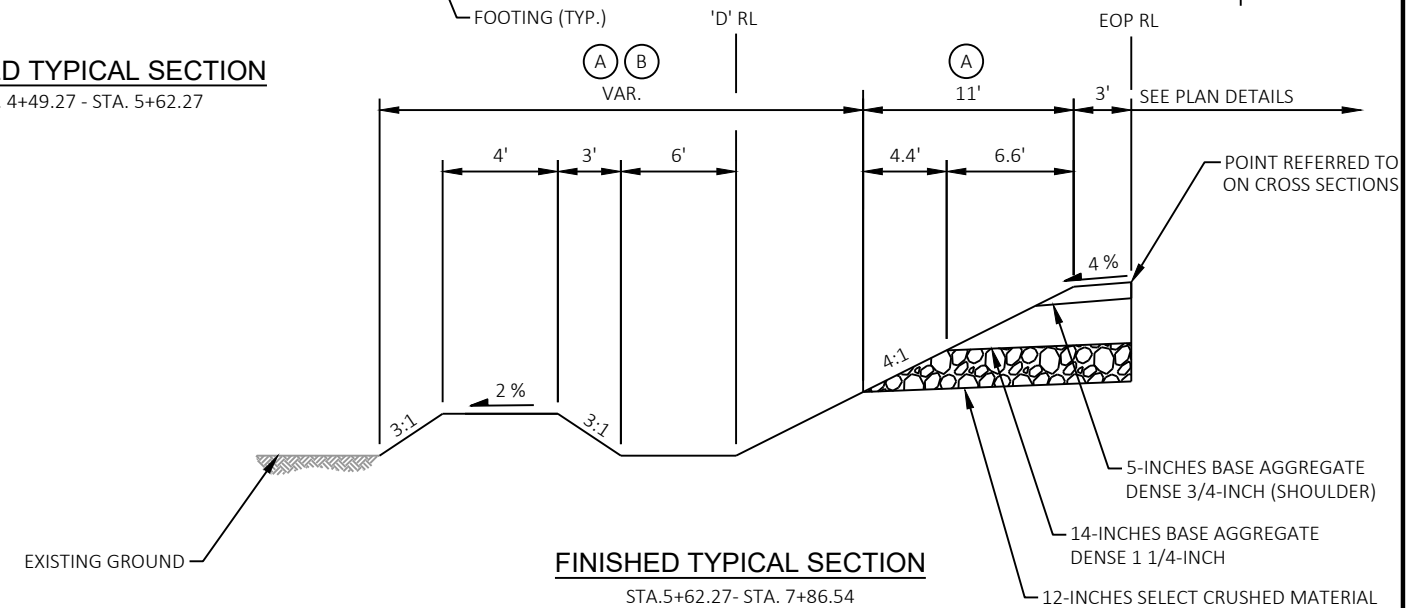
NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
CP 23006	571,604.84	845,547.73	741.632	SURVEY NAIL
CP 23007	571,758.57	845,206.25	755.093	SURVEY NAIL
CP 23720	571,478.58	845,791.870	733.701	SURVEY NAIL

**FINISHED TYPICAL SECTION**

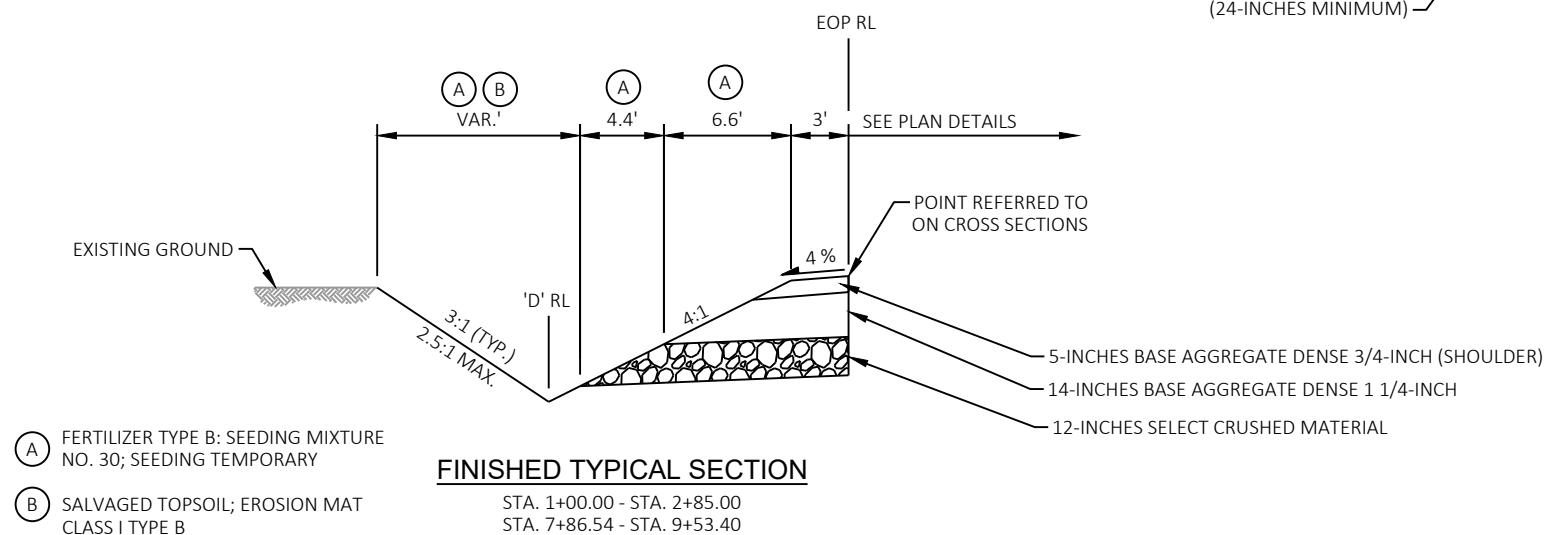
STA. 2+85.00 - STA. 4+49.27

**FINISHED TYPICAL SECTION**

STA. 4+49.27 - STA. 5+62.27

**FINISHED TYPICAL SECTION**

STA. 5+62.27 - STA. 7+86.54



- (A) FERTILIZER TYPE B; SEEDING MIXTURE
NO. 30; SEEDING TEMPORARY
- (B) SALVAGED TOPSOIL; EROSION MAT
CLASS I TYPE B

PROJECT NO: 1130-65-88

HWY: IH 41

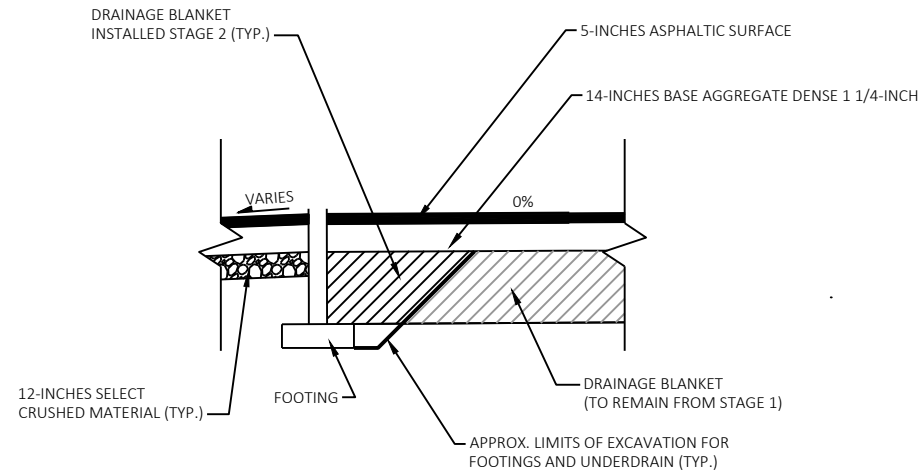
COUNTY: OUTAGAMIE

TYPICAL SECTIONS

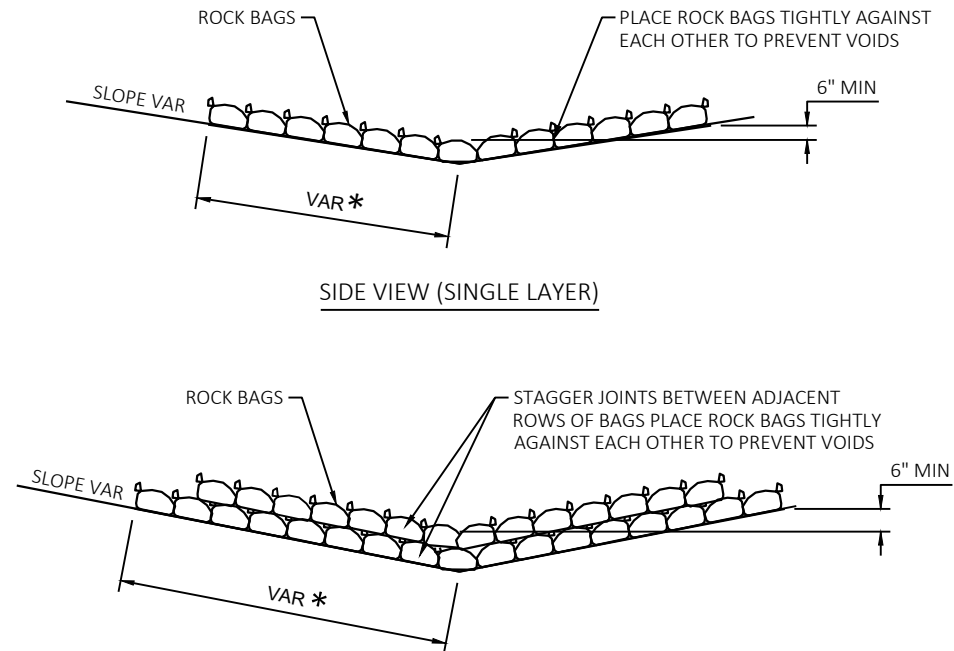
SHEET

5

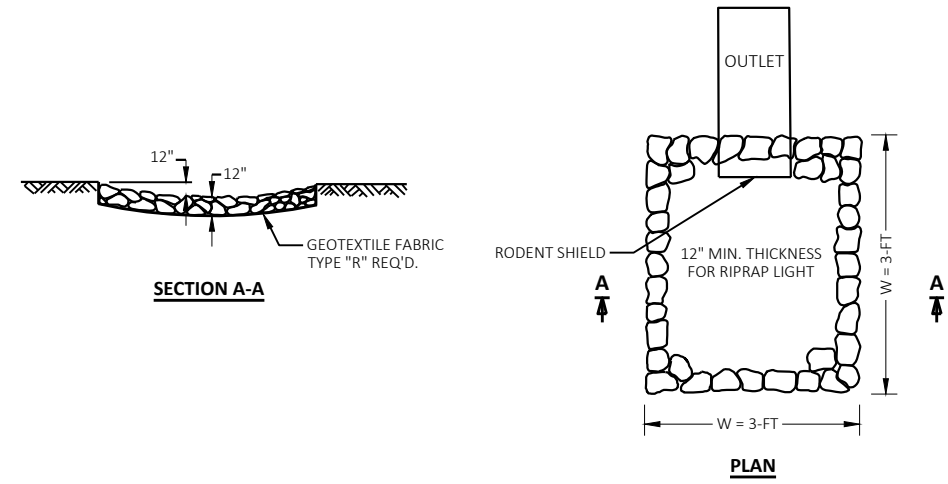
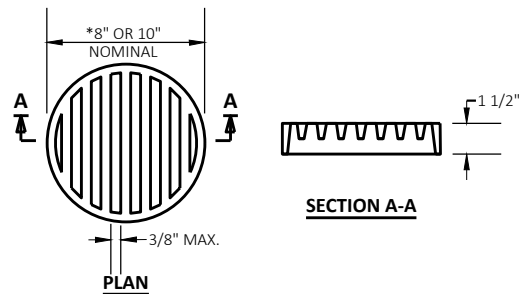
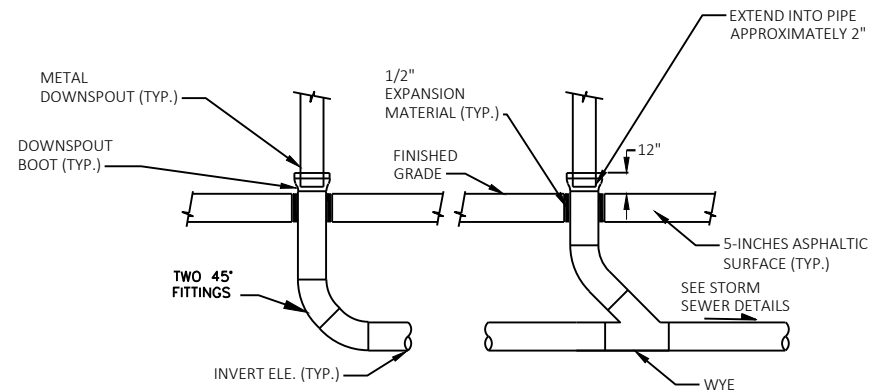
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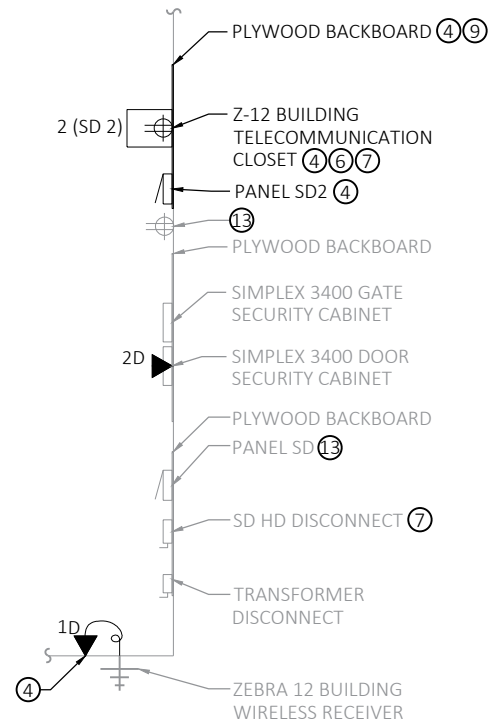
**FOOTING EXCAVATION**

NOT TO SCALE

* LENGTH AND NUMBER OF BAGS MAY VARY
DEPENDING ON DESIRED DEPTH OF WATER POOL**ROCK BAGS DITCH CHECK**

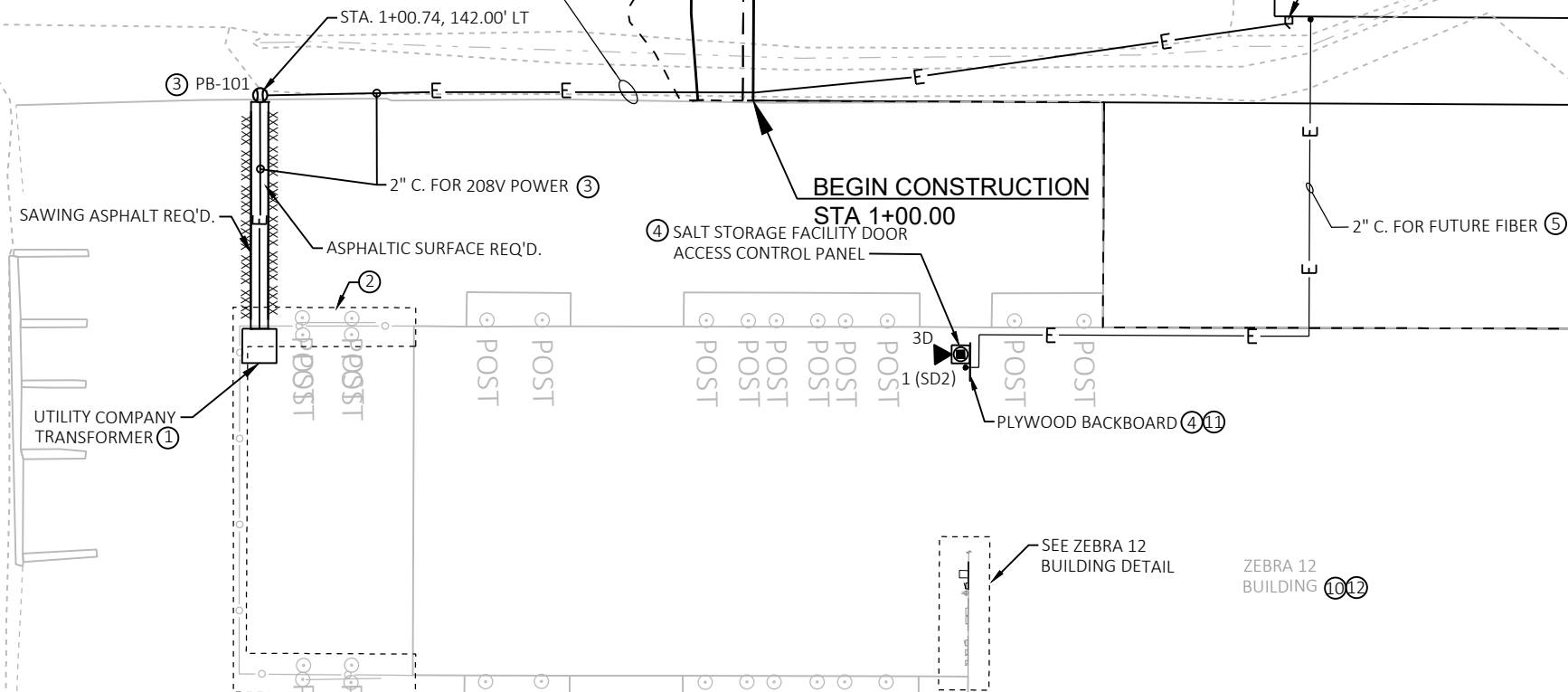
PAID FOR AS ROCK BAGS

**RIPRAP LIGHT TREATMENT AT OUTFALLS*** DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE
COUPLING. ORIENT SO SLOTS ARE VERTICAL.THE RODENT SHIELD, PIPE COUPLING AND SCREWS ARE INCLUDED WITH THE
BID ITEM "STORM SEWER PIPE COMPOSITE 8-INCH" AND "STORM SEWER PIPE
COMPOSITE 10-INCH".THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE
GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING
IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF
THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE
COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET
METAL SCREWS.**RODENT SHIELD**ALL PIPE COUPLINGS, BOOTS, EXPANSION MATERIAL, BENDS,
WYES, AND CAPS ARE INCLUDED WITH THE BID ITEM "STORM
SEWER PIPE COMPOSITE 8-INCH" AND "STORM SEWER PIPE
COMPOSITE 10-INCH".PIPE QUANTITIES ARE INCLUSIVE OF THE VERTICAL PORTION
OF THE PIPE RUN.**DOWNSPOUT/STORM SEWER DETAILS****RODENT SHIELD AND DOWNSPOUT/STORM SEWER DETAILS**



ZEBRA 12 BUILDING DETAIL (8)
NO SCALE

SALVAGED TOPSOIL, FERTILIZER TYPE B,
SEEDING MIXTURE NO. 30, AND SEEDING
TEMPORARY REQUIRED FOR GROUND
DISTURBED BY UTILITY SERVICE INSTALLATION

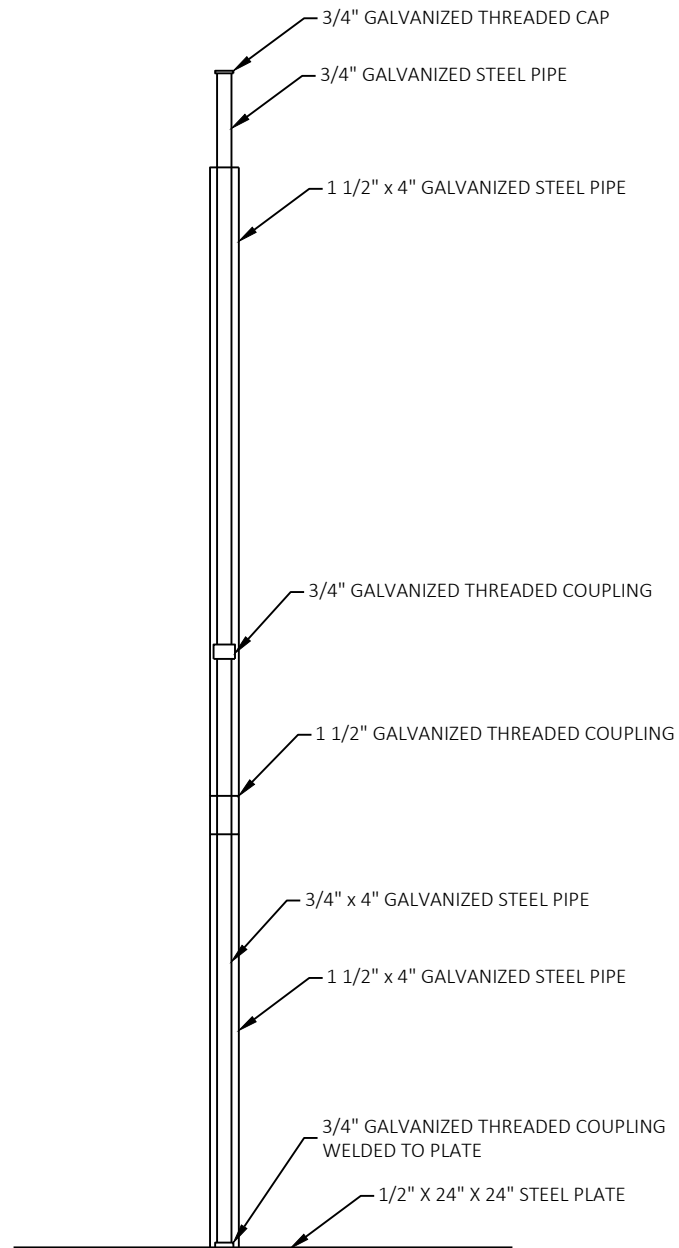


GENERAL NOTES:

1. ONLY MAJOR ELECTRICAL FEEDER ROUTES ARE SHOWN ON THIS DRAWING. CONDUIT ROUTES FOR BRANCH CIRCUITS, COMMUNICATION, AND CONTROL CIRCUITS ARE NOT SPECIFICALLY SHOWN. PROVIDE CONDUIT AND UNDERGROUND PULL BOXES AS REQUIRED FOR ALL OTHER CIRCUITS.

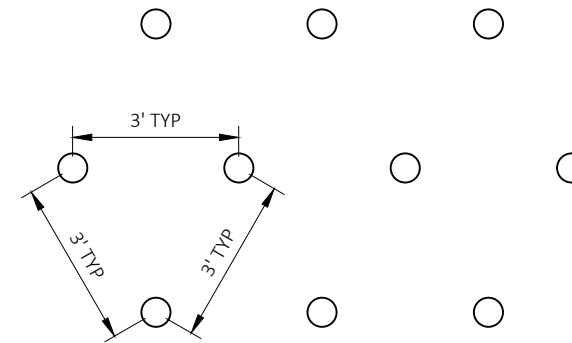
KEY NOTES:

- (1) UTILITY COMPANY TRANSFORMER WILL BE PROVIDED BY UTILITY COMPANY AND DEPARTMENT. TRANSFORMER LOCATION SHOWN IS APPROXIMATE. COORDINATE EXACT LOCATION WITH DEPARTMENT.
- (2) THE FENCE, GATES, AND POSTS SOUTH OF THE ZEBRA 12 BUILDING WILL BE REMOVED BY DEPARTMENT.
- (3) PULL BOX AND UNDERGROUND ELECTRIC ROUTES AND LOCATIONS ARE APPROXIMATE. COORDINATE EXACT LOCATIONS, AS WELL AS FINAL GRADING ALONG EXISTING PAVEMENT WEST EDGE, WITH DEPARTMENT ONSITE.
- (4) EQUIPMENT/DEVICE LOCATION SHOWN IS APPROXIMATE. COORDINATE EXACT LOCATION WITH DEPARTMENT ONSITE. LOCATION SHALL NOT BE DIRECTLY UNDER ANY EXISTING OVERHEAD PIPING, DUCT WORK, ETC.
- (5) CONDUIT SHALL BE ROUTED FROM APPROXIMATELY 84" A.F.F. ABOVE NEW ZEBRA 12 BUILDING ACCESS CONTROL PANEL PLYWOOD BACKBOARD TO 6" A.F.G. OUTSIDE SALT STORAGE FACILITY, AND CAPPED ON EACH END. CONDUIT END LOCATIONS AND ROUTING SHOWN ARE APPROXIMATE. COORDINATE EXACT ROUTING AND END LOCATIONS WITH DEPARTMENT.
- (6) MOUNT RECEPTACLE WITHIN TELECOMMUNICATION CLOSET. COORDINATE EXACT LOCATION WITH DEPARTMENT ONSITE.
- (7) BOND TELECOMMUNICATION CLOSET GROUNDING BUSBAR TO EXISTING SD HD DISCONNECT WITH #6 GROUND CONDUCTOR IN 3/4" CONDUIT. PROVIDE ADDITIONAL GROUND LUGS WITHIN EXISTING DISCONNECT AS REQUIRED.
- (8) NOT ALL EQUIPMENT ALONG WALL IS SHOWN.
- (9) PROVIDE AN 8'-0" WIDE BY 4'-0" HIGH FIRE-RESISTANT EQUIPMENT MOUNTING BACKBOARD AS SPECIFIED IN SECTION 27 10 00 MOUNTED AT SAME HEIGHT AS EXISTING ADJACENT BACKBOARDS.
- (10) ALL CONDUIT PENETRATIONS BETWEEN BUILDING INTERIOR SPACES SHALL BE CONSIDERED FIRE-RATED PENETRATIONS AND SHALL BE SEALED TO MAINTAIN THE EXISTING FIRE RATING.
- (11) PROVIDE A 4'-0" WIDE BY 4'-0" HIGH FIRE-RESISTANT EQUIPMENT MOUNTING BACKBOARD AS SPECIFIED IN SECTION 27 10 00 MOUNTED AT SAME HEIGHT AS EXISTING ADJACENT BACKBOARDS.
- (12) THE NEW AND EXISTING ELECTRICAL/NETWORK PANELS WITHIN THE ZEBRA 12 BUILDING ARE LOCATED WITHIN A CONDITIONED SPACE. ALL OTHER SPACES WITHIN THE ZEBRA 12 BUILDING ARE UNCONDITIONED SPACES.
- (13) THE EXISTING PANEL SD CIRCUIT 25 AND 27 WIRING IS CURRENTLY ROUTED THROUGH A RECEPTACLE WEST OF THE EXISTING PLYWOOD BACKPANELS. THE WIRING ASSOCIATED WITH THESE CIRCUITS SHALL BE DISCONNECTED WITHIN PANEL SD, PULLED BACK TO THE RECEPTACLE, AND REROUTED IN 3/4" CONDUIT TO NEW CIRCUITS IN PANEL SD2 AS INDICATED ON ELECTRICAL SCHEDULES AND DETAILS SHEET E6.2.



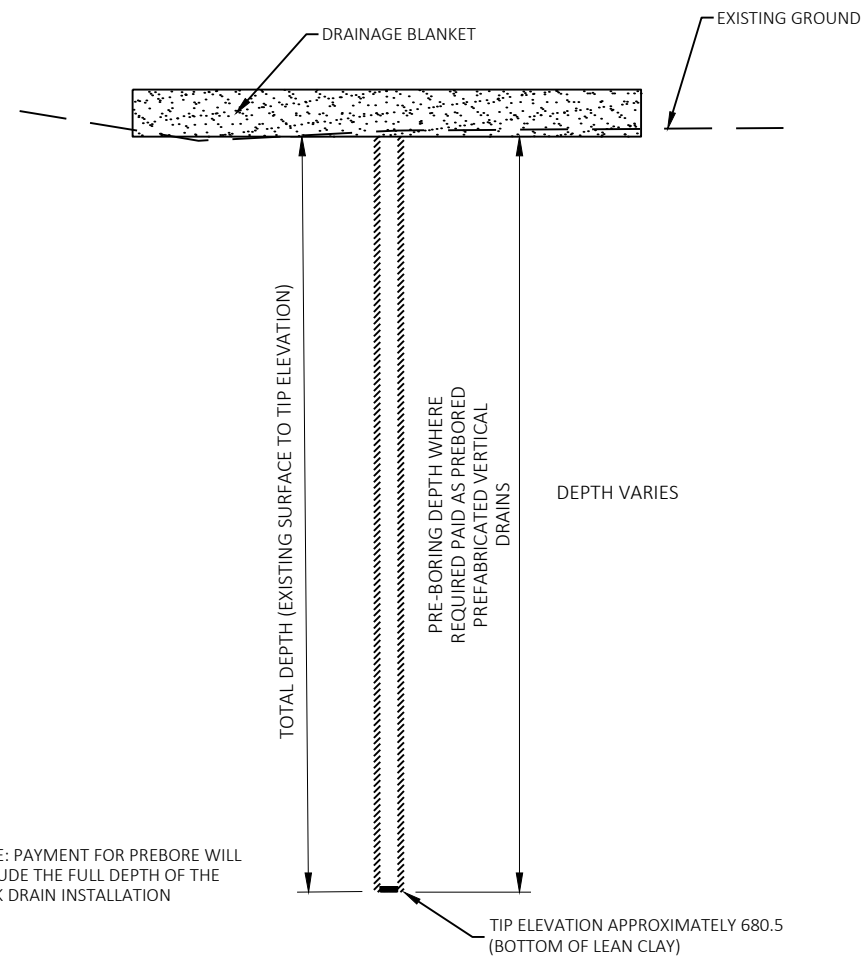
SETTLEMENT GAUGE DETAIL

NOT TO SCALE



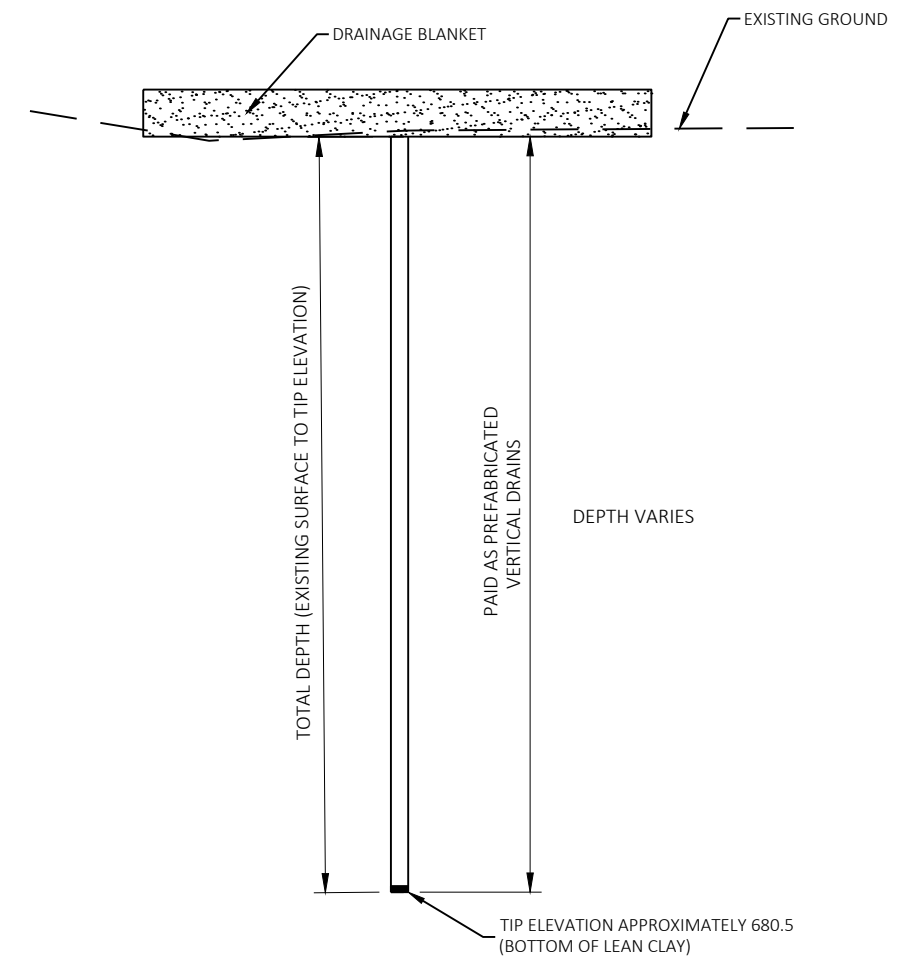
PREFABRICATED VERTICAL DRAINS PLACEMENT DETAIL -
3-FOOT EQUILATERAL TRIANGULAR SPACING

NOT TO SCALE



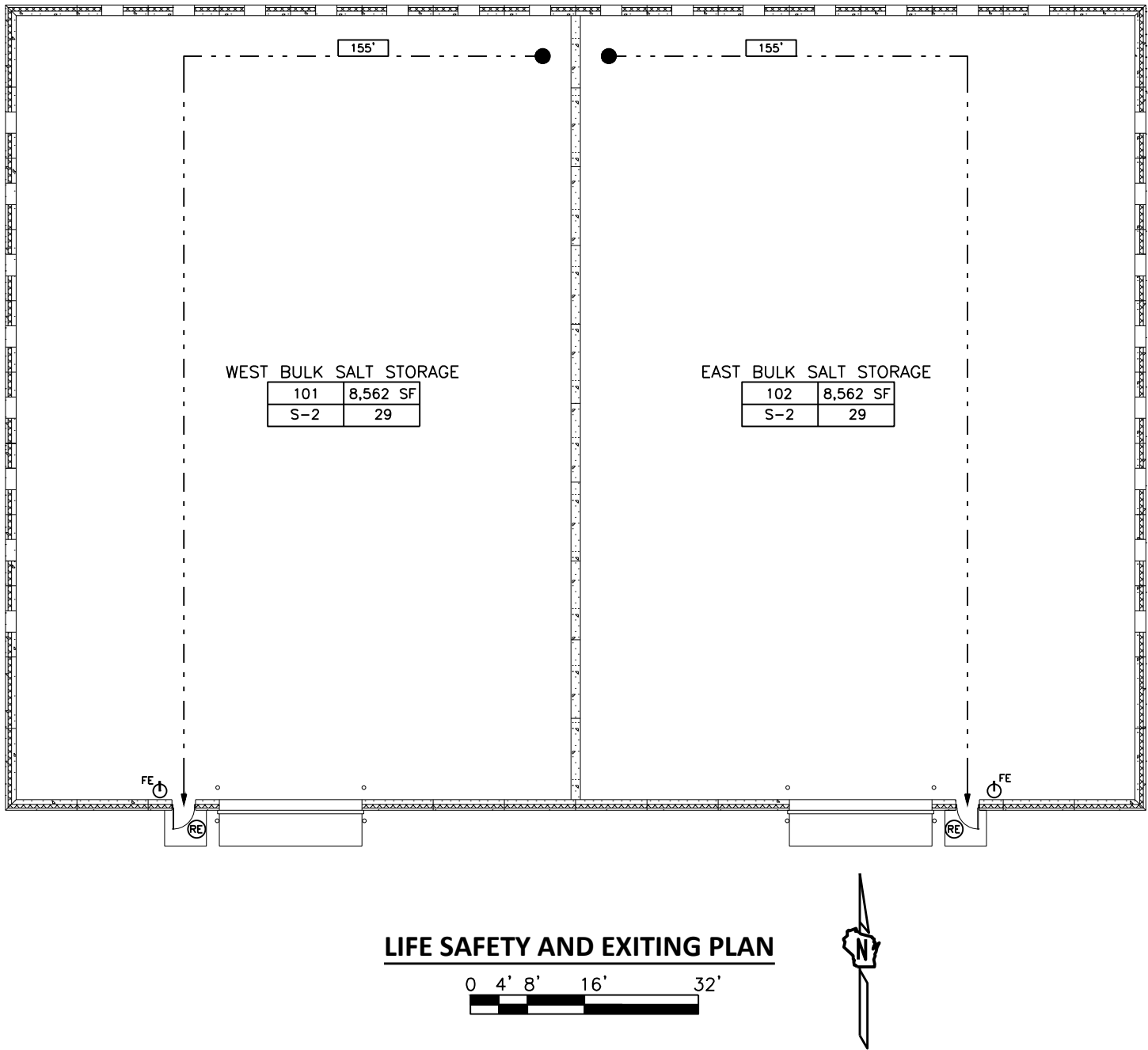
PRE-BORING PREFABRICATED VERTICAL DRAINS

NOT TO SCALE



PREFABRICATED VERTICAL DRAINS

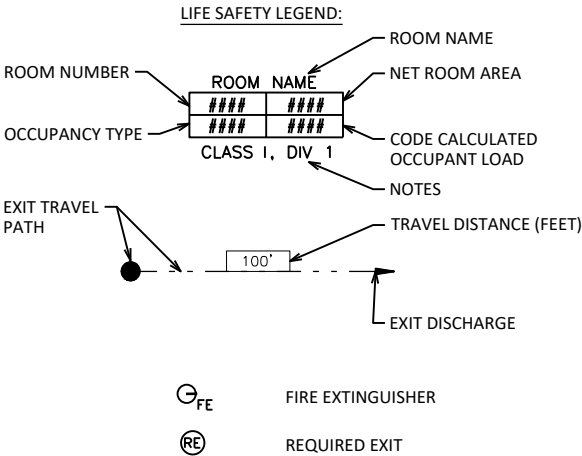
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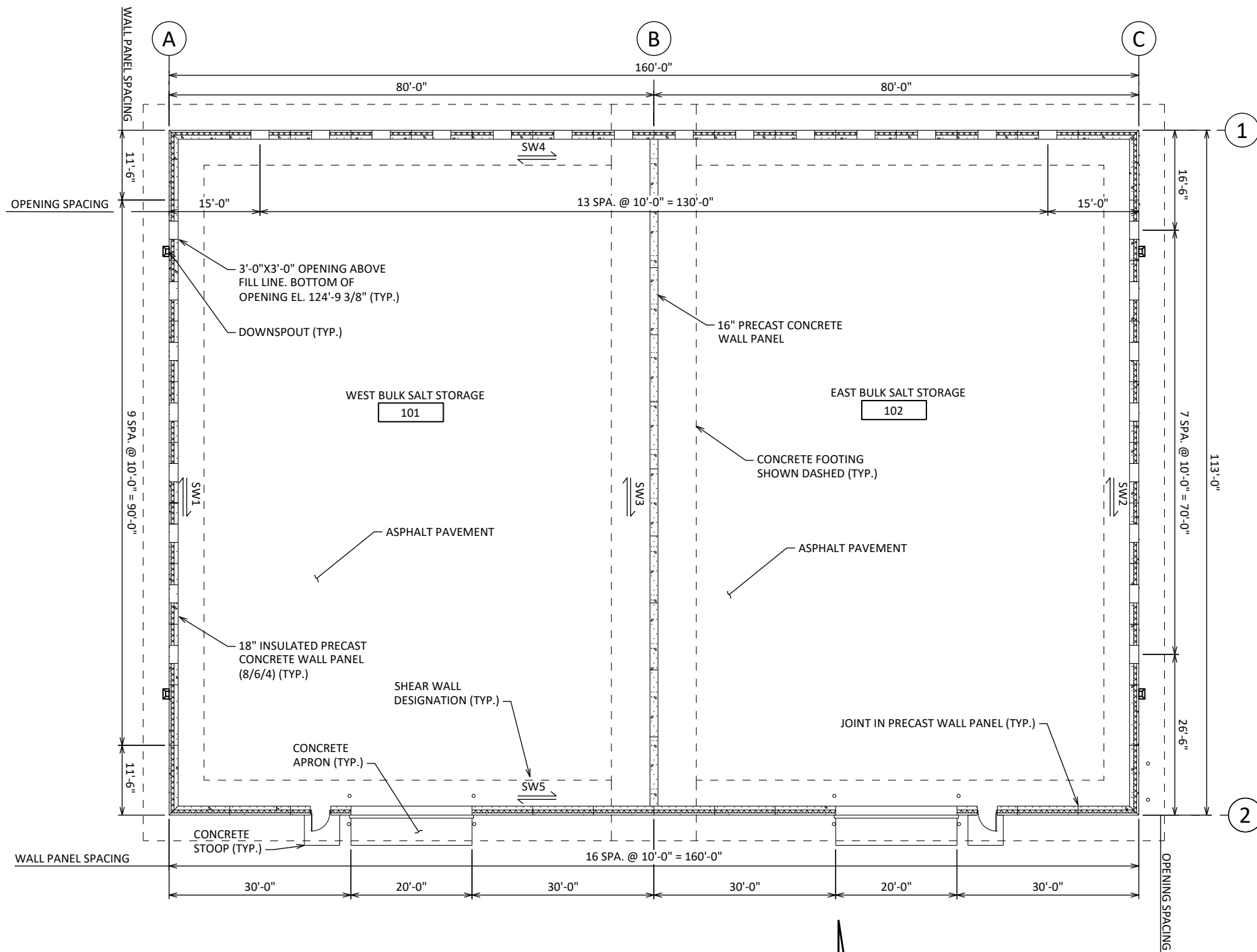


LIST OF DRAWINGS:

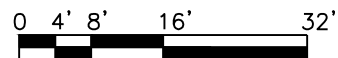
- G0.1 CODE SUMMARY, LIFE SAFETY, AND EXITING PLAN
- AS1.1 OVERALL FLOOR PLAN
- AS1.2 ENLARGED WEST FLOOR PLAN
- AS1.3 ENLARGED EAST FLOOR PLAN
- AS1.4 ROOF PLAN
- AS2.1 ELEVATIONS
- AS3.1 SECTIONS - 1
- AS3.2 SECTIONS - 2
- AS5.1 DETAILS
- AS6.1 SCHEDULES
- E1.1 OVERALL ELECTRICAL PLAN
- E6.1 ELECTRICAL SYMBOLS AND DETAILS
- E6.2 ELECTRICAL SCHEDULES AND DETAILS

SALT STORAGE BUILDING CODE INFORMATION			
BUILDING CODE	2015 INTERNATIONAL BUILDING CODE (SP S 362)		
	2015 INTERNATIONAL ENERGY CONSERVATION CODE (SPS 363)		
	2015 INTERNATIONAL MECHANICAL CODE (SP S 364)		
	2015 INTERNATIONAL FUEL GAS CODE (SP S 365)		
	2015 INTERNATIONAL FIRE CODE		
	2017 NATIONAL ELECTRICAL CODE (SP S 316)		
	WISCONSIN PLUMBING CODE (SPS 382)		
ADA STANDARDS (SP S 362)			
SCOPE OF WORK: CONSTRUCTION OF A NEW 18,080 SF SALT STORAGE BUILDING.			
OCCUPANCY TYPE		NON-SEPARATED USE	
USE GROUPS		S-2 LOW HAZARD STORAGE	
HAZARDOUS MATERIALS: NONE PRESENT			
CONSTRUCTION TYPE		TYPE 2B	
OCCUPANCY SEPARATION: NONE REQUIRED			
GENERAL BUILDING INFORMATION			
	ALLOWABLE		ACTUAL
NO. OF STORIES	3 STORIES		1 STORY
HEIGHT	55 FEET		37 FEET
AREA PER FLOOR LEVEL (NET SF)			
S-2 17,124 SF			
TOTAL ALLOWABLE AREA PER FLOOR LEVEL	UNLIMITED ³	TOTAL ACTUAL AREA (GROSS SF)	18,080 SF
PUBLIC WAYS OR YARDS ACCESSIBLE FROM 4 SIDES, MIN. 60-FOOT ACCESS WIDTH			
FIRE SUPPRESSION SYSTEM - NONE PROVIDED			
PORTABLE FIRE EXTINGUISHERS, RATED CLASS A, B, C; 10-POUND CAPACITY.			
NUMBER OF OCCUPANTS			
OCCUPANT LOAD FACTOR	300 (S-2)		
OCCUPANT CALCULATION - SEE PLANS			
ACTUAL NUMBER OF OCCUPANTS	ZERO PERMANENT OCCUPANTS, ONLY PRESENT FOR MAINTENANCE AND OPERATION		
TRAVEL DISTANCE		EXIT ACCESS	COMMON PATH
	S-2	300 FEET	250 FEET ¹
EXITS			
REQUIRED		PROVIDED	
WEST BULK SALT STORAGE - 1 ²		1	
EAST BULK SALT STORAGE - 1 ²		1	
ALL SPACES/OCCUPANCIES REQUIRE 1 EXIT.			
NOTES:			
1. COMMON PATH INCREASED TO 250' PER SP S 362.1006(4)(4); BUILDING IS USED FOR BULK S STORAGE OF SALT OR SAND.			
2. SINGLE EXIT IS ALLOWED PER DEPARTMENT EXCEPTION SP S 362.1006(4)(4); COMMON PATH LESS THAN 250 FEET.			
3. TOTAL ALLOWABLE AREA SHALL BE UNLIMITED PER IBC 507.3.			





OVERALL FLOOR PLAN



LATERAL LOAD SCHEDULE

MARK	WIND (KIPS, UL TIMATE)	SEISMIC (KIPS)
SW1	23.0	21.1
SW2	23.0	21.1
SW3	44.6	42.2
SW4	30.3	42.2
SW5	30.3	42.2

NOTES:
1. PRECAST CONCRETE DOUBLE TEE ROOF IS ASSUMED AS A RIGID DIAPHRAGM FOR LATERAL LOAD DISTRIBUTION.
2. LOADS SHOWN ARE SHEAR FORCES AND SHALL BE APPLIED AT THE ROOF DIAPHRAGM LEVEL.
3. LOADS SHOWN ARE UNFACTORED.

GENERAL NOTES:

- SEE ROOM FINISH SCHEDULE ON SHEET AS6.1 AND SPECIFICATIONS FOR TREATMENT OF WALLS, FLOORS, AND CEILINGS NOT CALLED OUT ON DRAWINGS.
- PRECAST ELEMENT THICKNESSES, WIDTHS, AND DETAILS ARE PROVIDED FOR INFORMATION ONLY. CONTRACTOR SHALL PROVIDE COMPLETE DESIGN PLANS, DETAILS, AND SHOP DRAWINGS FOR THE PRECAST ELEMENTS OF THE SALT STORAGE BUILDING IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND THE DETAILS SHOWN ON THESE DRAWINGS. DIMENSIONS AND LOCATIONS OF DOORS, PANEL JOINTS, AND OPENINGS MAY BE SHIFTED SLIGHTLY TO CONFORM TO PRECAST MANUFACTURER'S STANDARDS.
- BUILDING ELEVATION 100'-0" CORRESPONDS TO SITE ELEVATION 733.42.
- ALL EMBED ANCHORS, INSERTS, PLATES, ANGLES, AND OTHER ITEMS LEFT EXPOSED SHALL BE HOT-DIPPED GALVANIZED. COLD GALVANIZE FIELD WELDS.

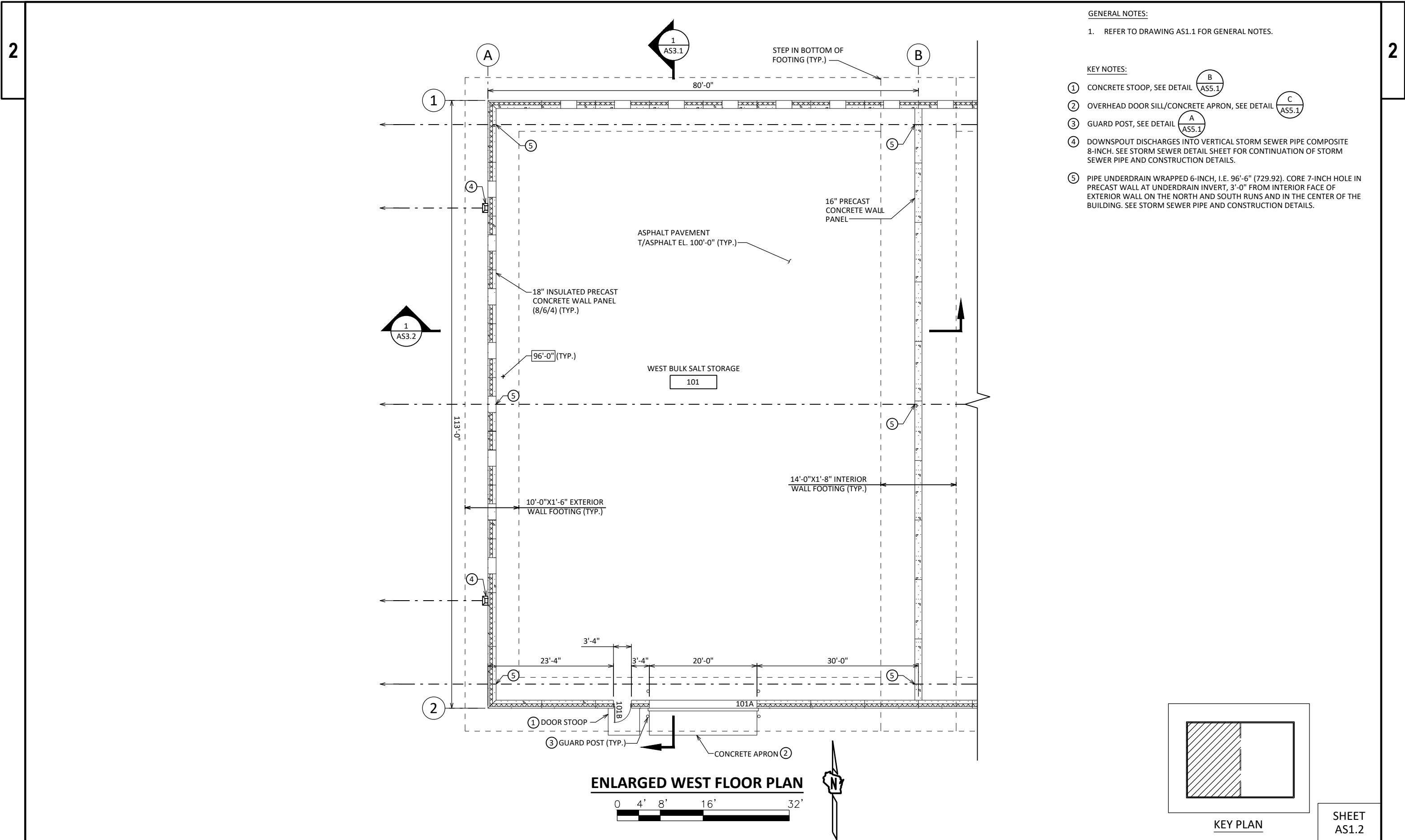
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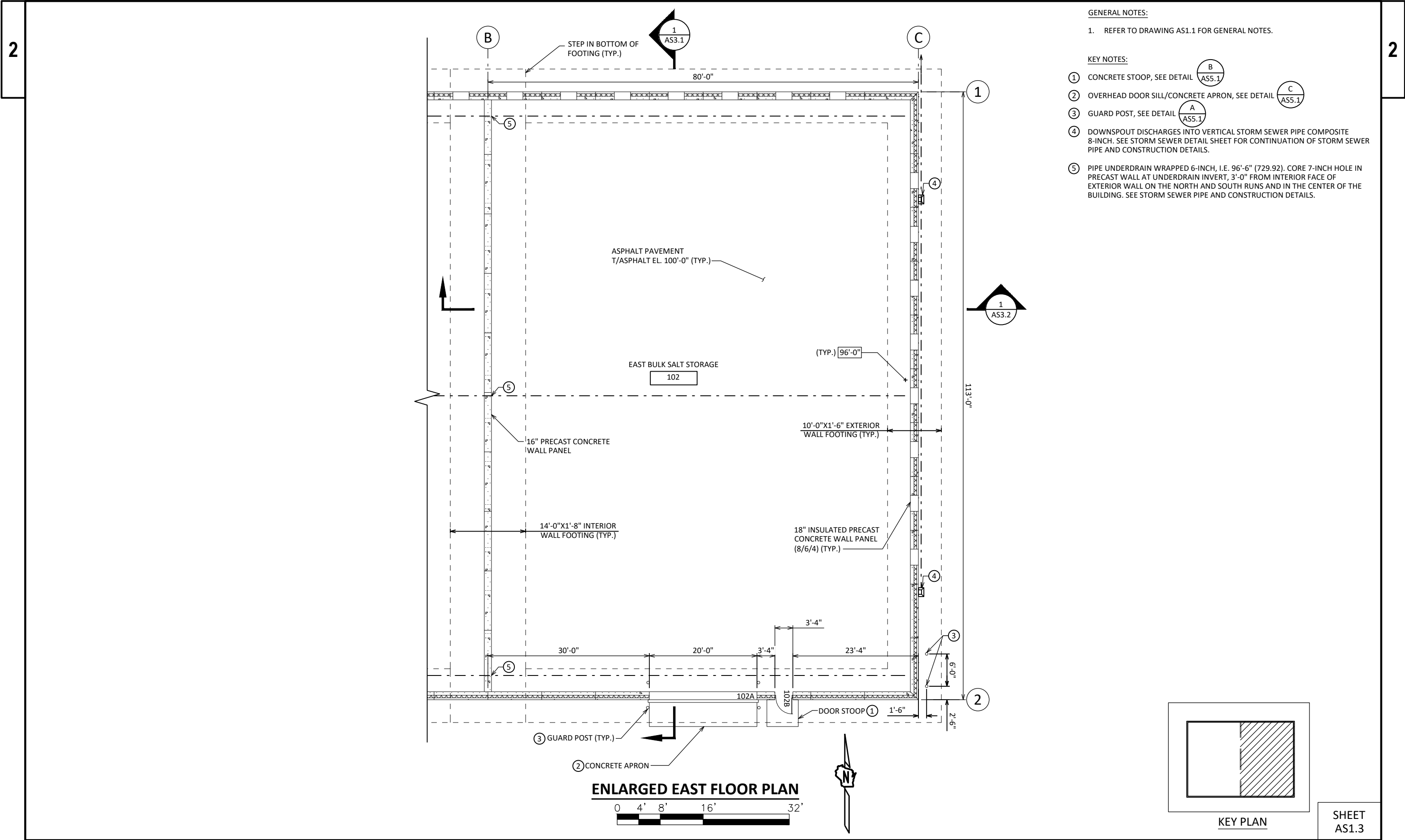
- UNLESS NOTED OTHERWISE, THE FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOWING UNIFORM GRAVITY LOADS:
 - ROOFING DEAD LOAD: 3 PSF
 - PRECAST TEE ROOF FRAMING DEAD LOAD: 110 PSF
 - 18" INSULATED EXTERIOR WALL PANEL DEAD LOAD: 160 PSF
 - 16" SOLID INTERIOR WALL PANEL: 207 PSF
 - BALANCED SNOW LOAD: 33.6 PSF
- DESIGN PRECAST BUILDING FOR THE LATERAL WIND AND SEISMIC LOADS INDICATED ON THIS SHEET.
- DESIGN THE PRECAST WALLS (INTERIOR AND EXTERIOR) TO RESIST THE WEIGHT (I.E., LATERAL FORCES) OF SALT ASSUMING THE FOLLOWING LOADING CONDITIONS AND DESIGN PARAMETERS:
 - SALT WILL BE STORED TO A CONTAINED FILL LINE HEIGHT OF TEN FEET (10') AGAINST THE INTERIOR AND EXTERIOR WALLS.
 - THE SALT WILL FURTHER SLOPE UPWARDS AND AWAY FROM THE WALL TOWARD A PEAK OR RIDGE IN THE CENTER OF THE BUILDING AT A 32 DEGREE ANGLE OF REPOSE.
 - TOTAL UNIT WEIGHT OF SALT PILE: 84 PCF
 - AT-REST EARTH PRESSURE COEFFICIENT: 0.50

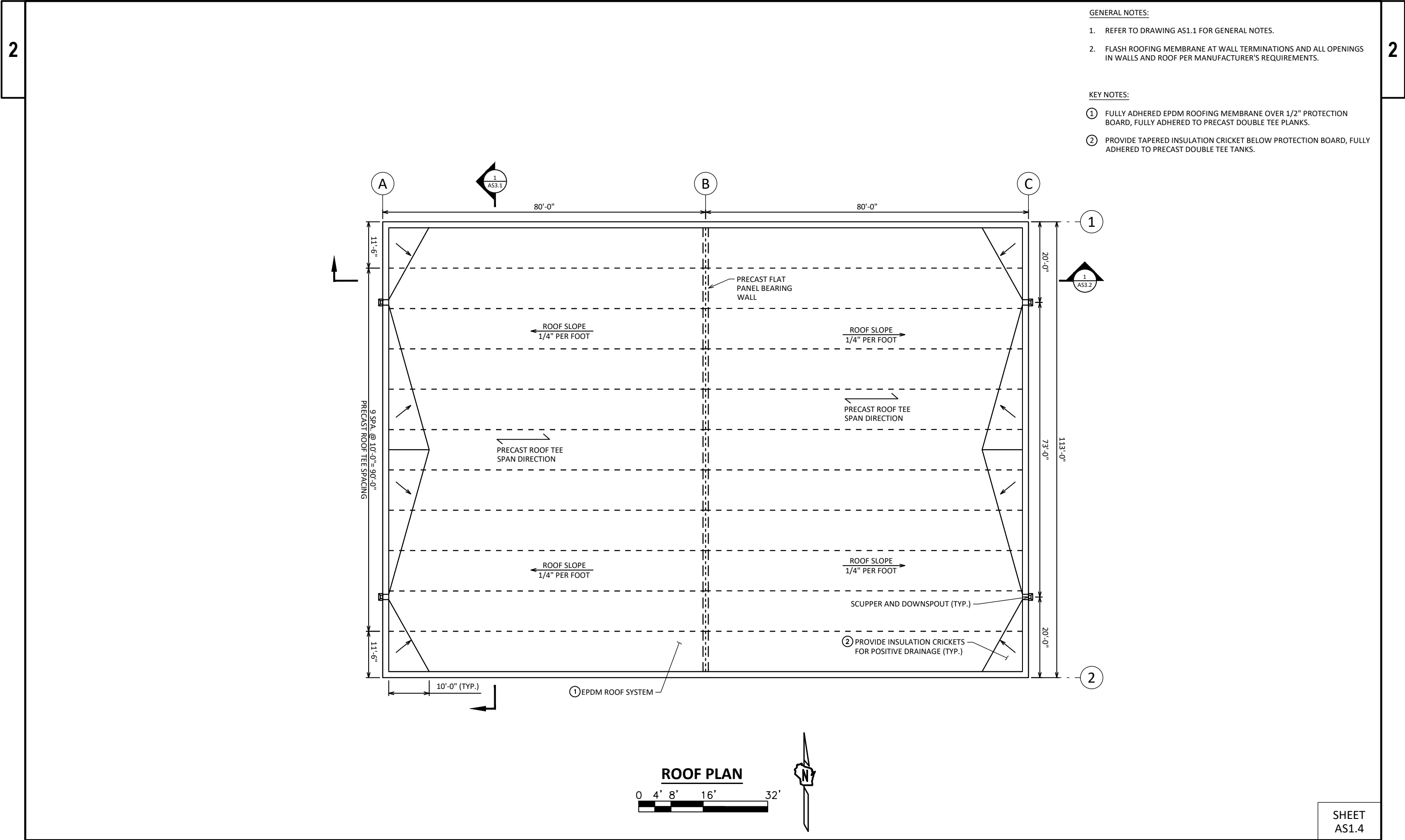
STRUCTURAL DESIGN CRITERIA

DESIGN CODES	BUILDING CODE		IBC 2015
	CONCRETE DESIGN CODE		ACI 318-14
	RISK CATEGORY		II
ROOF LIVE LOAD	REDUCTION		PER IBC CODE
	MINIMUM ROOF LIVE LOAD (PSF)		20
ROOF SNOW LOAD	GROUND SNOW LOAD (P_g) (PSF)		40
	FLAT ROOF SNOW LOAD (P_f) (PSF)		33.6
	BALANCED SNOW LOAD (PSF)		33.6
	SNOW EXPOSURE FACTOR (C_e)		1.0
	SNOW LOAD IMPORTANCE FACTOR (I_s)		1.0
	THERMAL FACTOR (C_t)		1.2
	DRIFT LOADS		PER IBC CODE
	BASIC 3-SECOND GUST WIND SPEED (MPH)		115
WIND LOAD	WIND IMPORTANCE FACTOR (I_w)		1.0
	WIND EXPOSURE		C
	INTERNAL PRESSURE COEFFICIENT (GC_{pi})		0.18
	COMPONENTS AND CLADDING DESIGN WIND PRESSURE (PSF)		PER IBC CODE
	SEISMIC IMPORTANCE FACTOR (I_e)		1.0
EARTHQUAKE DESIGN DATA	SITE CLASS		D
	SPECTRAL RESPONSE COEFFICIENTS	S_{DS}	0.059
		S_{D1}	0.056
	SEISMIC DESIGN CATEGORY		A
	BASIC SEISMIC FORCE RESISTING SYSTEM		BEARING WALL SYSTEMS - ORDINARY PRECAST SHEAR WALLS
	RESPONSE MODIFICATION COEFFICIENT (R)		3
	DESIGN BASE SHEAR		0.020W
GEOTECHNICAL	ANALYSIS PROCEDURE		EQUIVALENT LATERAL FORCE ANALYSIS
	NET ALLOWABLE SOIL BEARING PRESSURE		2500 PSF

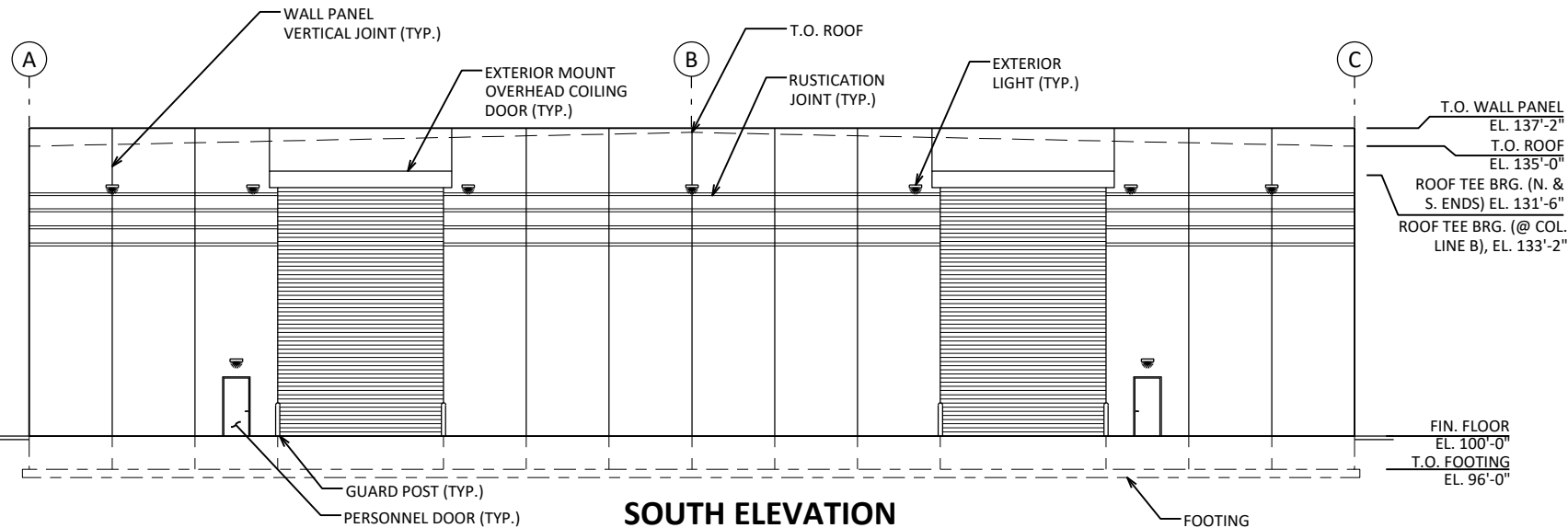
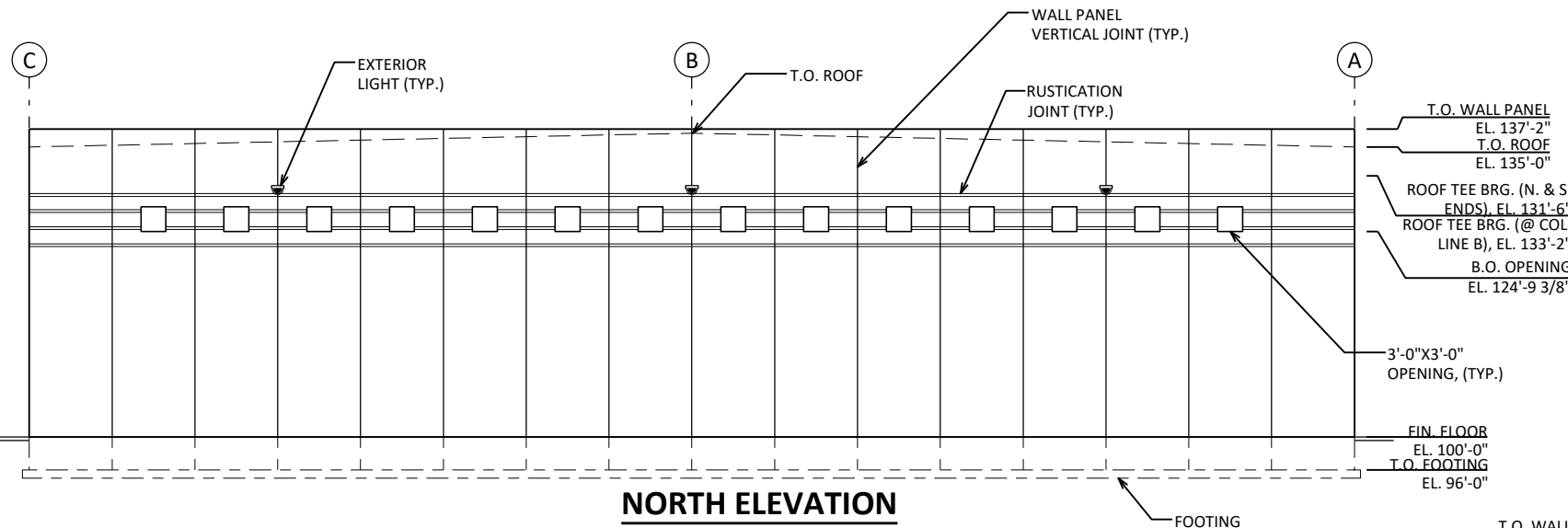
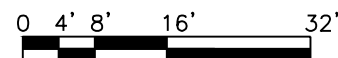
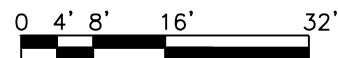
SHEET
AS1.1



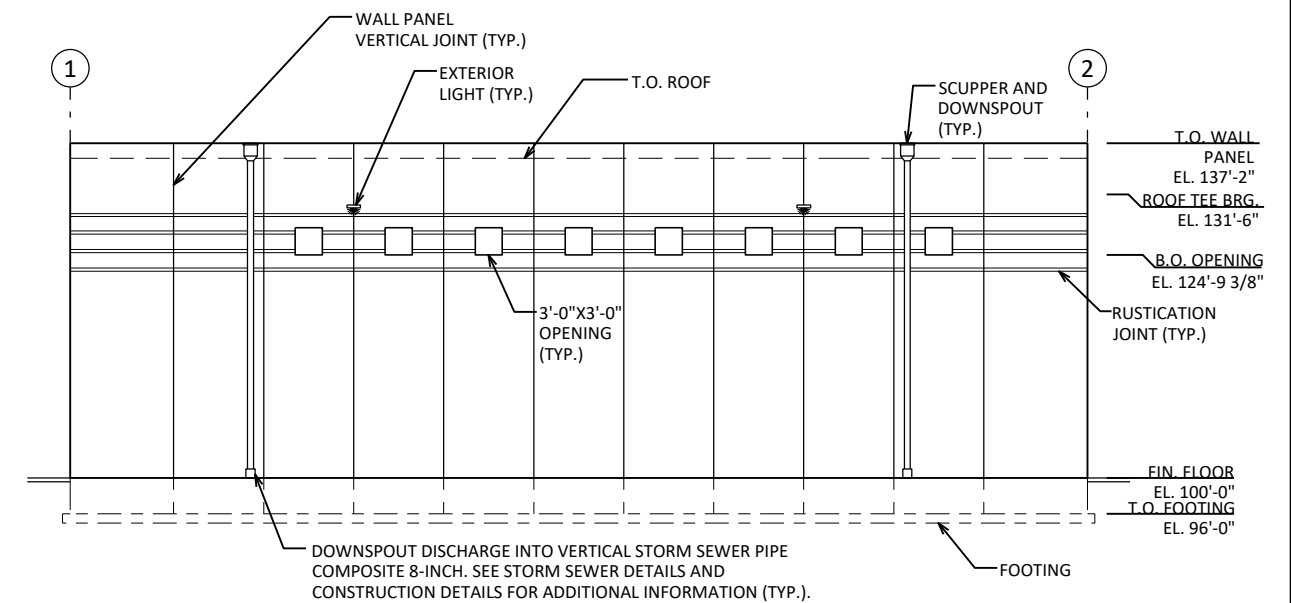
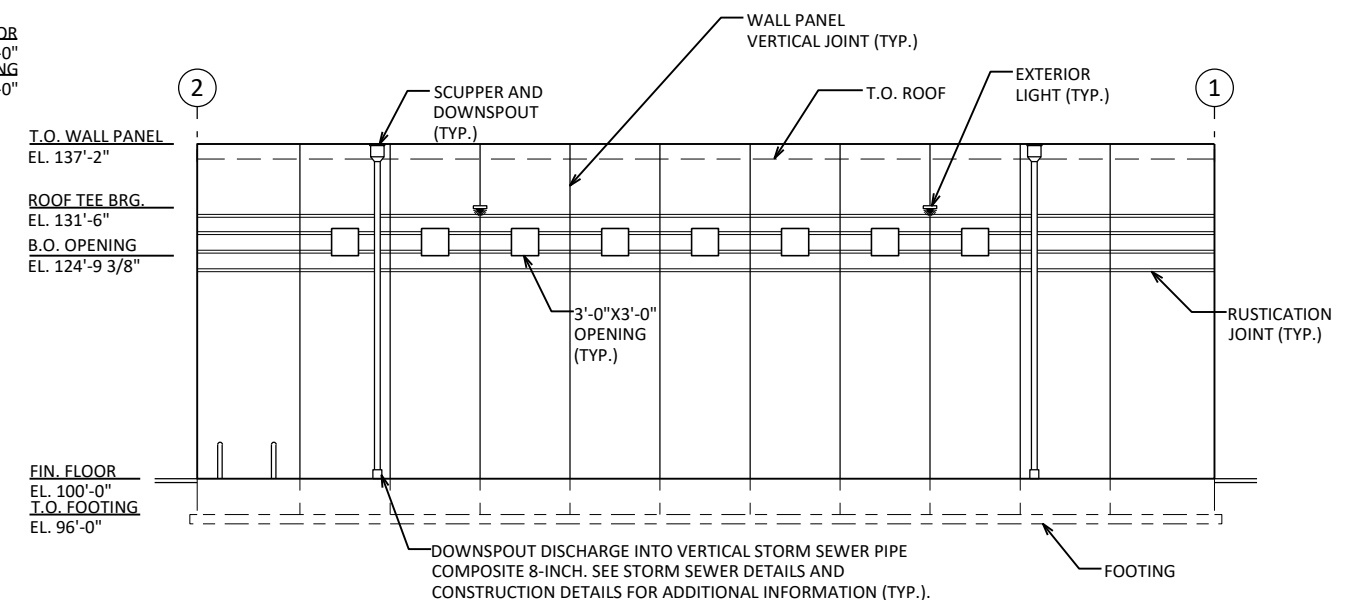
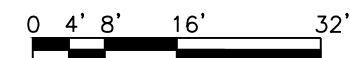
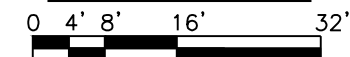




- GENERAL NOTES:
1. REFER TO DRAWING AS1.1 FOR GENERAL NOTES.
 2. FLASH ROOFING MEMBRANE AT WALL TERMINATIONS AND ALL OPENINGS IN WALLS AND ROOF PER MANUFACTURER'S REQUIREMENTS.
- KEY NOTES:
- ① FULLY ADHERED EPDM ROOFING MEMBRANE OVER 1/2" PROTECTION BOARD, FULLY ADHERED TO PRECAST DOUBLE TEE PLANKS.
 - ② PROVIDE TAPERED INSULATION CRICKET BELOW PROTECTION BOARD, FULLY ADHERED TO PRECAST DOUBLE TEE TANKS.

**SOUTH ELEVATION****NORTH ELEVATION****GENERAL NOTES:**

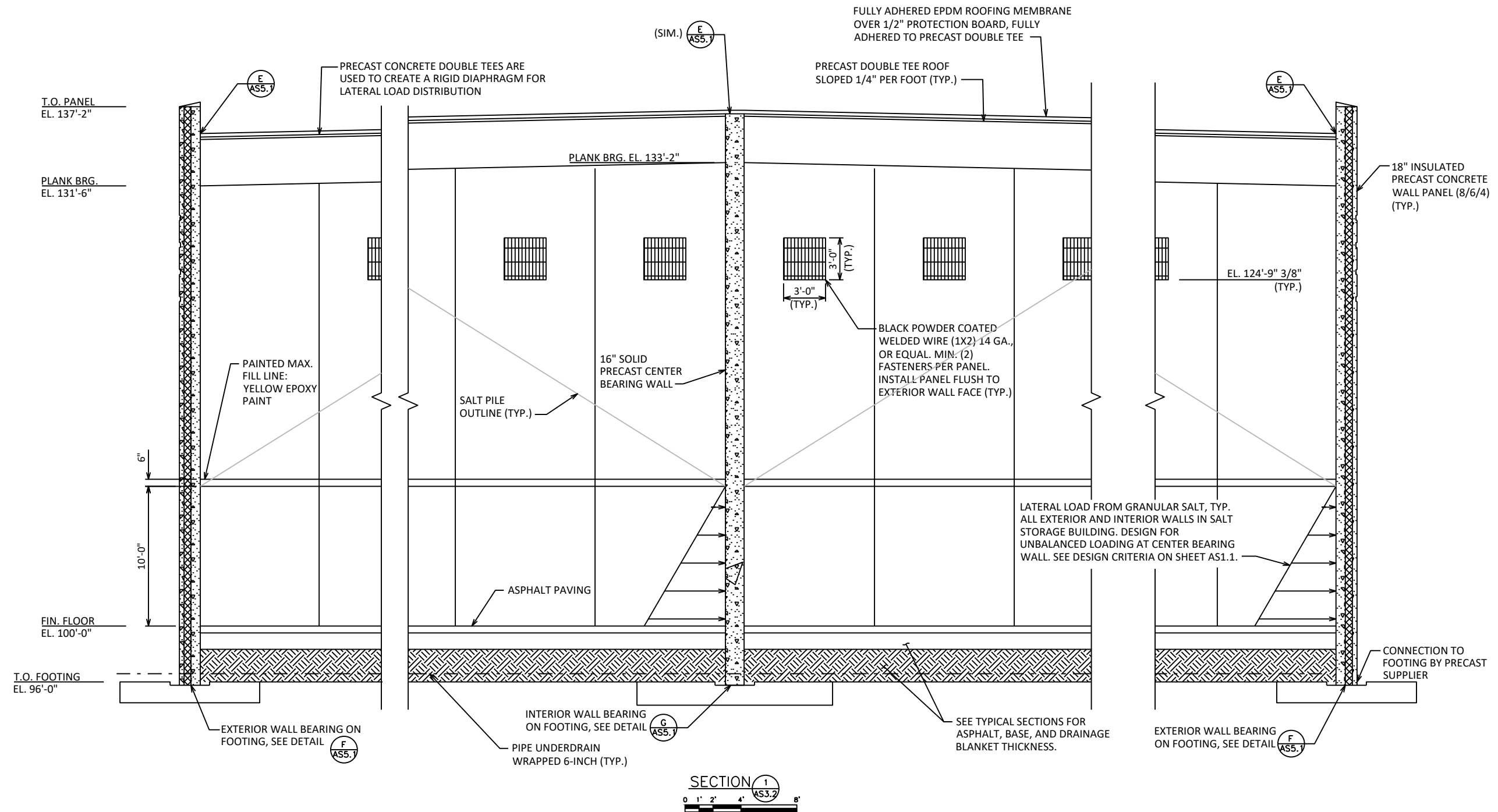
1. REFER TO DRAWING AS1.1 FOR GENERAL NOTES.
2. SEE DRAWING AS3.1 FOR RUSTICATION JOINT DETAILS.

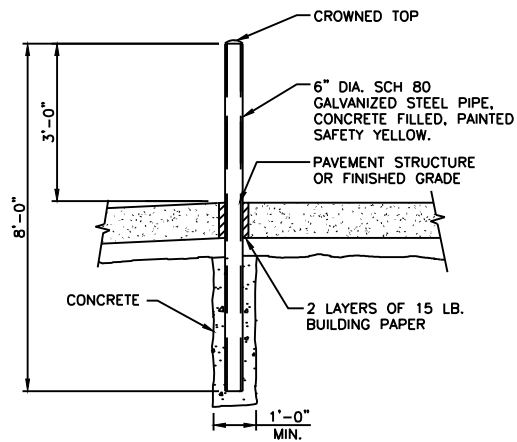
**WEST ELEVATION****EAST ELEVATION**

WISDOT/CADDS SHEET 42

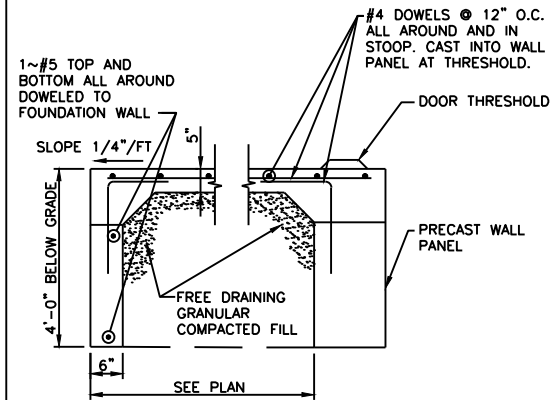
GENERAL NOTES:

1. REFER TO DRAWING AS1.1 FOR GENERAL NOTES.

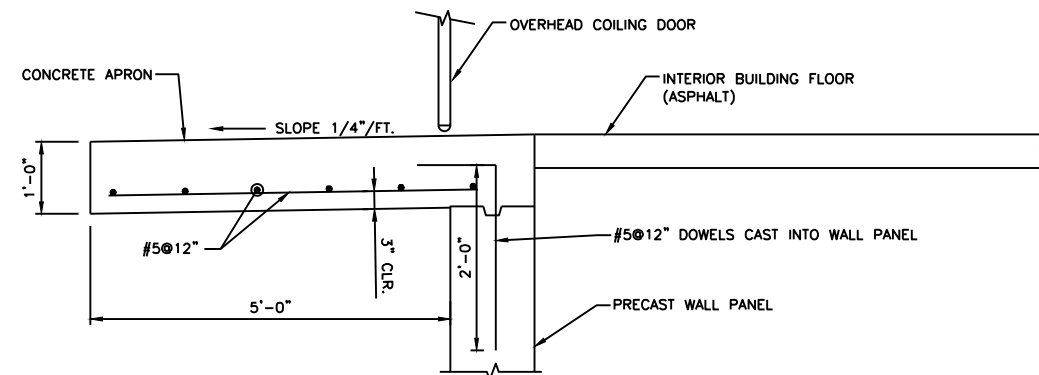
SHEET
AS3.2



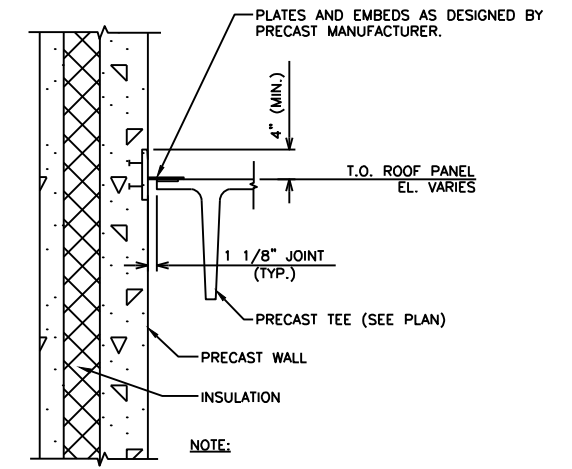
A GUARD POST
AS5.1 NO SCALE



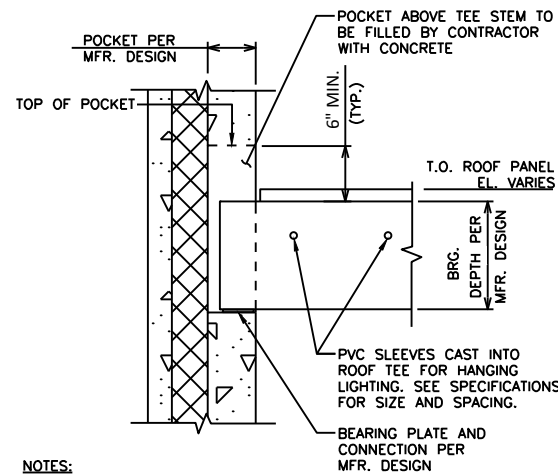
B CONCRETE STOOP
AS5.1 NO SCALE



C OVERHEAD DOOR SILL/CONCRETE APRON
AS5.1 NO SCALE



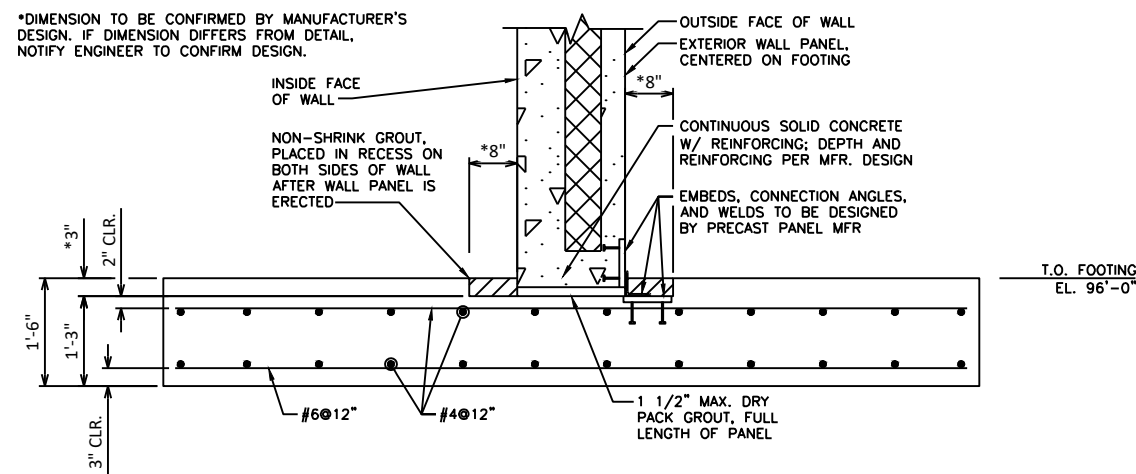
D TEE FLANGE TO WALL
AS5.1 NO SCALE



NOTES:

1. DETAIL PROVIDED FOR REFERENCE ONLY. FINAL DETAILS PER WALL PANEL MANUFACTURER DESIGN.
2. INTERIOR WALL TEE BEARING SIMILAR. PROVIDE INTERIOR WALL BEARING PER MANUFACTURER DETAILS.

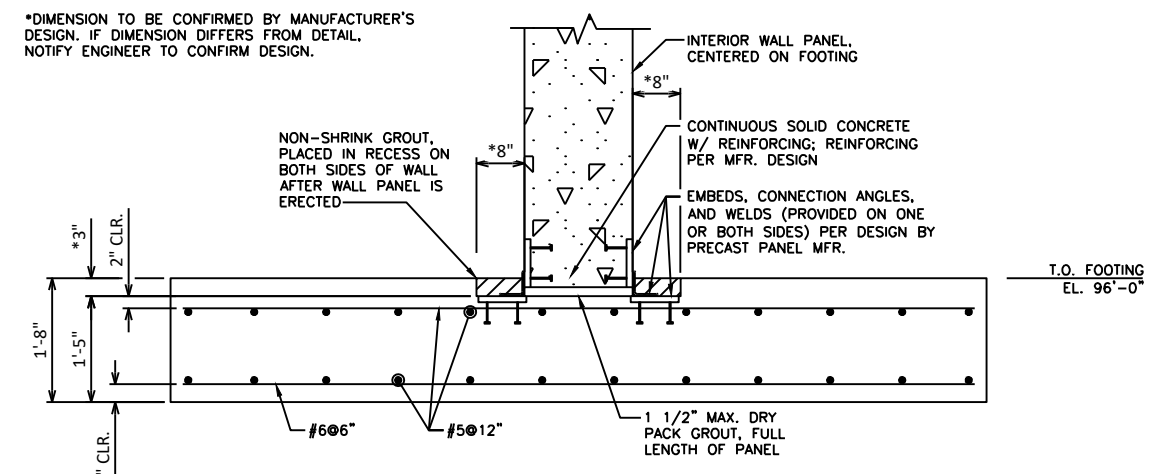
E TEE BEARING ON EXTERIOR WALL
AS5.1 NO SCALE



NOTE:

1. DETAIL PROVIDED FOR REFERENCE ONLY. FINAL DETAILS PER WALL PANEL MANUFACTURER DESIGN.

F EXTERIOR WALL BEARING ON FOOTING
AS5.1 NO SCALE



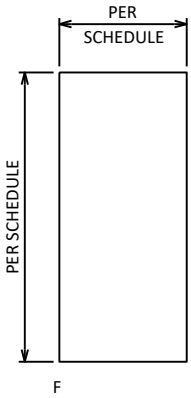
NOTE:

1. DETAIL PROVIDED FOR REFERENCE ONLY. FINAL DETAILS PER WALL PANEL MANUFACTURER DESIGN.

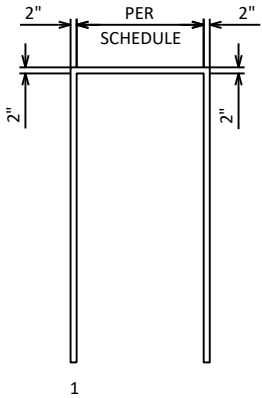
G INTERIOR WALL BEARING ON FOOTING
AS5.1 NO SCALE

DOOR SCHEDULE																
DOOR NUMBER	DOOR						FRAME		LABEL	HARDWARE GROUP		LINTEL	DETAILS		NOTES	
	SIZE (W X H)	MATERIAL	TYPE		SWING		TYPE	MATERIAL		ACTIVE	INACTIVE	TYPE	HEAD/JAMB	SILL		
			ACTIVE	INACTIVE	ACTIVE	INACTIVE										
SALT STORAGE BUILDING																
101A	20'-0" X 30'-0"	STL	OHC	--	--	--	--	STL	--	208V, 3-PH	--	--	A/AS6.1	C/AS5.1	1	
101B	3'-0" X 7'-0"	FRP	F	--	LHR	--	1	FRP	--	1	--	--	B/AS6.1	B/AS5.1		
102A	20'-0" X 30'-0"	STL	OHC	--	--	--	--	STL	--	208V, 3-PH	--	--	A/AS6.1	C/AS5.1	1	
102B	3'-0" X 7'-0"	FRP	F	--	RHR	--	1	FRP	--	1	--	--	B/AS6.1	B/AS5.1		
LEGEND:																
	MATERIAL		TYPE		SWING											
	STL	=	STEEL	F	=	FLUSH	LHR	=	LEFT HAND REVERSE							
	FRP	=	FIBERGLASS	OHC	=	OVERHEAD COILING	RHR	=	RIGHT HAND REVERSE							
NOTES:																
1. SEE SPECIFICATIONS FOR ADDITIONAL DOOR OPERATOR REQUIREMENTS.																

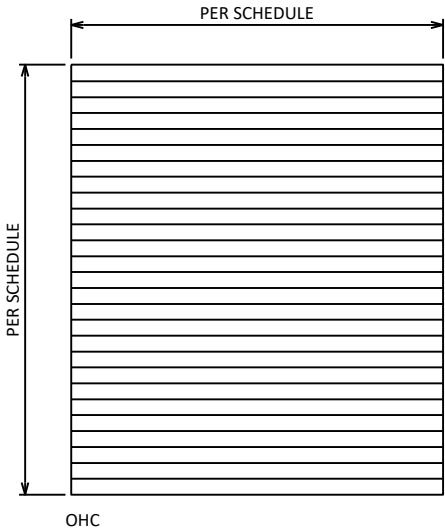
ROOM FINISH SCHEDULE										
ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL				CEILING		NOTES
				NORTH	EAST	SOUTH	WEST	TYPE	HEIGHT	
SALT STORAGE BUILDING										
101	WEST BULK SALT STORAGE	F1	--	W1	W1	W1	W1	C1	VARIES	1
102	EAST BULK SALT STORAGE	F1	--	W1	W1	W1	W1	C1	VARIES	1
LEGEND:										
FLOOR		BASE		WALL				CEILING		
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION			CODE	DESCRIPTION	
F1	ASPHALT PAVING	--	NONE	W1	SEALED PRECAST CONCRETE			C1	SEALED PRECAST CONCRETE	
NOTES:										
1. EXTERIOR FACE OF PRECAST WALL PANELS SHALL HAVE EXPOSED AGGREGATE FINISH. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.										



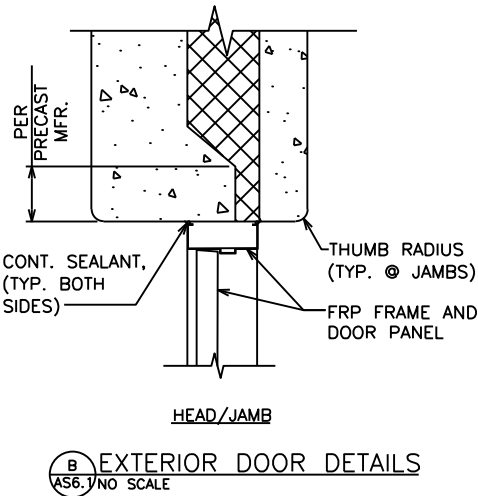
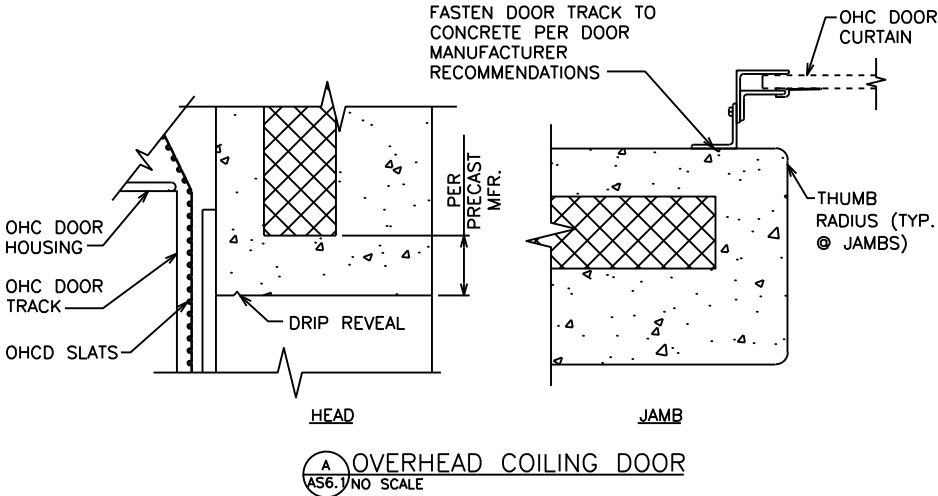
PERSONNEL DOOR TYPES
NO SCALE

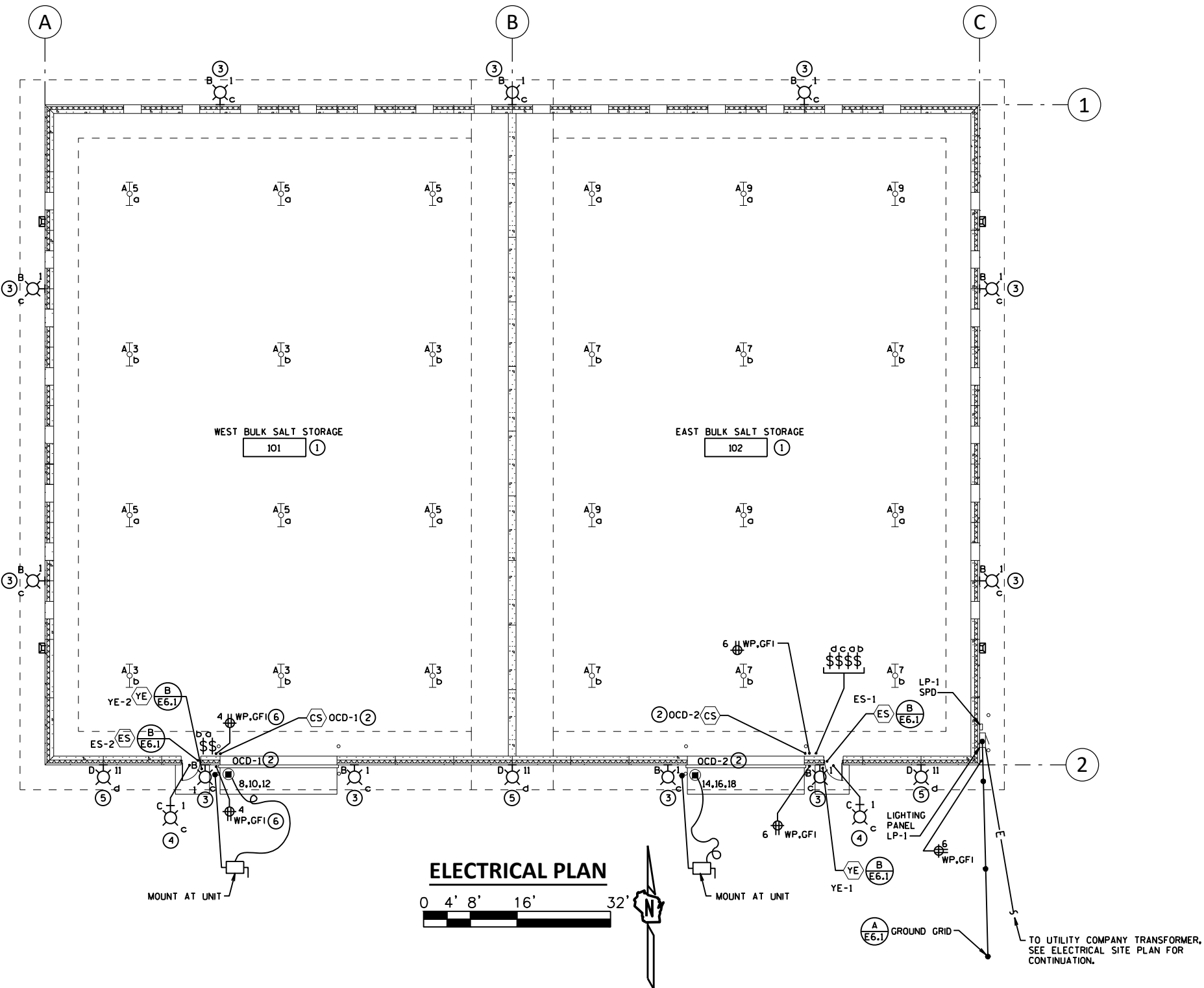


FRP FRAME TYPES
NO SCALE



OVERHEAD DOOR TYPES
NO SCALE





GENERAL NOTES:

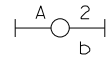
1. REFER TO DRAWING E6.1 FOR SYMBOLS AND ABBREVIATIONS.
2. CONDUITS SHALL NOT BE ROUTED HORIZONTALLY ALONG WALLS BELOW THE PAINTED MAX. FILL LINE INSIDE EACH SALT STORAGE AREA.
3. REFER TO ELECTRICAL SITE PLAN FOR ADDITIONAL ELECTRICAL WORK.

KEY NOTES:

- ① PENDANT MOUNT LIGHT FIXTURES WITHIN ROOM 30'-6" AFF TO BOTTOM OF LIGHT FIXTURE. MOUNT FIXTURES PARALLEL WITH FLOOR.
- ② OVERHEAD GARAGE DOOR CONTROLS FURNISHED AS SPECIFIED IN SPECIAL PROVISIONS AND INSTALLED AND WIRED BY CONTRACTOR. REFER TO SPECIAL PROVISIONS FOR OPERATING DESCRIPTION AND ADDITIONAL CONTROLS TO BE WIRED BY CONTRACTOR. MOTOR DISCONNECT SHALL BE MOUNTED ADJACENT TO THIS OPERATOR.
- ③ MOUNT LIGHT FIXTURE 30' AFG.
- ④ MOUNT LIGHT FIXTURE 9'-0" AFG.
- ⑤ MOUNT LIGHT FIXTURE 30' AFG, LIGHT FIXTURE SHALL BE TILTED UP APPROXIMATELY 30 DEGREES FROM HORIZONTAL. COORDINATE FINAL LIGHT FIXTURE AIMING AS WELL AS FIELD-ADJUSTABLE LIGHT OUTPUT/DIMMER MODULE SETTING ONSITE AFTER DARK WITH DEPARTMENT TO ACHIEVE DEPARTMENT-DESIRED FLOOD LIGHTING.
- ⑥ PROVIDE MINIMUM SIZE #10 WIRING TO RECEPTACLE.

ELECTRICAL SYMBOLS

LIGHTING



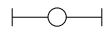
FIXTURE SYMBOL (TYPICAL)
A-INDICATES FIXTURE TYPE
2-INDICATES CIRCUIT NUMBER
b-INDICATES SWITCHING
SOLID CIRCLE INDICATES
ALWAYS ON



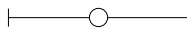
LED, HID, SURFACE
OR PENDANT



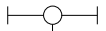
LED, HID, WALL



1X4 LED, SURFACE
OR PENDANT



1X8 LED, SURFACE
OR PENDANT



LED, WALL



1X4 FLUORESCENT, RECESSED



2X2 FLUORESCENT, RECESSED



2X4 FLUORESCENT, RECESSED



CAN, FLUORESCENT OR HID



EXIT, SURFACE, PENDANT
OR RECESSED



EXIT, WALL



EMERGENCY LIGHTING

SWITCHES



SINGLE POLE



TWO POLE



THREE WAY



FOUR WAY



KEYED



DIMMER



MANUAL MOTOR SWITCH (3 PHASE)



WEATHER PROOF



SWITCH WITH PILOT LIGHT

TECHNOLOGY SYMBOLS



CONTROL STATION



ELECTRIC STRIKE



CARD READER

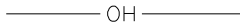


DATA JACK; ID = JACK ID
(*) = # OF JACKS

POWER SYMBOLS



UNDERGROUND ELECTRIC



OVERHEAD ELECTRIC



CIRCUIT NUMBER (TYPICAL)



OTHERWISE SHOWN PANEL DESIGNATION
(TYP.)



DUPLEX, 125 VOLT, WP
INDICATES WEATHERPROOF



DUPLEX, 125 VOLT, ABOVE FURNITURE



DOUBLE DUPLEX, 125 VOLT, ABOVE
FURNITURE



DOUBLE DUPLEX, 125 VOLT



SINGLE CONVENIENCE, 125 VOLT
FOR ELECTRIC WATER COOLER



EXPLOSION-PROOF, ABOVE FURNITURE



EXPLOSION-PROOF



FIXED EQUIPMENT CONNECTION



POWER OUTLET, VOLTAGE &
AMPERAGE AS INDICATED



AUTOMATIC TRANSFER SWITCH (ONE-LINE
DIAGRAM)



CIRCUIT BREAKER (ONE-LINE DIAGRAM)



METER (ONE-LINE DIAGRAM)



PANELBOARD

EQUIPMENT AND WIRING



GROUND ROD 10'-5/8" DIA.
COPPER CLAD



TRANSFORMER



DISCONNECT, F=FUSED,
B=CIRCUIT BREAKER, BLANK=NON-FUSED



MOTOR STARTER MAGNETIC



CIRCUIT BREAKER
COMBINATION STARTER



JUNCTION BOX



LINE VOLTAGE THERMOSTAT



LINE VOLTAGE THERMOSTAT
W/REMOTE BULB



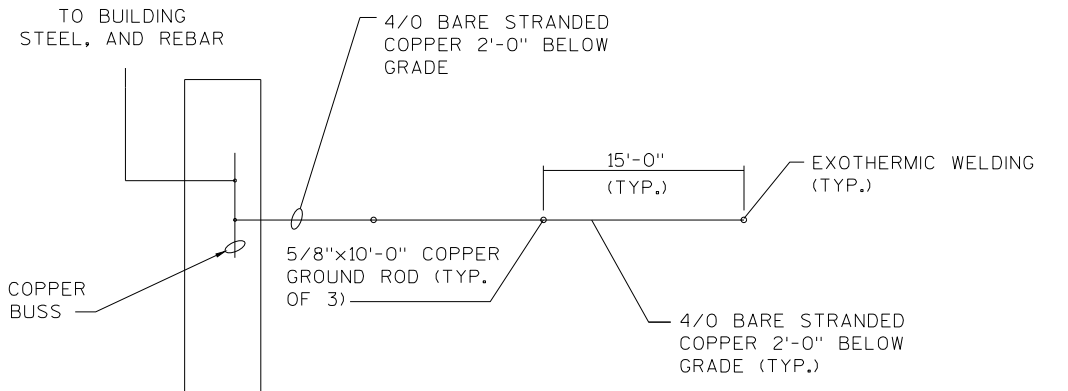
480V LOAD, REFER TO MCC SCHEDULE
FOR EQUIPMENT NUMBER



UNDERGROUND PULL BOXES NON-CONDUCTIVE
24X42-INCH

ABBREVIATIONS

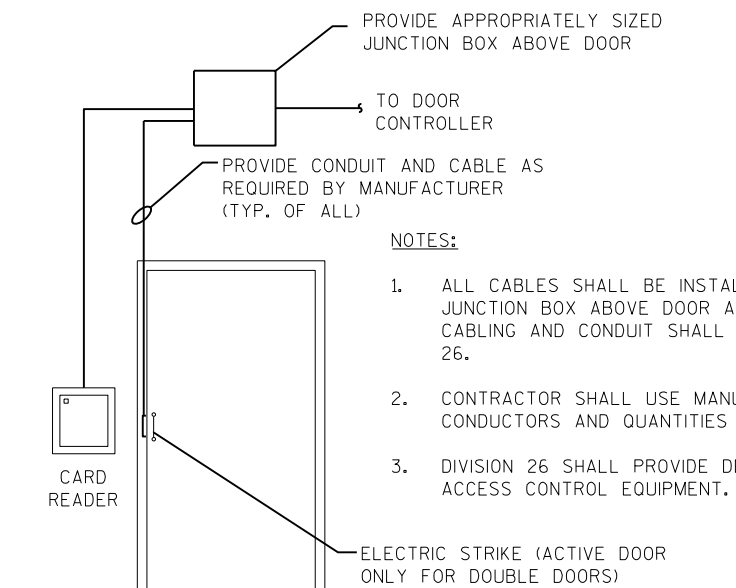
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
C	CONDUIT
CAT	CATEGORY
CT	CURRENT TRANSFORMER
EF	EXHAUST FAN
FVNR	FULL VOLTAGE, NON-REVERSING
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
H-O-A	HAND-OFF-AUTO
KVA	KILOVOLT AMPERES
LP	LIGHTING PANEL
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
OCD	OVERHEAD COILING DOOR
PB	PULL BOX
SPD	SURGE PROTECTIVE DEVICE
V	VOLT
W	WIRE OR WATT
XFMR	TRANSFORMER



A
E6.1

GROUND GRID DETAIL

NO SCALE



B
E6.1

ACCESS CONTROL INSTALLATION DIAGRAM

NO SCALE

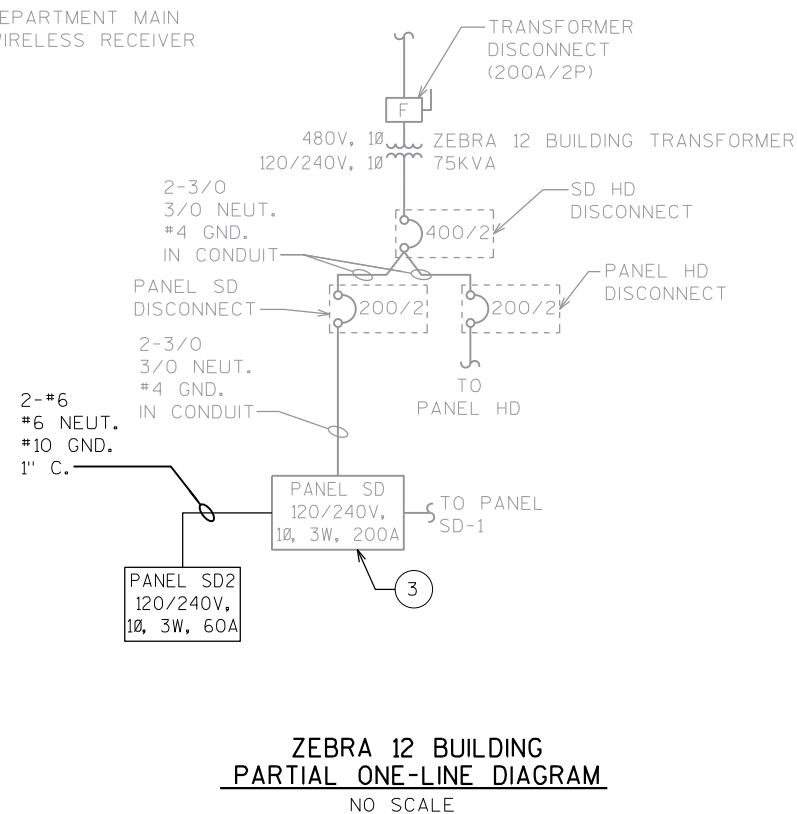
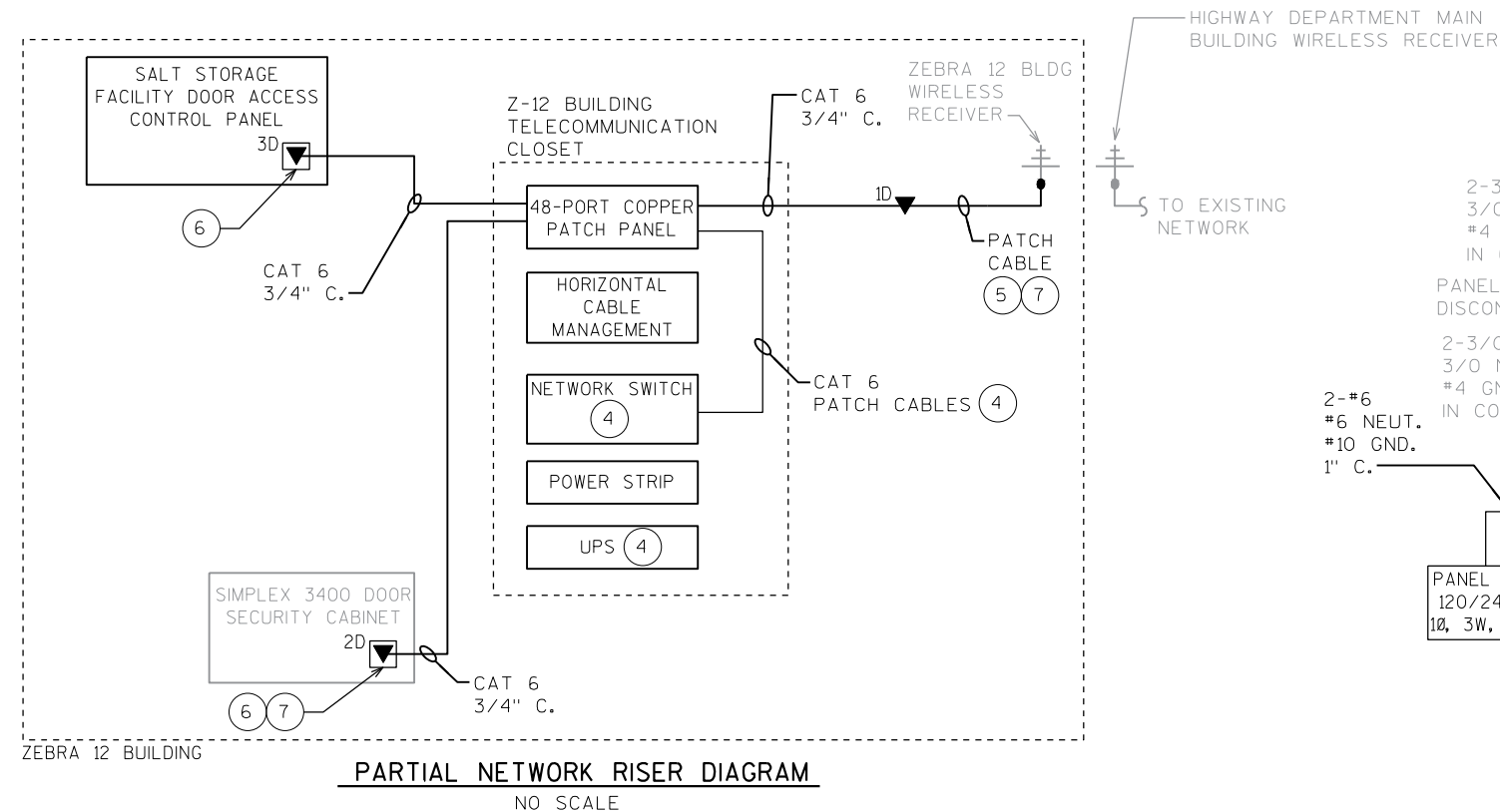
SHEET
E6.1

LIGHTING PANEL LP-1

Service: 120/208V, 3ø, 4W				Enclosure: NEMA 4X 304 Stainless Steel								Mounting: Surface	
Main Breaker: 100A MCB Service Entrance Rated												Main Bus: Copper	
Location: Salt Storage Facility Exterior												SCIC: 10 kAIC	
Room Number/Description	Amps	Poles	Ckt. #	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C	Ckt. #	Poles	Amps	Room Number/Description
Lighting - Exterior	20	1	1	1202			0			2	1	20	Spare
Lighting - West Bulk Salt Storage	20	1	3		1193			360		4	1	20	Receptacles-West Bulk Salt Storage
Lighting - West Bulk Salt Storage	20	1	5			1193			540	6	1	20	Receptacles-East Bulk Salt Storage
Lighting - East Bulk Salt Storage	20	1	7	1193			1320			8	3	20	OCD-1 - West Bulk Salt Storage
Lighting - East Bulk Salt Storage	20	1	9		1193			1320		10	/	/	/
Lighting - Exterior Flood Lighting	20	1	11			787			1320	12	/	/	/
Spare	20	1	13	0			1320			14	3	20	OCD-2 - East Bulk Salt Storage
Spare	20	1	15		0			1320		16	/	/	/
Spare	20	1	17			0			1320	18	/	/	/
Spare	20	1	19	0			0			20	1	20	Spare
Spare	20	1	21		0			0		22	1	20	Spare
Spare	20	1	23			0			0	24	1	20	Spare
Spare	20	1	25	0			0			26	3	30	SPD
Spare	20	1	27		0			0		28	/	/	/
Spare	20	1	29			0			0	30	/	/	/
Total Load per Phase per Side (VA)				2395	2386	1980	2640	3000	3180				
Total Load Phase A (VA)		5035	VA							Total Connected Load		43	A
Total Load Phase B (VA)		5386	VA							Total Connected Load + 25%		54	A
Total Load Phase C (VA)		5160	VA							Spare 25%		14	A
Total Connected Load (VA)		15681	VA							Feeder Load		68	A

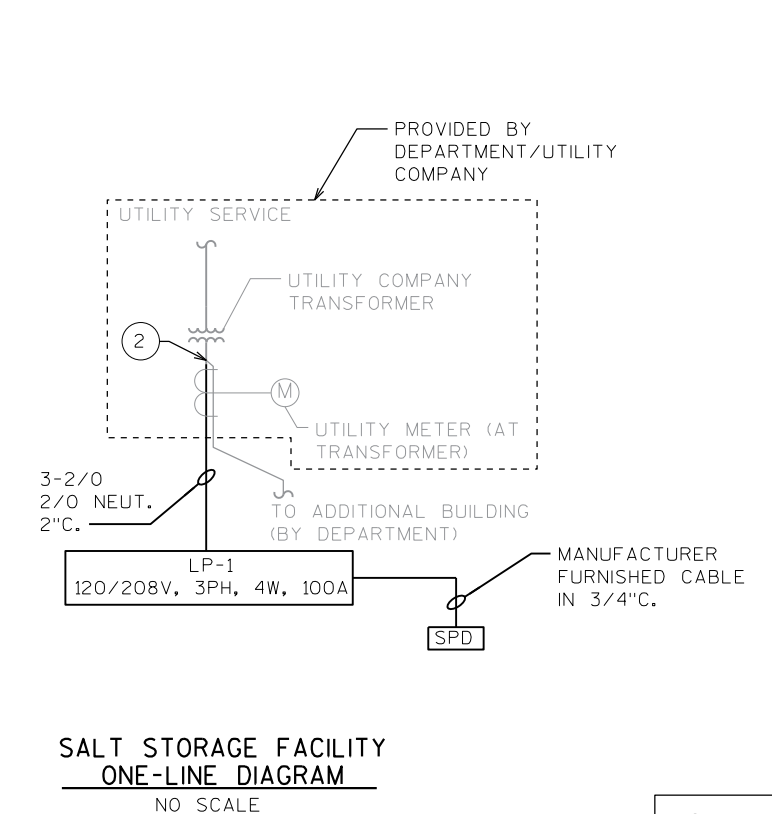
PANEL SD2

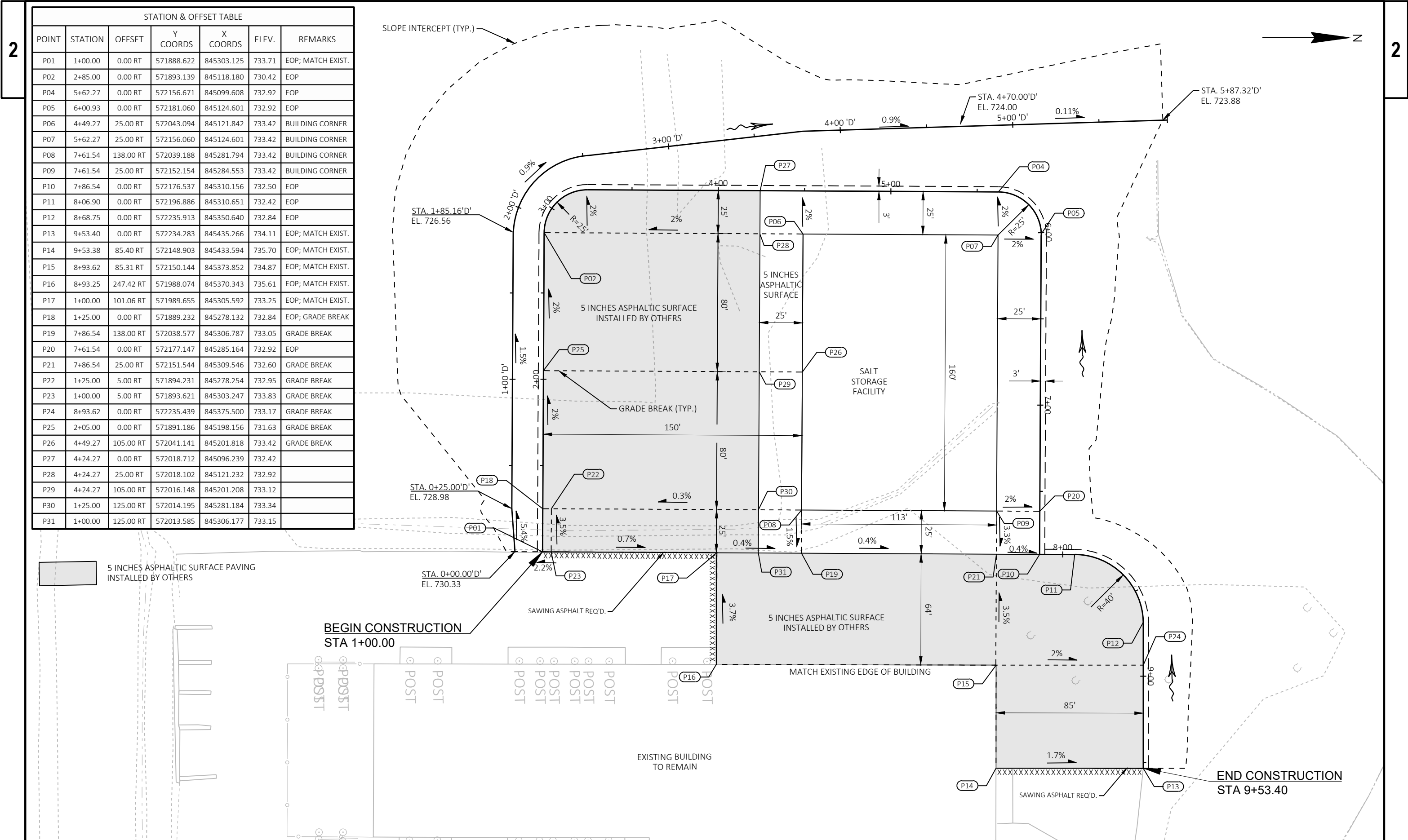
Service: 120/240V, 1ø, 3W				Enclosure: NEMA 1				Mounting: Surface				
Main Breaker: 60A MCB								Main Bus: Copper				
Location: Zebra 12 Building								SCIC: 10 kAIC				
Room Number/Description		Amps	Poles	Ckt. #	Phase A	Phase B	Phase B	Ckt. #	Poles	Amps	Room Number/Description	
Salt Storage Facility Door Access Control Panel		15	1	1	170		1000	2	1	20	Z-12 Building Telecommunication Closet Recept.	
Spare		20	1	3		0		4	1	20	Receptacles (Rewired from Panel SD cct 25)	
Spare		20	1	5	0			6	1	20	Receptacles (Rewired from Panel SD cct 27)	
Spare		20	1	7		0	0	8	1	20	Spare	
Spare		20	1	9	0		0	10	1	20	Spare	
Spare		15	1	11		0	0	12	1	15	Spare	
Spare		15	1	13	0		0	14	1	15	Spare	
Spare		15	1	15		0	0	16	1	15	Spare	
Spare		15	1	17	0		0	18	1	15	Spare	
Total Load per Phase per Side (VA)					170	0	1000	0				
Total Load Phase A (VA)				1170	VA	Total Connected Load				5	A	
Total Load Phase B (VA)				0	VA	Total Connected Load + 25%				6	A	
Total Connected Load (VA)				1170	VA	Spare 20%				1	A	
						Feeder Load				7	A	



KEY NOTES:

- CIRCUIT BREAKER SIZE SHOWN IS APPROXIMATE. CONFIRM CIRCUIT BREAKER SIZE REQUIREMENTS WITH APPROVED SPD MANUFACTURER AND PROVIDE CIRCUIT BREAKER SIZE REQUIRED BY MANUFACTURER.
- CONNECT NEW SERVICE CONDUIT TO DEPARTMENT-PROVIDED CONDUIT STUB-OUT AT TRANSFORMER PAD. COORDINATE WIRE TERMINATION AT TRANSFORMER WITH DEPARTMENT AND UTILITY COMPANY.
- REPLACE EXISTING 20 AMP, SINGLE-POLE CIRCUIT BREAKERS ON CIRCUITS 25 AND 27 WITHIN PANEL SD WITH A NEW 60 AMP TWO-POLE CIRCUIT BREAKER FOR POWER TO NEW PANEL SD2. REROUTE EXISTING CIRCUIT 25 AND 27 WIRING IN CONDUIT TO NEW CIRCUIT BREAKERS WITHIN PANEL SD2 AS INDICATED ON THE ELECTRICAL SITE PLAN. PANEL SD IS A SQUARE D MODEL NQOD PANELBOARD, CATALOG NUMBER NQOD54L225CU. NEW CIRCUIT BREAKER TYPE WITHIN PANEL SD SHALL MATCH THE EXISTING BRANCH CIRCUIT BREAKERS IN THE PANEL. CONTRACTOR SHALL TRACE EXISTING CIRCUITS 25 AND 27 WIRING AND UPDATE CIRCUIT IDENTIFICATION ON ALL WIRING AT ALL EXISTING LOADS TO MATCH NEW CIRCUIT NUMBERS.
- EQUIPMENT/CABLE PROVIDED BY DEPARTMENT.
- PATCH CABLE FURNISHED BY DEPARTMENT AND INSTALLED BY CONTRACTOR. INSTALL CABLE IN FREE AIR FROM JACK TO WIRELESS RECEIVER. PROVIDE CABLE GROMMET AND FIRESTOPPING AT WALL PENETRATION.
- PROVIDE PANDUIT PART NUMBER CBX1IW-A SURFACE MOUNT BOX MOUNTED WITHIN ENCLOSURE FOR DATA JACK. PROVIDE PATCH CABLE FROM DATA JACK TO EQUIPMENT.
- DEPARTMENT WILL REMOVE EXISTING EQUIPMENT NETWORK CONNECTION CABLING TO ALLOW FOR NEW NETWORK INFRASTRUCTURE INSTALLATION. COORDINATE WORK WITH DEPARTMENT.





STATION & OFFSET TABLE						
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEV.	REMARKS
P01	1+00.00	0.00 RT	571888.622	845303.125	733.71	EOP; MATCH EXIST.
P02	2+85.00	0.00 RT	571893.139	845118.180	730.42	EOP
P04	5+62.27	0.00 RT	572156.671	845099.608	732.92	EOP
P05	6+00.93	0.00 RT	572181.060	845124.601	732.92	EOP
P06	4+49.27	25.00 RT	572043.094	845121.842	733.42	BUILDING CORNER
P07	5+62.27	25.00 RT	572156.060	845124.601	733.42	BUILDING CORNER
P08	7+61.54	138.00 RT	572039.188	845281.794	733.42	BUILDING CORNER
P09	7+61.54	25.00 RT	572152.154	845284.553	733.42	BUILDING CORNER
P10	7+86.54	0.00 RT	572176.537	845310.156	732.50	EOP
P11	8+06.90	0.00 RT	572196.886	845310.651	732.42	EOP
P12	8+68.75	0.00 RT	572235.913	845350.640	732.84	EOP
P13	9+53.40	0.00 RT	572234.283	845435.266	734.11	EOP; MATCH EXIST.
P14	9+53.38	85.40 RT	572148.903	845433.594	735.70	EOP; MATCH EXIST.
P15	8+93.62	85.31 RT	572150.144	845373.852	734.87	EOP; MATCH EXIST.
P16	8+93.25	247.42 RT	571988.074	845370.343	735.61	EOP; MATCH EXIST.
P17	1+00.00	101.06 RT	571989.655	845305.592	733.25	EOP; MATCH EXIST.
P18	1+25.00	0.00 RT	571889.232	845278.132	732.84	EOP; GRADE BREAK
P19	7+86.54	138.00 RT	572038.577	845306.787	733.05	GRADE BREAK
P20	7+61.54	0.00 RT	572177.147	845285.164	732.92	EOP
P21	7+86.54	25.00 RT	572151.544	845309.546	732.60	GRADE BREAK
P22	1+25.00	5.00 RT	571894.231	845278.254	732.95	GRADE BREAK
P23	1+00.00	5.00 RT	571893.621	845303.247	733.83	GRADE BREAK
P24	8+93.62	0.00 RT	572235.439	845375.500	733.17	GRADE BREAK
P25	2+05.00	0.00 RT	571891.186	845198.156	731.63	GRADE BREAK
P26	4+49.27	105.00 RT	572041.141	845201.818	733.42	GRADE BREAK
P27	4+24.27	0.00 RT	572018.712	845096.239	732.42	
P28	4+24.27	25.00 RT	572018.102	845121.232	732.92	
P29	4+24.27	105.00 RT	572016.148	845201.208	733.12	
P30	1+25.00	125.00 RT	572014.195	845281.184	733.34	
P31	1+00.00	125.00 RT	572013.585	845306.177	733.15	

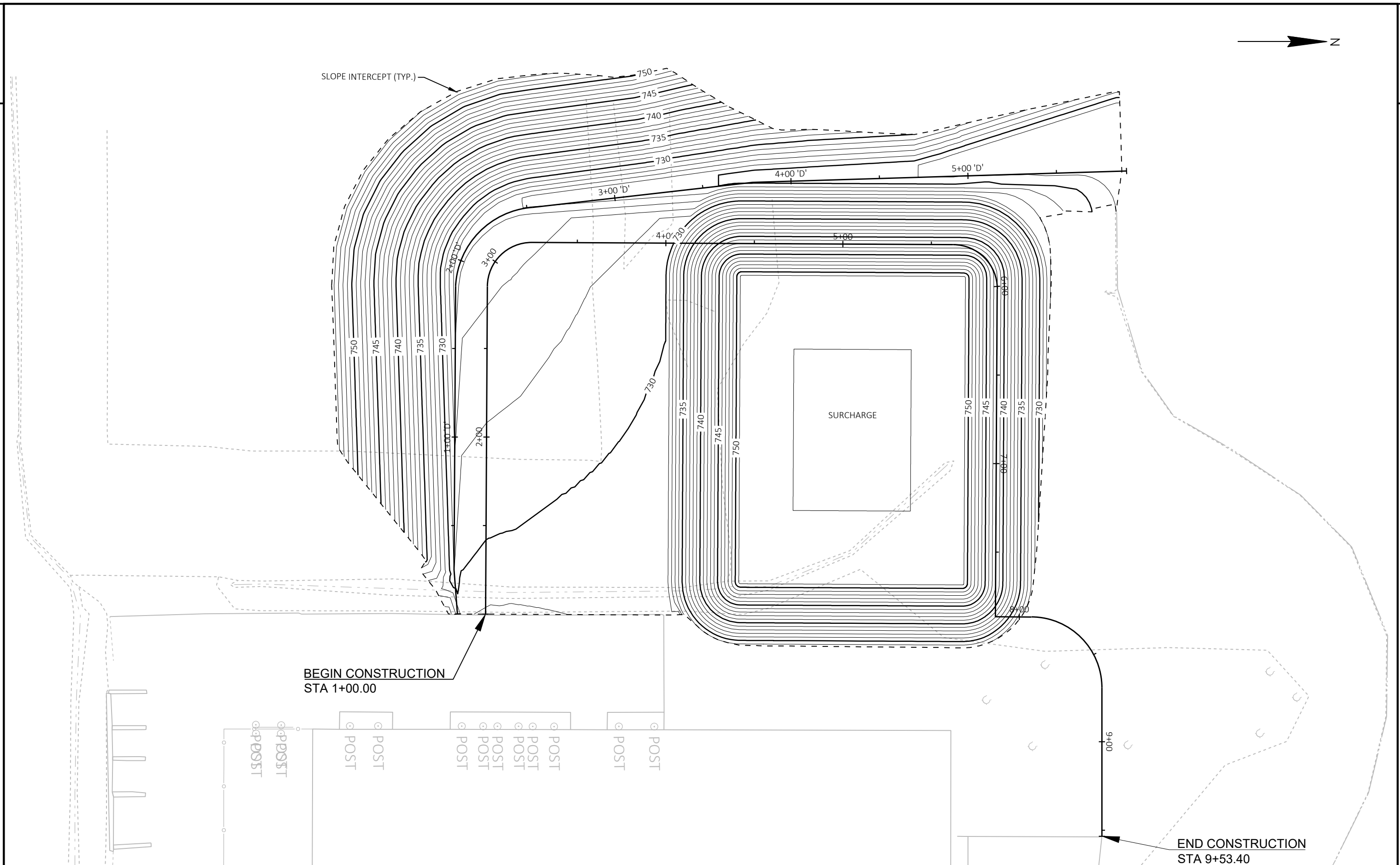
5 INCHES ASPHALTIC SURFACE PAVING
INSTALLED BY OTHERS

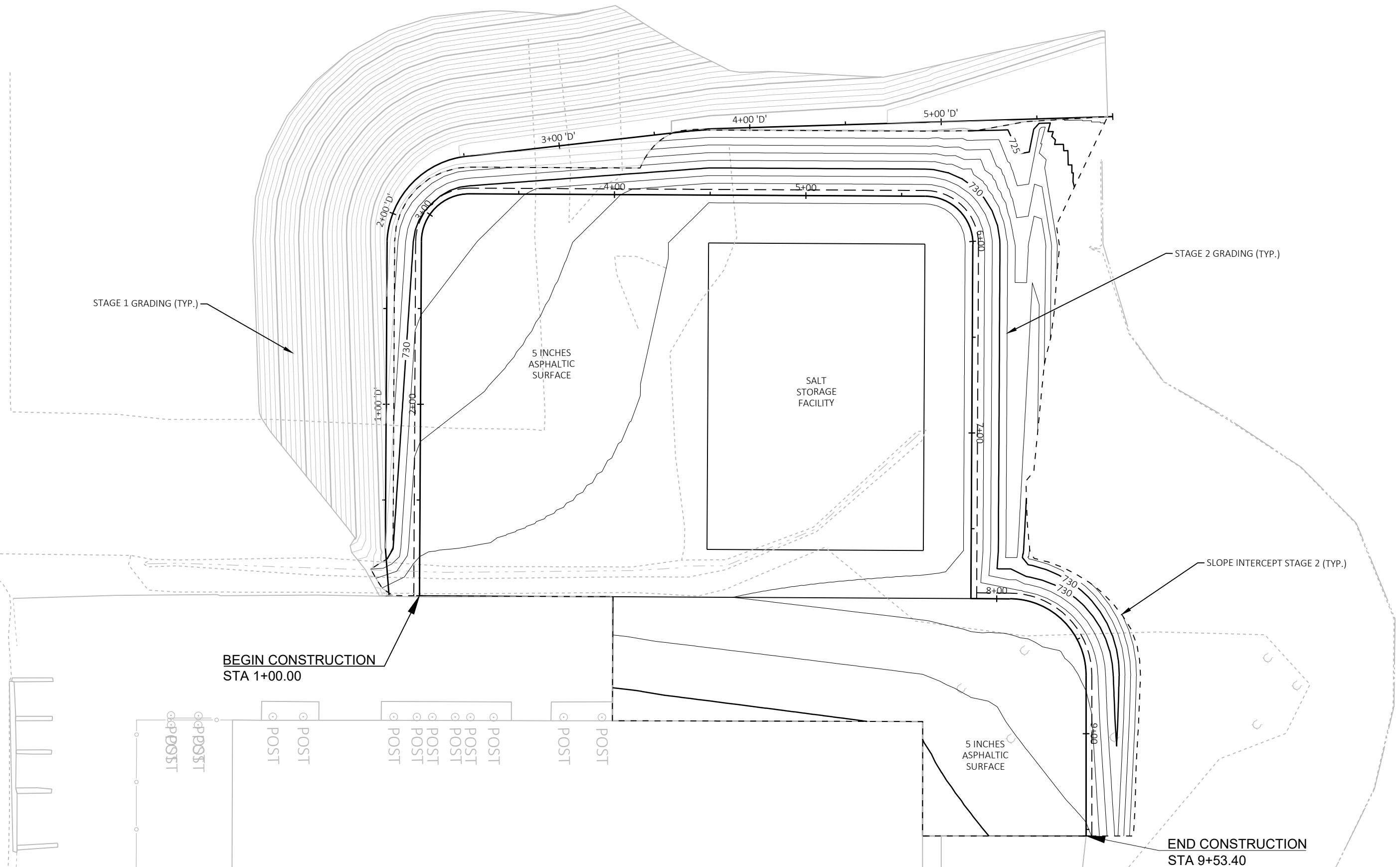
BEGIN CONSTRUCTION
STA 1+00.00

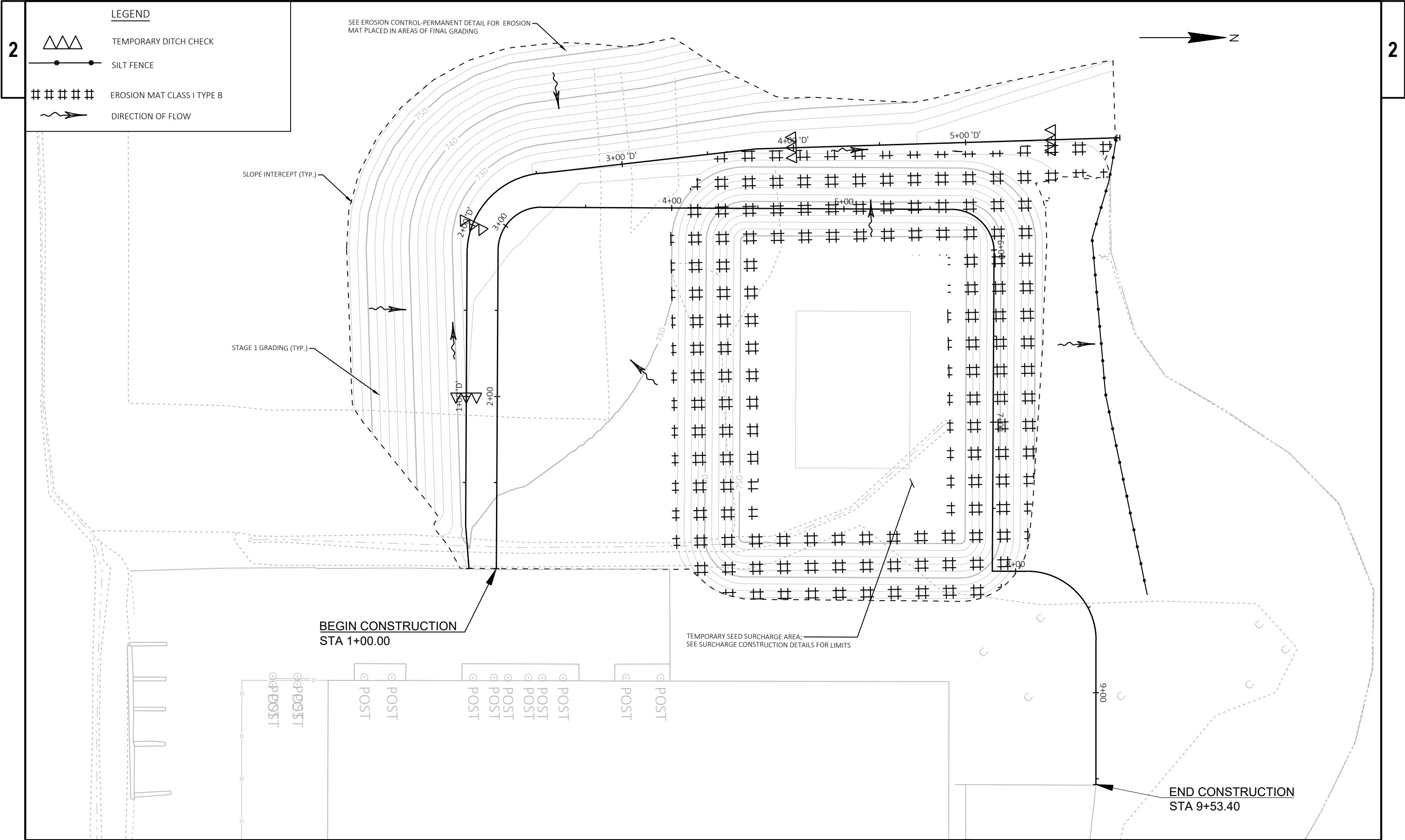
END CONSTRUCTION
STA 9+53.40

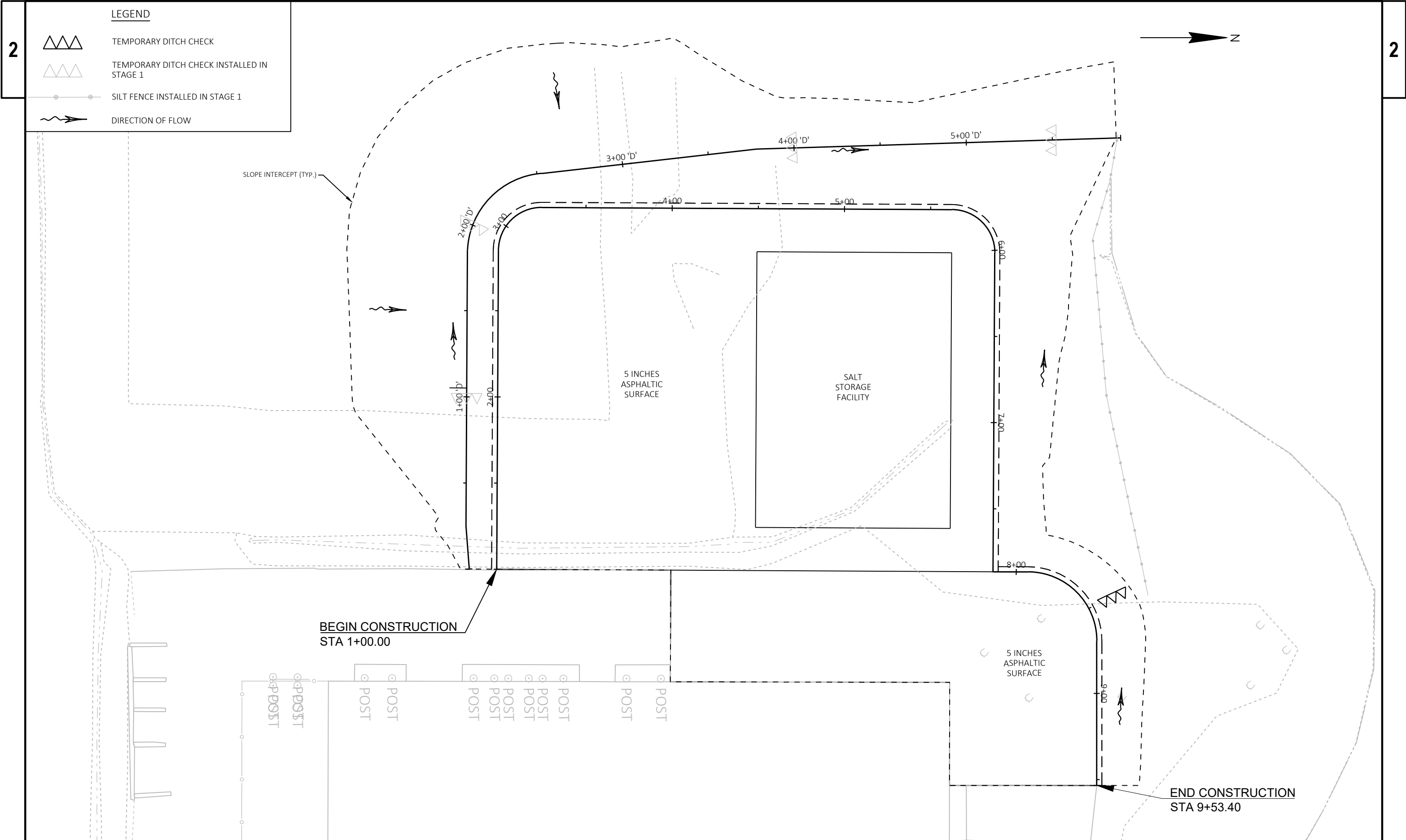
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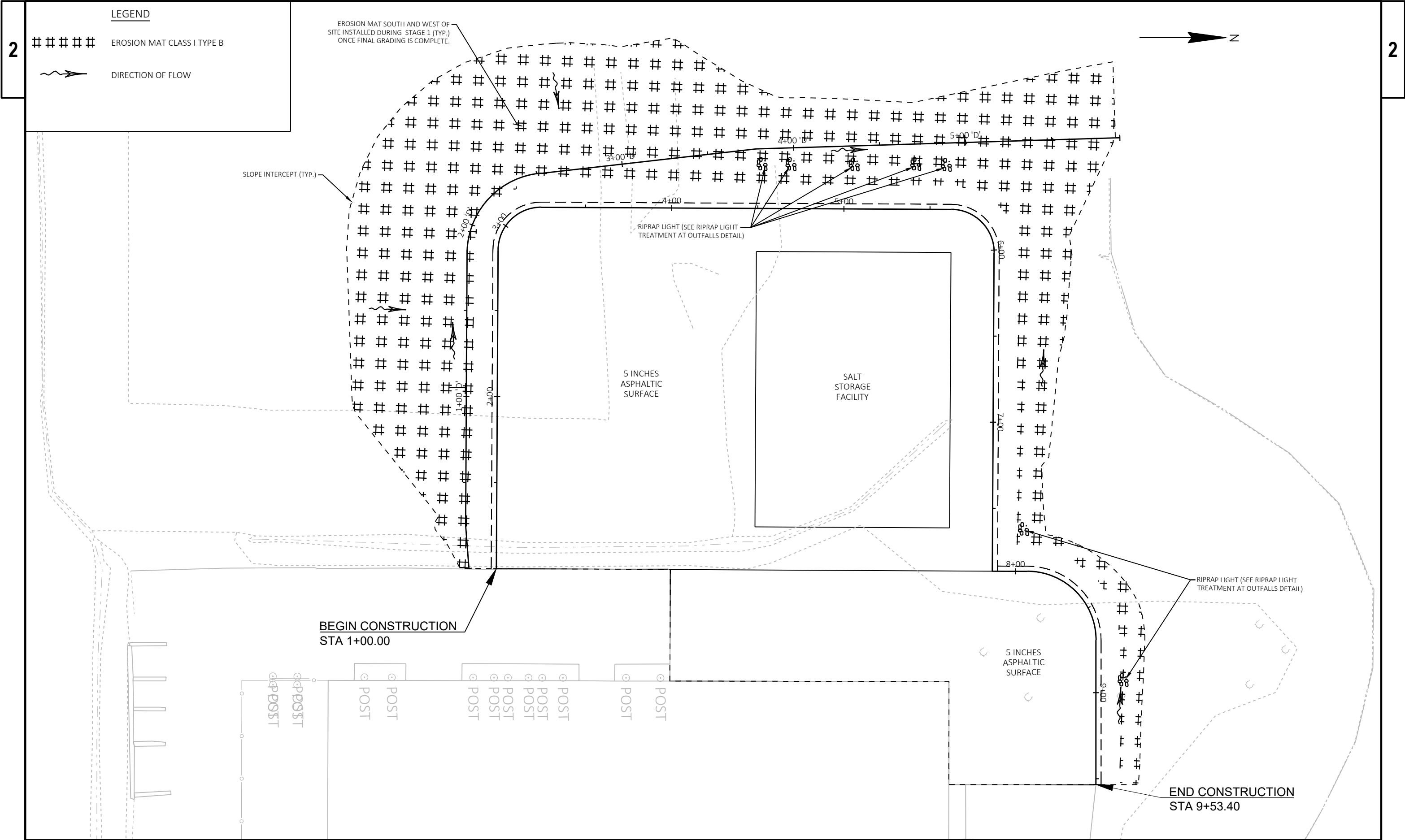
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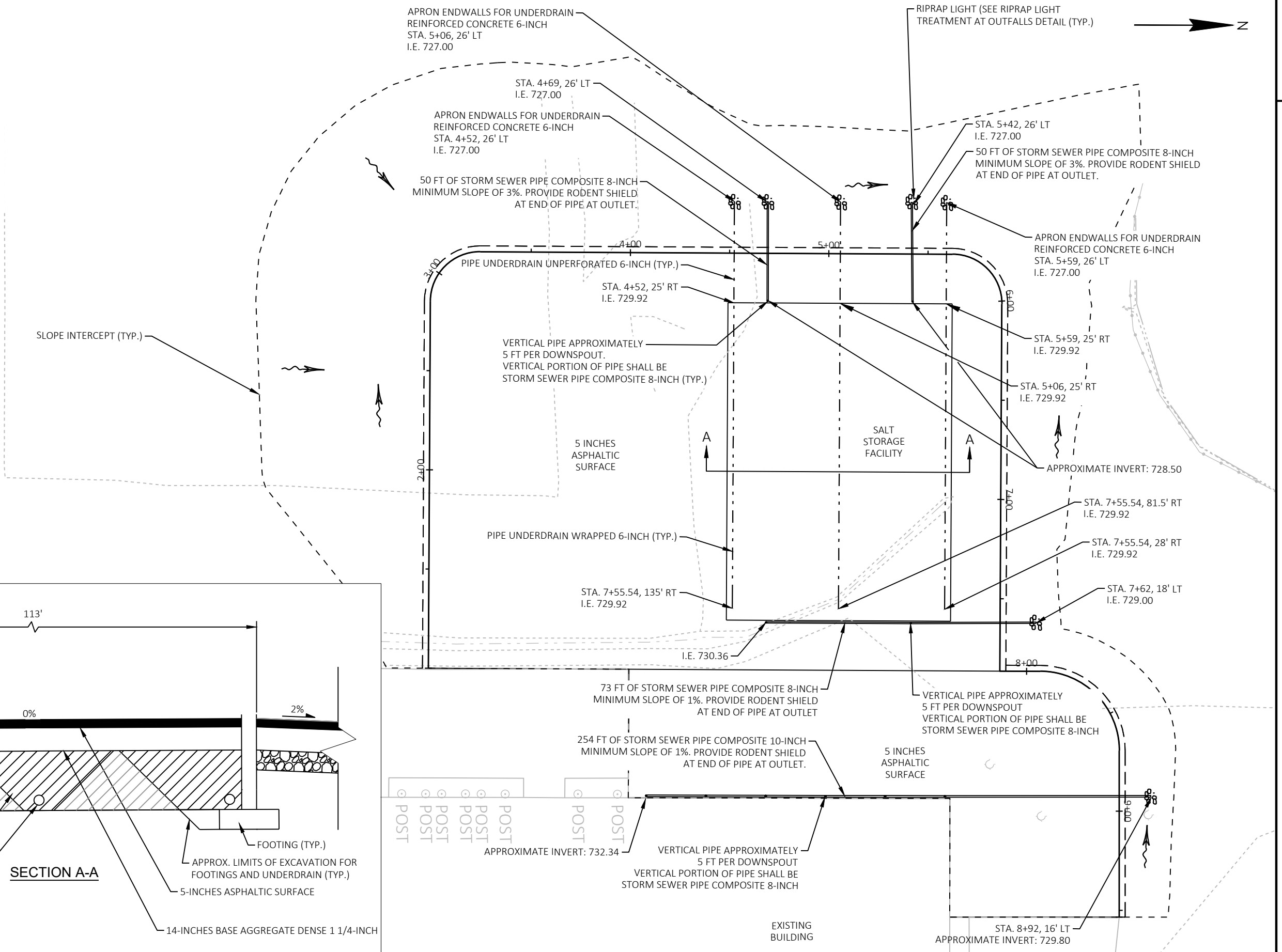
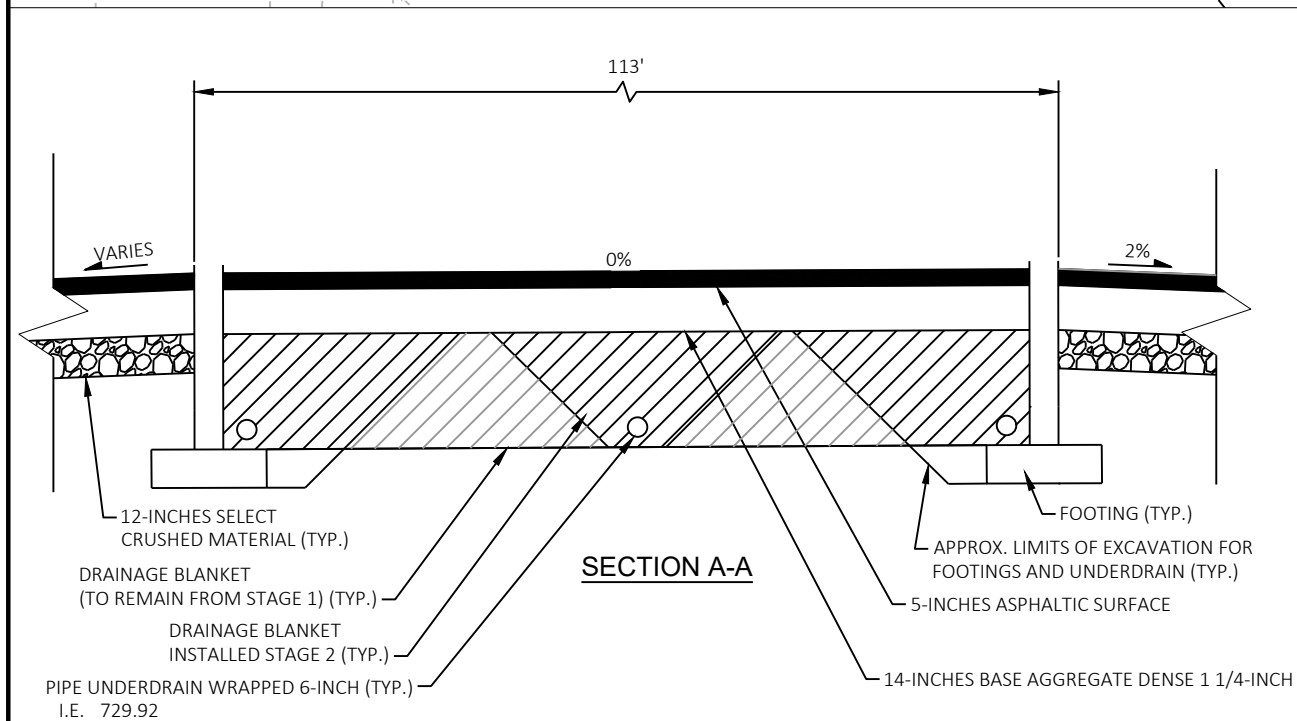




2

DIRECTION OF FLOW

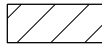
1. REFER TO SALT STORAGE BUILDING DRAWINGS AND CONSTRUCTION DETAILS FOR DETAILS ON DOWNSPOUT/STORM SEWER, RODENT SHIELD, AND RIPRAP TREATMENT AT OUTFALLS.
2. REFER TO SALT STORAGE BUILDING DRAWINGS FOR LOCATIONS OF BUILDING DOWNSPOUTS. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF STORM SEWER PIPING WITH BUILDING DOWNSPOUT LOCATIONS.



29

WISDOT/CADDS SHEET 42

LEGEND



WORK ZONE



TRAFFIC CONTROL SIGNS

GENERAL NOTES
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.
"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.
THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL
BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

WORK ZONE

TEMPORARY FENCE 6-FOOT

TEMPORARY FENCE 6-FOOT

CTH 00

HOLLAND ROAD

350'

350'

350'



END
ROAD WORK

G20-2A
48"x24"

ROAD
WORK
AHEAD

W20-1A

TRUCKS
ENTERING
&
LEAVING

W08-6A

TRUCKS
ENTERING
&
LEAVING

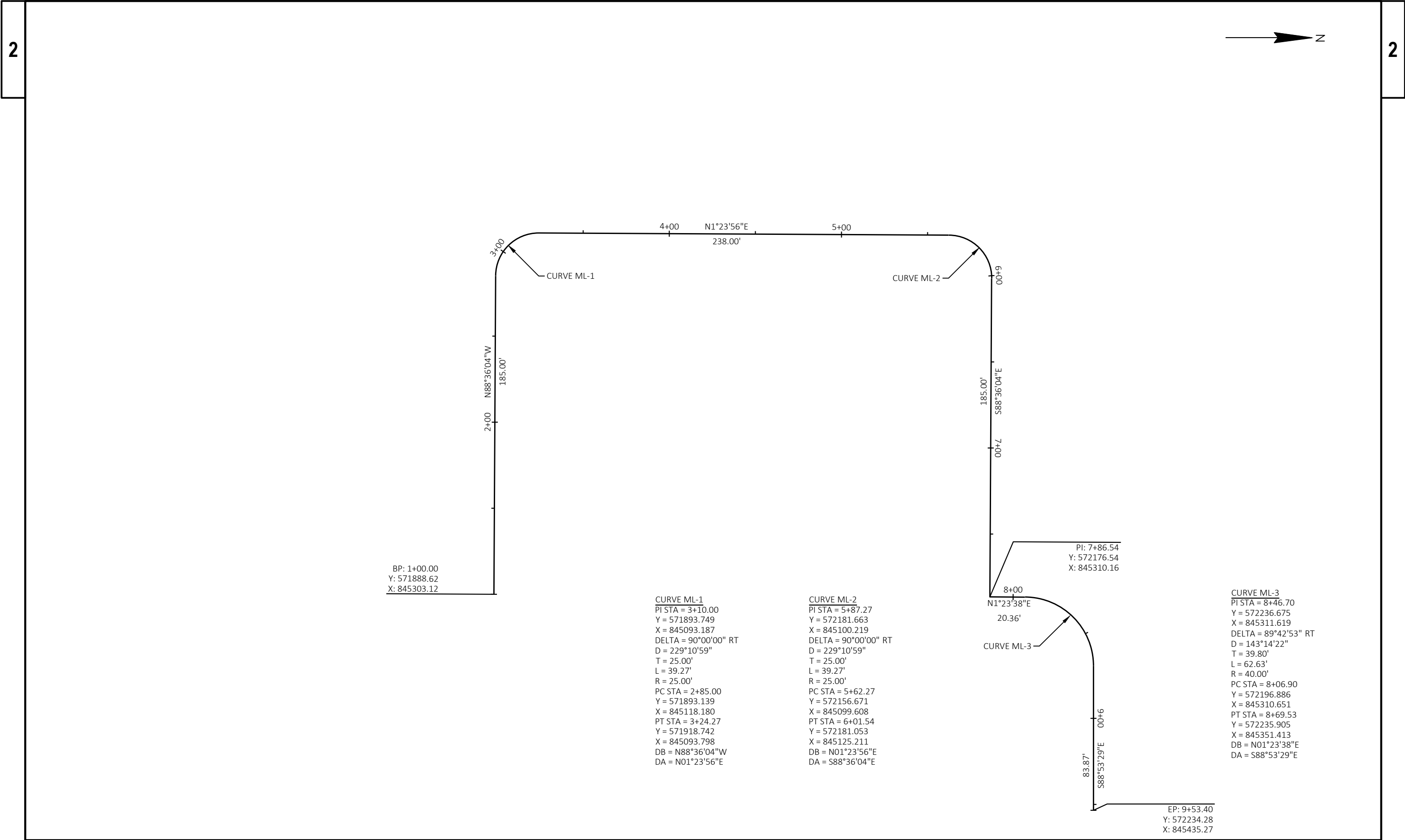
W08-6A

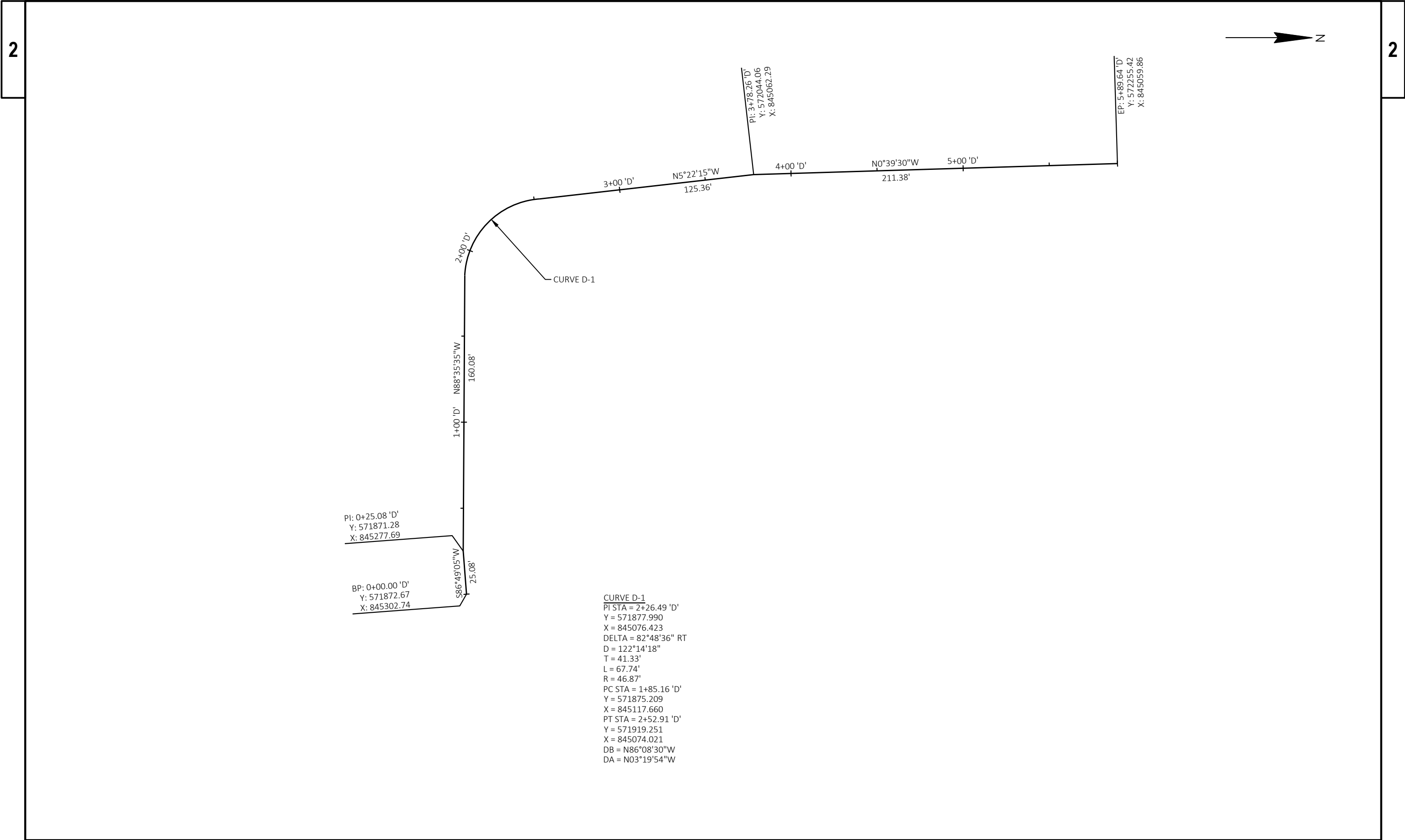
ROAD
WORK
AHEAD

W20-1A

END
ROAD WORK

G20-2A
48"x24"





Estimate Of Quantities

1130-65-88

Line	Item	Item Description	Unit	Total	Qty
0002	205.0100	Excavation Common	CY	66,607.000	66,607.000
0004	213.0100	Finishing Roadway (project) 01. 1130-65-88	EACH	1.000	1.000
0006	305.0110	Base Aggregate Dense 3/4-Inch	TON	98.000	98.000
0008	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	7,886.000	7,886.000
0010	312.0110	Select Crushed Material	TON	8,886.000	8,886.000
0012	455.0605	Tack Coat	GAL	192.000	192.000
0014	465.0105	Asphaltic Surface	TON	1,070.000	1,070.000
0016	606.0100	Riprap Light	CY	2.100	2.100
0018	608.6008	Storm Sewer Pipe Composite 8-Inch	LF	285.000	285.000
0020	608.6010	Storm Sewer Pipe Composite 10-Inch	LF	254.000	254.000
0022	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	153.000	153.000
0024	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	462.000	462.000
0026	612.0806	Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	EACH	3.000	3.000
0028	618.0100	Maintenance and Repair of Haul Roads (project) 01. 1130-65-88	EACH	1.000	1.000
0030	619.1000	Mobilization	EACH	1.000	1.000
0032	624.0100	Water	MGAL	76.000	76.000
0034	625.0500	Salvaged Topsoil	SY	7,890.000	7,890.000
0036	628.1504	Silt Fence	LF	375.000	375.000
0038	628.1520	Silt Fence Maintenance	LF	750.000	750.000
0040	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0042	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0044	628.2004	Erosion Mat Class I Type B	SY	13,255.000	13,255.000
0046	628.7504	Temporary Ditch Checks	LF	111.000	111.000
0048	628.7560	Tracking Pads	EACH	1.000	1.000
0050	628.7570	Rock Bags	EACH	15.000	15.000
0052	629.0210	Fertilizer Type B	CWT	6.000	6.000
0054	630.0130	Seeding Mixture No. 30	LB	415.000	415.000
0056	630.0200	Seeding Temporary	LB	471.000	471.000
0058	630.0300	Seeding Borrow Pit	LB	325.000	325.000
0060	630.0500	Seed Water	MGAL	388.000	388.000
0062	643.0900	Traffic Control Signs	DAY	1,782.000	1,782.000
0064	643.5000	Traffic Control	EACH	1.000	1.000
0066	645.0130	Geotextile Type R	SY	21.000	21.000
0068	690.0150	Sawing Asphalt	LF	375.000	375.000
0070	SPV.0035	Special 01. Drainage Blanket	CY	3,750.000	3,750.000
0072	SPV.0060	Special 01. Construction Staking Survey Project 1130-65-88	EACH	1.000	1.000
0074	SPV.0060	Special 02. Precast Concrete Salt Storage Building	EACH	1.000	1.000
0076	SPV.0060	Special 03. Settlement Gauges	EACH	5.000	5.000
0078	SPV.0060	Special 04. Vibrating Wire Piezometer Instrumentation System	EACH	1.000	1.000
0080	SPV.0090	Special 01. Fence Temporary 6-Foot	LF	300.000	300.000
0082	SPV.0090	Special 02. Prefabricated Vertical Drains	LF	53,000.000	53,000.000
0084	SPV.0090	Special 03. Prebored Prefabricated Vertical Drains	LF	159,000.000	159,000.000

3

3

EARTHWORK SUMMARY															
		(1)	(2)	(3)	(4)	*	(5)	(6)	(1)	(8)	(9)	(10)	(10)		
		EXCAVATION	SALVAGED/ UNUSABLE	AVAILABLE	EBS	312.0110 SELECT	205.0100 TOTAL	EBS	SITE			208.0100			
		COMMON	PAVEMENT MATERIAL REMOVAL	MATERIAL	EXCAVATION	CRUSHED MATERIAL	EXCAVATION COMMON	EXCAVATION REDUCED	UNEXPANDED FILL	EXPANDED FILL	MASS ORDINATE	-BORROW	+WASTE		
		5% OF AVAILABLE MATERIAL						FACTOR 0.8	FACTOR 1.30						
CATEGORY	STATION - STATION	LOCATION	CY	CY	CY	CY	TON	CY	CY	CY	CY	CY	CY	CY	
1000	STAGE 1	1+00.00 - 9+53.40	LT/RT	33,580	0	33,580	1,679	3,190	35,259	1,343	24,740	30,416	3,164	0	3,164
	STAGE 2	1+00.00 - 9+53.40	LT/RT	30,140	0	30,140	298	566	30,438	238	70	-218	30,358	0	30,358
		FOOTINGS		910	0	910	0	0	910	0	0	0	910	0	910
	TOTALS			64,630	0	64,630	1,977	3,756	66,607	1,581	24,810	30,198	34,432	0	34,432
	PAY QUANTITIES			-	-	-		3,756	66,607		-	-	-	-	-

- 1) QUANTITIES BASED ON PROPOSED CONTOURS
- 2) SALVAGED/UNUSABLE MATERIALS ARE INCLUDED IN EXCAVATION COMMON COLUMN
- 3) AVAILABLE MATERIAL = EXCAVATION COMMON - SALVAGED MATERIALS
- 4) EBS DOES NOT INCLUDE MATERIAL PLACED FOR SURCHARGE IN STAGE 1 AND REMOVED IN STAGE 2. EBS EXCAVATION TO BE BACKFILLED WITH SELECT CRUSHED MATERIAL
- 5) TOTAL EXCAVATION COMMON = EXCAVATION COMMON + EBS EXCAVATION
- 6) REDUCED EBS IN FILL: EXCAVATED EBS MATERIAL IS USEABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = 0.8
- 8) EXPANDED FILL FACTOR = (UNEXPANDED FILL - EBS EXCAVATION REDUCED)*1.30
- 9) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE CATEGORY
PLUS QTY INDICATES AN EXCESS OF MATERIAL WITHIN THE CATEGORY,
MINUS QTY INDICATES A SHORTAGE OF MATERIAL WITHIN THE CATEGORY
- 10) WASTE = POSITIVE MASS ORDINATE, BORROW = NEGATIVE MASS ORDINATE

* ADDITIONAL QUANTITIES LISTED ELSEWHERE.

BASE AGGREGATE SUMMARY						
			*			
			312.0110 SELECT CRUSHED MATERIAL TON	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
1000	1+00.00 - 6+00.93	LT/RT	3,550	77	5,630	57
	7+86.54 - 9+53.40	LT/RT	1,580	16	1,880	19
	UNDISTRIBUTED	LT/RT	-	5	375	-
	UNDISTRIBUTED	LT/RT	-	-	1	-
TOTALS			5,130	98	7,886	76

ASPHALTIC SURFACE				
			465.0105	455.0605
CATEGORY	STATION - STATION	LOCATION	TON	TACK COAT GAL
1000	4+24.27 - 6+01.54	RT	500	90
	INSIDE SALT STORAGE FACILITY	RT	560	100
	UTILITY SERVICE	-	10	2
TOTALS			1,070	192

PROJECT NO: 1130-65-88

HWY: IH 41

COUNTY: OUTAGAMIE

MISCELLANEOUS QUANTITIES

SHEET: 34

E

FILE NAME : _____

PLOT DATE : _____

PLOT BY : _____

PLOT NAME : _____

PLOT SCALE : 1" = 1"

WISDOT/CADDs SHEET 42

ROOF DRAIN OUTFALLS						
CATEGORY	LOCATION	608.6008	608.6010	*	*	REMARKS
		STORM SEWER PIPE		606.0100	645.0130	
		COMPOSITE		RIPRAP	GEOTEXTILE	
		8-INCH	10-INCH	LIGHT	TYPE R	
		LF	LF	CY	SY	
1000	4+69	56	-	0.3	3	INCLUDES VERTICAL PORTION
	5+42	56	-	0.3	3	INCLUDES VERTICAL PORTION
	7+62	145	-	0.3	3	INCLUDES VERTICAL PORTION
	EX BUILDING	28	254	0.3	3	INCLUDES VERTICAL PORTION
TOTALS		285	254	1.2	12	

*ADDITIONAL QUANTITIES LISTED ELSEWHERE

PIPE UNDERDRAIN SUMMARY						
CATEGORY	STATION-STATION	612.0206	612.0406	612.0806	*	*
		PIPE UNDERDRAIN	PIPE UNDERDRAIN	APRON ENDWALLS FOR	606.0100	645.0130
		UNPERFORATED	WRAPPED	UNDERDRAIN REINFORCED	RIPRAP	GEOTEXTILE
		6-INCH	6-INCH	CONCRETE 6-INCH	LIGHT	TYPE R
		LF	LF	EACH	CY	SY
1000	4+52 - 7+55	51	154	1	0.3	3
	5+06 - 7+56	51	154	1	0.3	3
	5+59 - 7+55	51	154	1	0.3	3
	TOTALS	153	462	3	0.9	9

*ADDITIONAL QUANTITIES LISTED ELSEWHERE

FINISHING ITEMS									
CATEGORY	STATION - STATION	STAGE	LOCATION	625.0500	629.0210	630.0130	630.0200	630.0300	630.0500
				SALVAGED TOPSOIL SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 30 LB	SEEDING TEMPORARY LB	SEEDING BORROW PIT LB	SEED WATER MGAL
1000	4+08 -8+50	STAGE 1 - SURCHARGE	LT	0	0	0	177	0	150
	5+80 - 9+53	PERMANENT	LT	1,540	1	90	54	0	40
	0+00'D' - 5+55'D'	PERMANENT	LT & RT	4,410	3	226	136	0	110
	UTILITY SERVICE RESTORATION	PERMANENT	-	360	1	16	10	0	10
	WASTE SITE		-	0	0	0	0	260	0
	UNDISTRIBUTED		-	1,580	1	83	94	65	78
TOTALS				7,890	6	415	471	325	388

SILT FENCE MAINTENANCE				
CATEGORY	STATION - STATION	LOCATION	628.1504	628.1520
			SILT FENCE LF	SILT FENCE MAINTENANCE LF
1000	5+87 - 8+60	LT	300	600
	UNDISTRIBUTED	LT	75	150
	TOTALS		375	750

EROSION MAT				
CATEGORY	STATION - STATION	STAGE	LOCATION	628.2004
				CLASS I TYPE B SY
1000	4+08 - 8+50	STAGE 1-SURCHARGE	LT	4,655
	5+80 - 9+53	PERMANENT	LT	1,540
	0+00'D' - 5+55'D'	PERMANENT	LT & RT	4,410
	UNDISTRIBUTED			2,650
TOTAL				13,255

MOBILIZATIONS EROSION CONTROL	
CATEGORY	628.1905 EACH
1000	2

MOBILIZATIONS EMERGENCY EROSION CONTROL	
CATEGORY	628.1910 EACH
1000	2

TRACKING PADS	
CATEGORY	628.7560 EACH
1000	1

TEMPORARY DITCH CHECKS				
CATEGORY	STATION	LOCATION	628.7504 LF	REMARKS
1000	2+00	LT	8	STAGE 1
	3+00	LT	10	STAGE 1
	4+00 'D'	LT/RT	17	STAGE 1
	5+50 'D'	LT/RT	45	STAGE 1
	8+50	LT	11	STAGE 2
	UNDISTRIBUTED		20	
TOTAL			111	

ROCK BAGS DITCH CHECK			
CATEGORY	STATION	LOCATION	628.7570 ROCK BAGS EACH
1000	UNDISTRIBUTED	DITCH	15

SAWING ASPHALT			
CATEGORY	STATION	LOCATION	690.0150 LF
1000	1+00.0	RT	165
	9+53.4	RT	85
	-	UTILITY SERVICE	125
TOTAL			375

TRAFFIC CONTROL			
643.0900			
CATEGORY	DURATION DAYS	SIGNS EACH	DAY
1000	297	6	1,782

DRAINAGE BLANKET			
CATEGORY	STATION - STATION	LOCATION	SPV.0035.01 CY
1000	4+04 - 8+40	RT	3,750

PRECAST CONCRETE SALT STORAGE BUILDING			
CATEGORY	STATION	LOCATION	SPV.0060.02 EACH
1000	5+50	RT	1

GEOTECHNICAL INSTRUMENTATION			
CATEGORY	LOCATION	SPV.0060.03 SETTLEMENT GAUGES EACH	SPV.0060.04 VIBRATING WIRE PIEZOMETER INSTRUMENTATION SYSTEM EACH
1000	SALT STORAGE FACILITY	5	1

FENCE TEMPORARY 6-FOOT		
CATEGORY	STATION - STATION	SPV.0090.01 LF
1000	EXISTING PAVEMENT	300

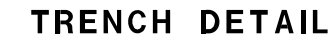
VERTICAL DRAINS SUMMARY				
CATEGORY	STATION - STATION	LOCATION	SPV.0090.02 PREFABRICATED VERTICAL DRAINS LF	SPV.0090.03 PREBORED PREFABRICATED VERTICAL DRAINS LF
1000	4+04 - 8+40	RT	53,000	159,000

Standard Detail Drawing List

08E09-06	SILT FENCE
08E14-01	TRACKING PAD
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
09B16-03	PULL BOX NON-CONDUCTIVE
13C19-03	HMA LONGITUDINAL JOINTS



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

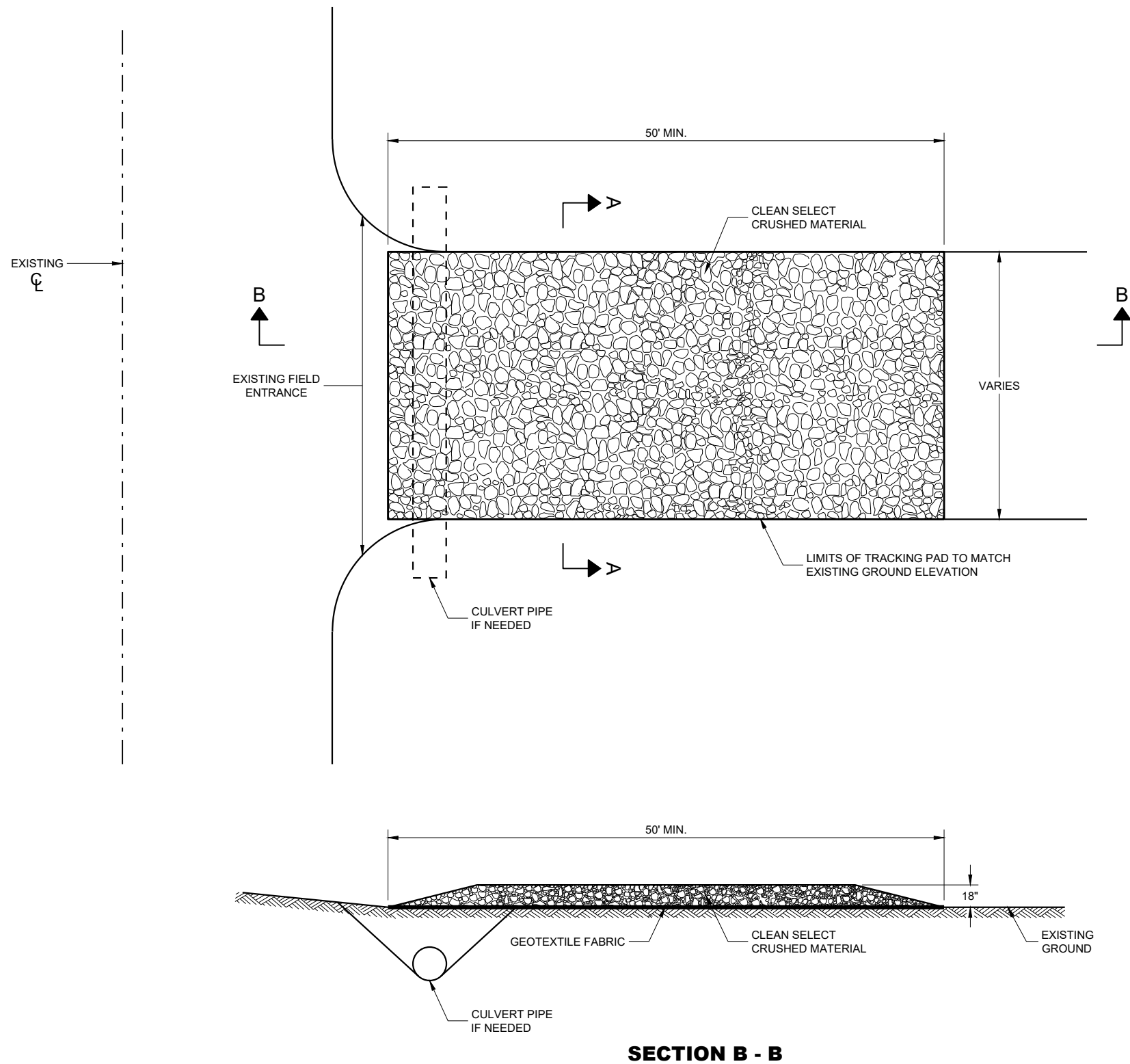


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Cannata
CHIEF ROADWAY DEVELOP **38** INCHES

FHWA



GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

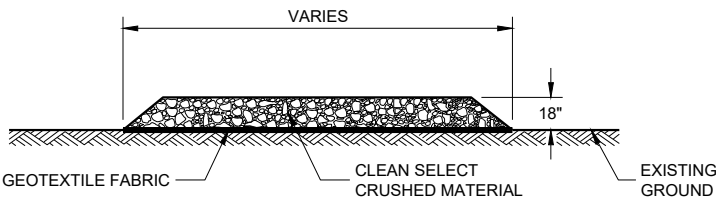
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A - A

TRACKING PAD

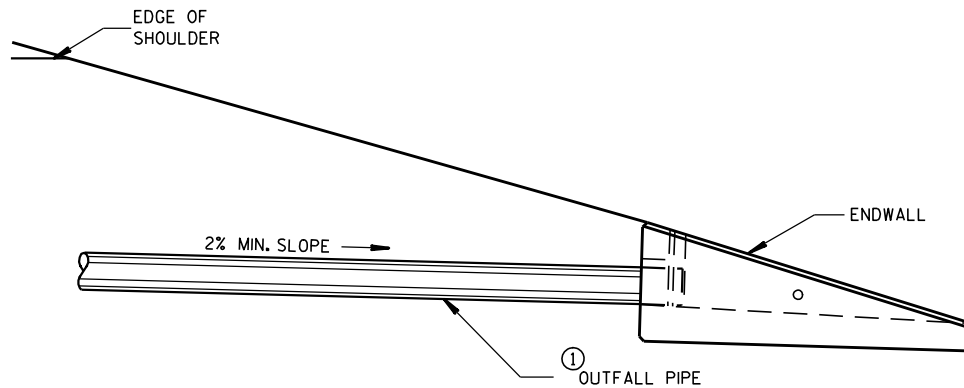
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 39

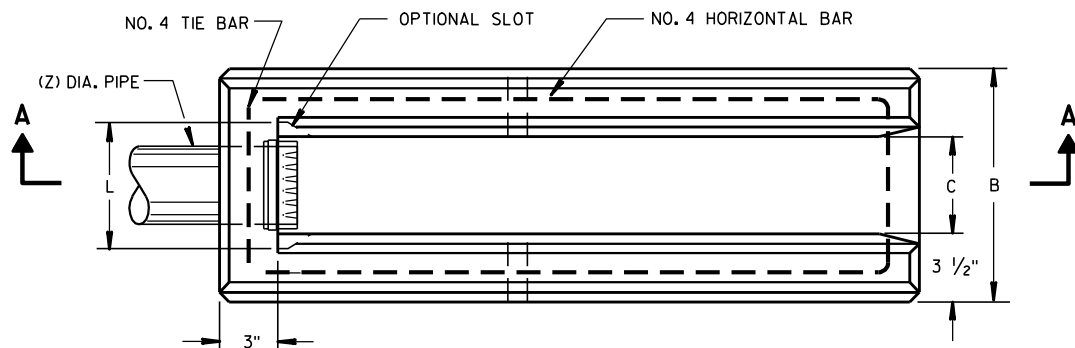
FHWA

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

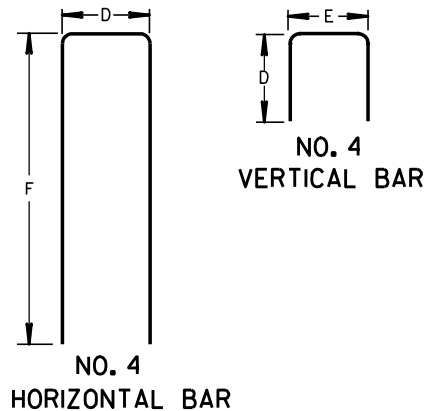
** APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



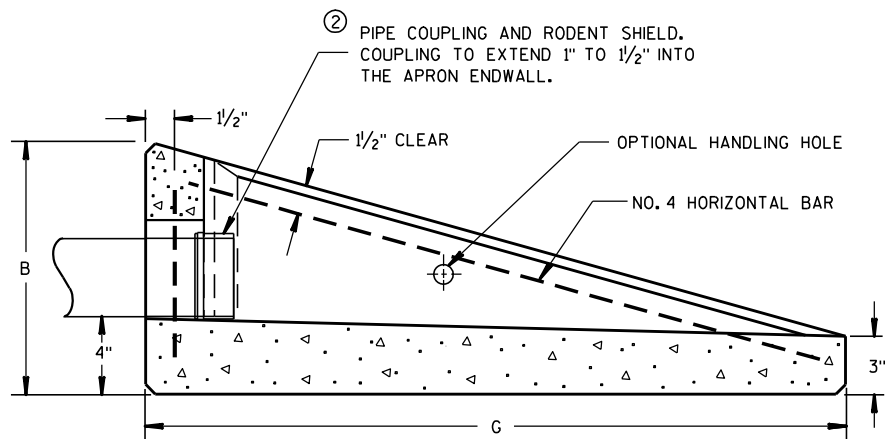
INSTALLATION DETAIL



PLAN VIEW

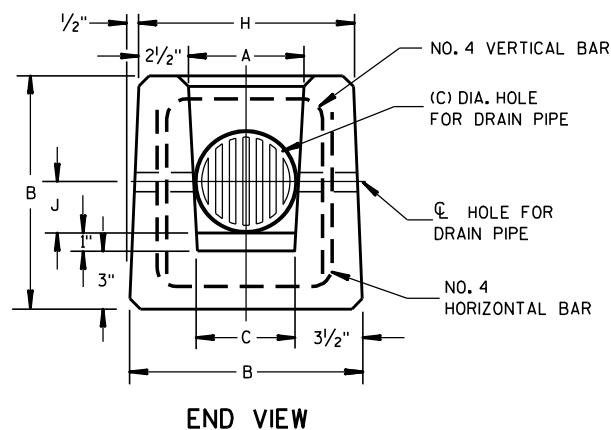


BAR STEEL REINFORCEMENT DETAILS



SECTION A-A

CONCRETE APRON ENDWALL FOR UNDERDRAIN



END VIEW

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

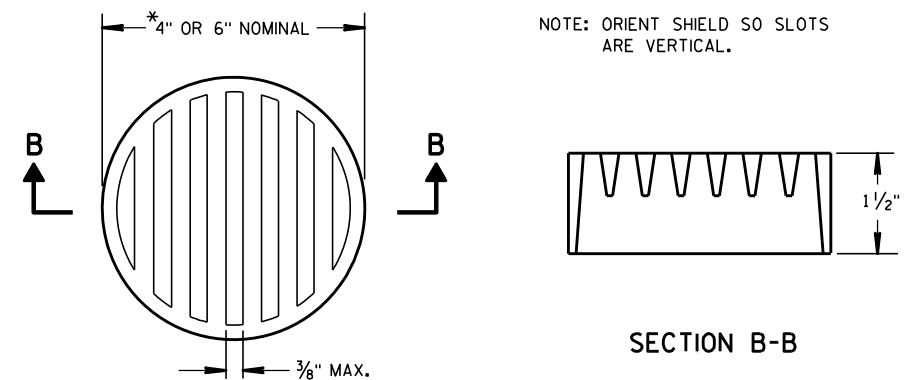
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

- ① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

- ② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/10/98

DATE

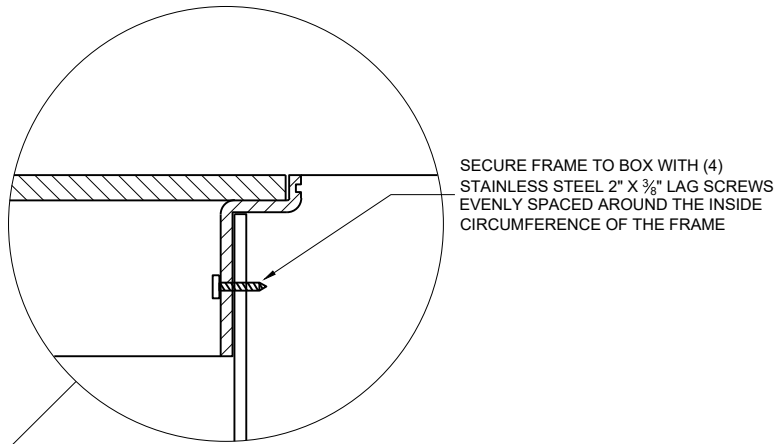
FHWA

/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPER

INEER

DIMENSION IN INCHES		NON- CONDUCTIVE PULL BOX	
BOX DIAMETER ** (INSIDE)	A	24	24
BOX OVERALL OUTSIDE DIAMETER	B	27	27
BOX LENGTH	C	36	42
FRAME OPENING	D	22 ½	22 ½
WEIGHT IN POUNDS *			
COVER		50	50
BOX ONLY		75	85

DIAMETER VARIES FROM TOP TO BOTTOM WITH THE
DIAMETER LARGER AT THE BOTTOM TO PREVENT FROST
HEAVE.



NOTCH FOR PAVEMENT ADHESION

DO NOT SECURE FRAME TO BOX.
ALLOW FRAME ADHESION TO SIDEWALK
FOR UNIFORM COVER/PAVEMENT
VERTICAL MOVEMENT.

12" MAX. EXTENSION

EXTENSION RING

TOP OF ORIGINAL BOX

SECURE EXTENSION TO BOX WITH (4) STAINLESS STEEL 2" X $\frac{3}{8}$ " LAG SCREWS EVENLY SPACED AROUND THE INSIDE CIRCUMFERENCE OF THE OVERLAP

NON-CONDUCTIVE FRAME AND COVER

ELECTRIC

B

FINAL GRADE

D

A

3"

6" MIN. (TYP.)

6"

2" PVC PIPE CAP ON BOTH ENDS WITH 7 OR 8 1/4" HOLES DRILLED IN EACH END. INSTALL BELOW ALL OTHER PIPES.

INSTALL ELECTRICAL END BELLS ON ALL NON-METALLIC CONDUIT BEFORE INSTALLATION OF WIRE AND/OR CABLE. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CUT OPENINGS AS REQUIRED IN THE FIELD

ALL CONDUIT PITCHED TO DRAIN TO PULL BOXES

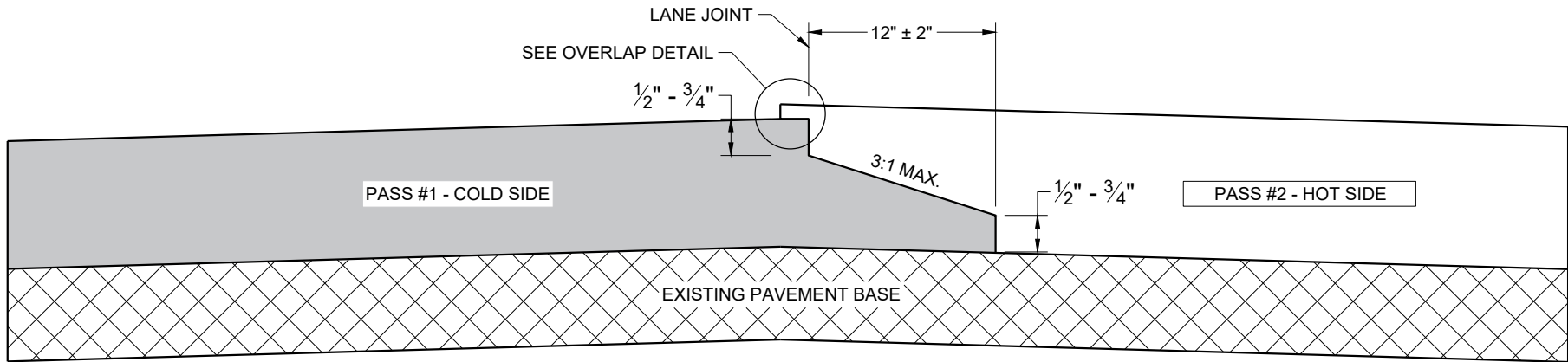
12"

2" DRAIN DUCT TO DITCH OR SEWER WHEN SPECIFIED

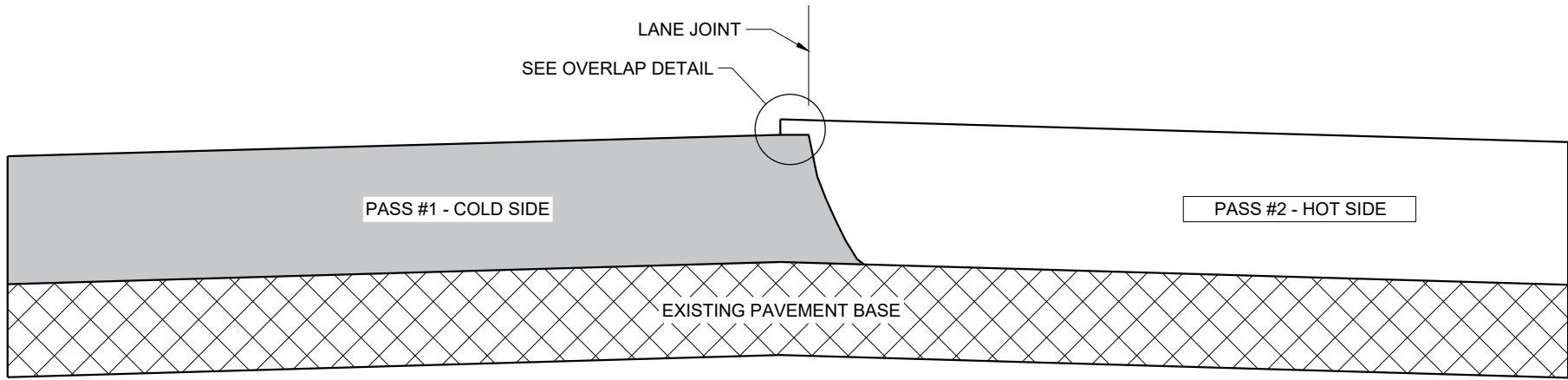
NO. 2 COARSE AGGREGATE (SEE SECTION 501 OF THE STANDARD SPECIFICATIONS)

The diagram shows a cross-sectional view of a magnetic field setup. A horizontal bar with diagonal hatching is positioned at a height of 5' from the base. Two vertical poles are located 2.5' apart from each other and 2.5' from the base. A wire loop is draped over the horizontal bar, with its ends extending down to the base. The left end is labeled 'ENTER' and the right end is labeled 'EXIT'. Arrows on the wire indicate a clockwise direction of flow when viewed from above. The base is a shaded rectangular area with a wavy bottom edge.

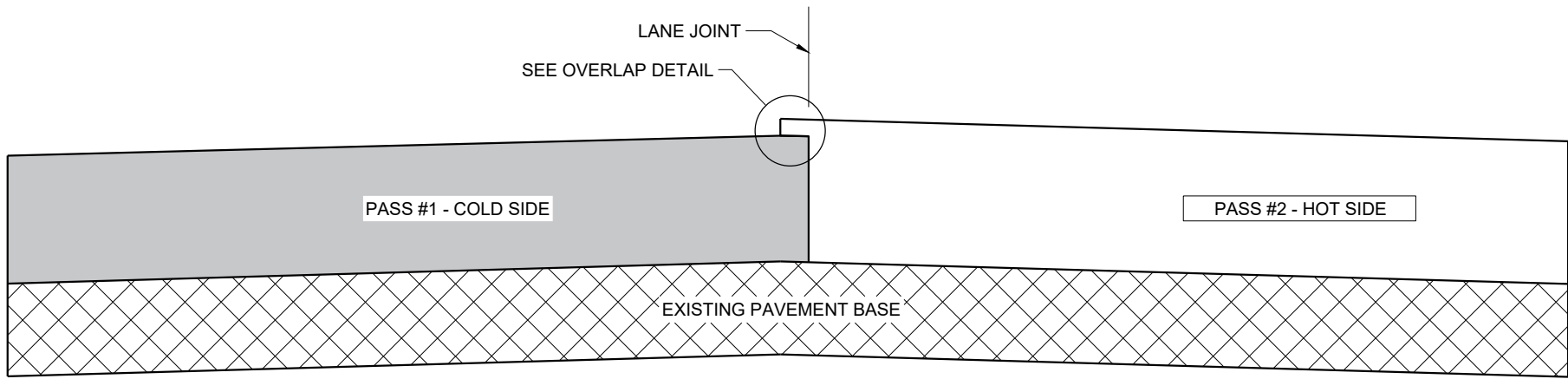
PULL BOXES NON-CONDUCTIVE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>November 2024</u> DATE	<u>/S/ Ahmet Demirbilek</u> STATE ELECTRICAL ENGINEER



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

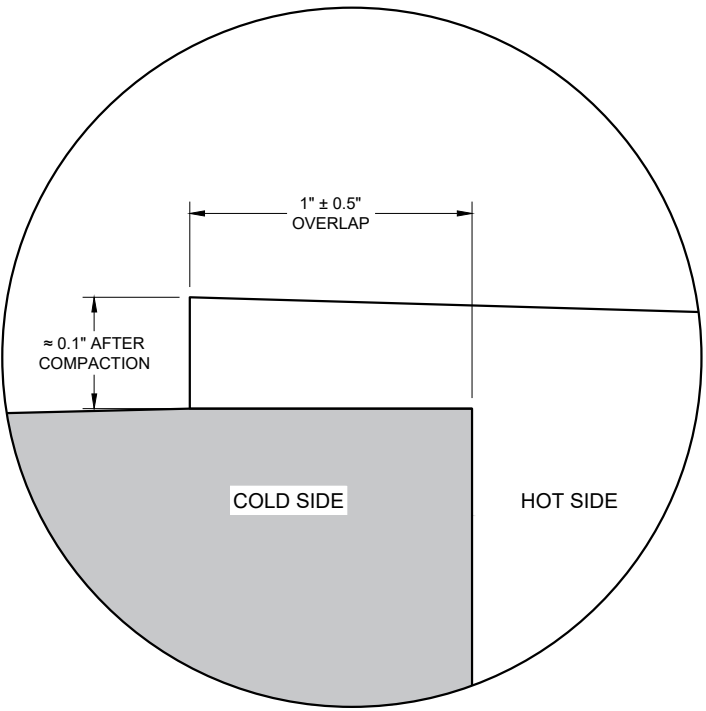
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY $0.1"$ AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO $2"$ FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



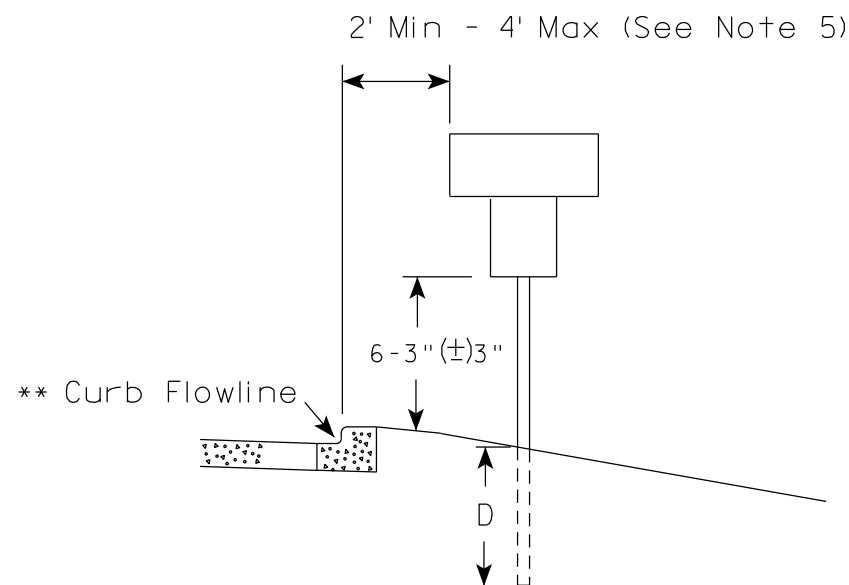
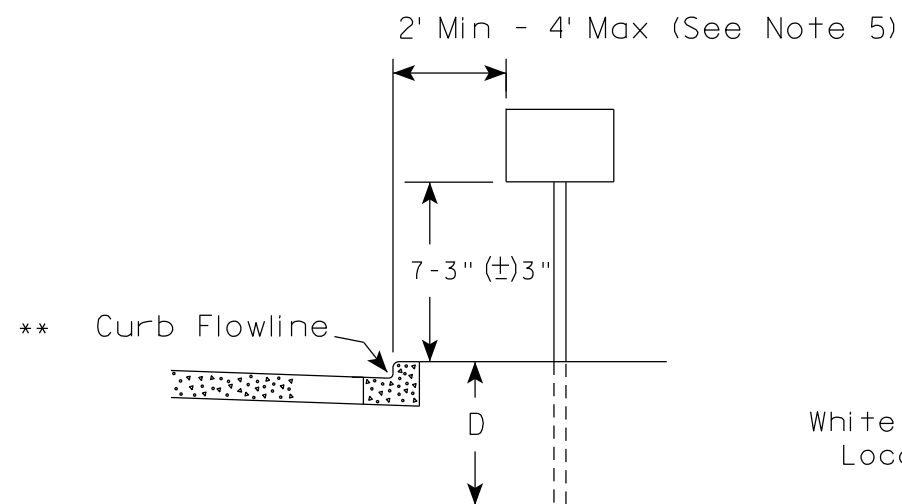
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

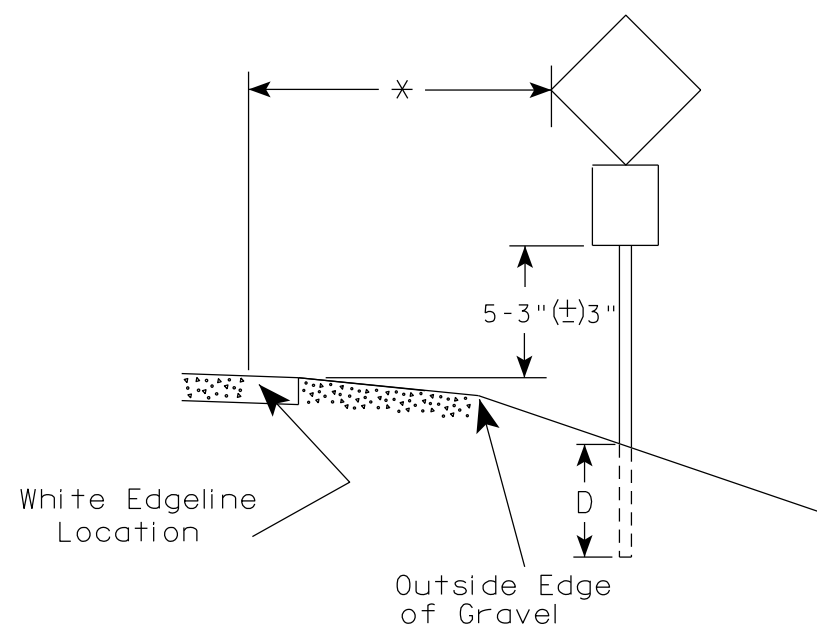
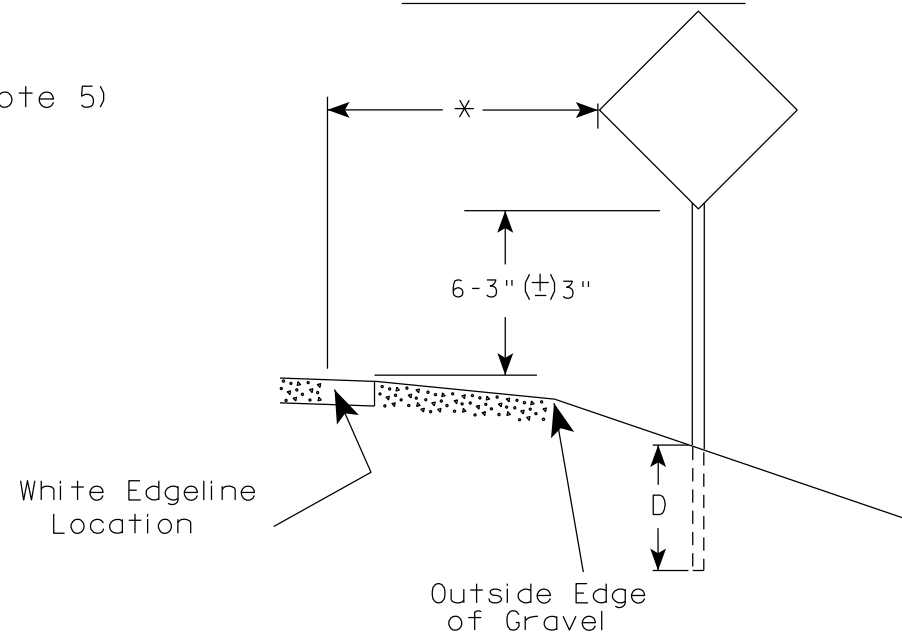
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 42
FHWA

URBAN AREA



* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

RURAL AREA (See Note 2)



* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 12/6/23

PLATE NO. A4-3.23

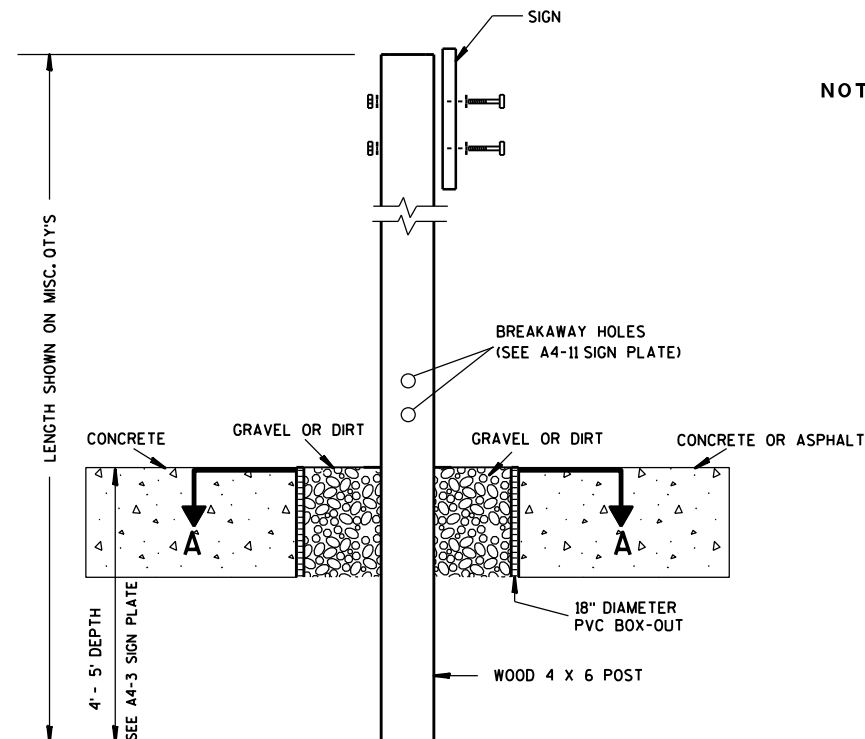
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 43

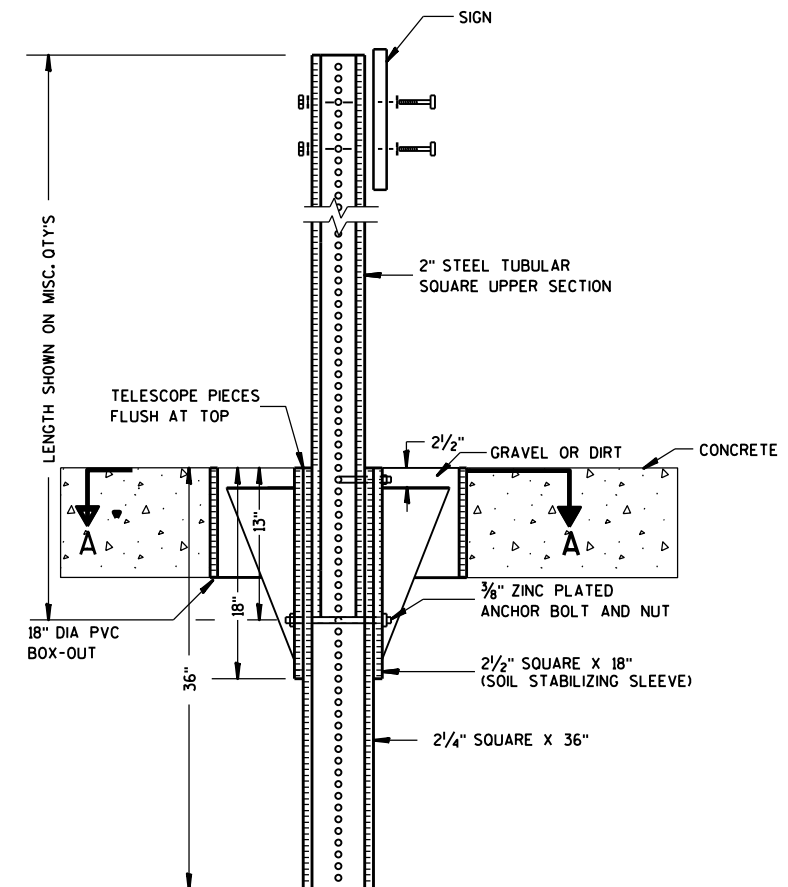
E



ELEVATION VIEW

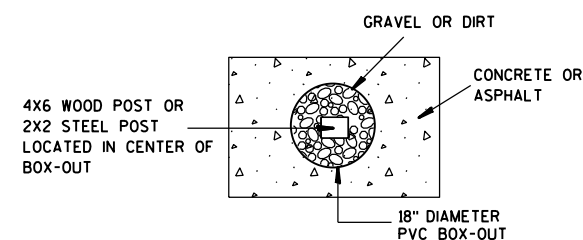
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES:**
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
 2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
 3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 44 A4-3B.1

PROJECT NO:

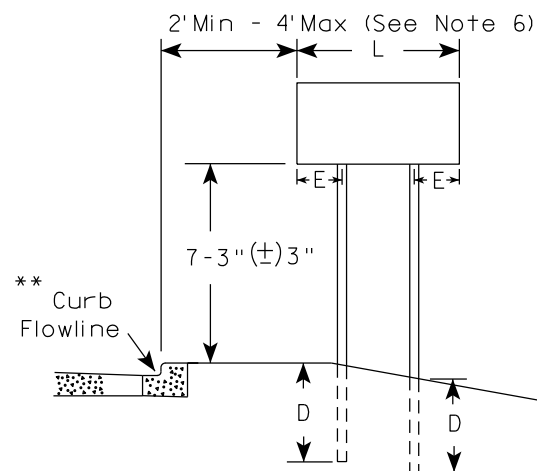
HWY:

COUNTY:

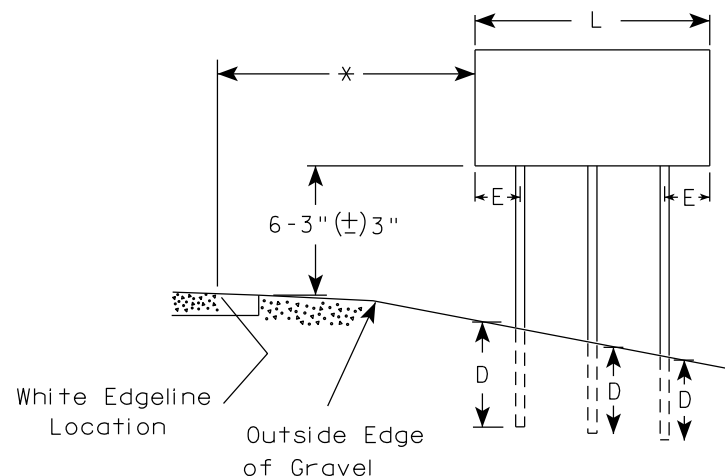
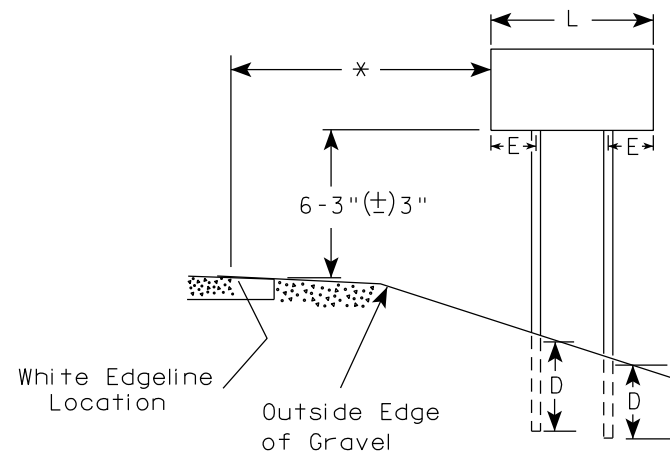
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E

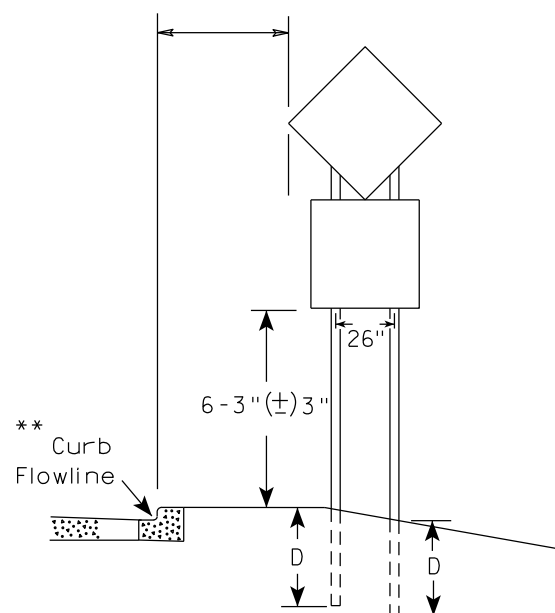
URBAN AREA



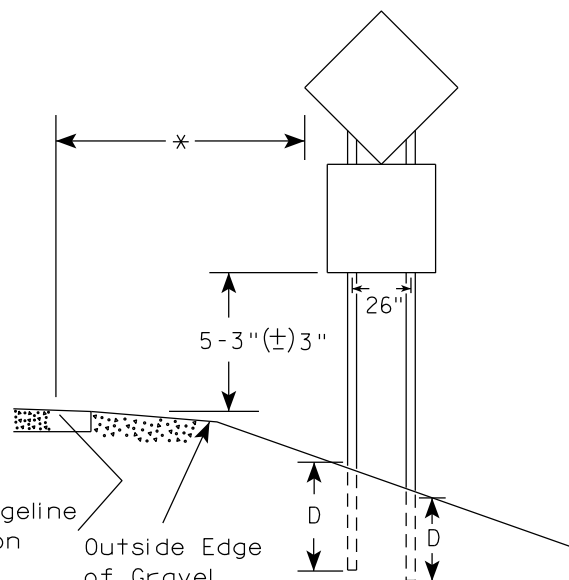
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

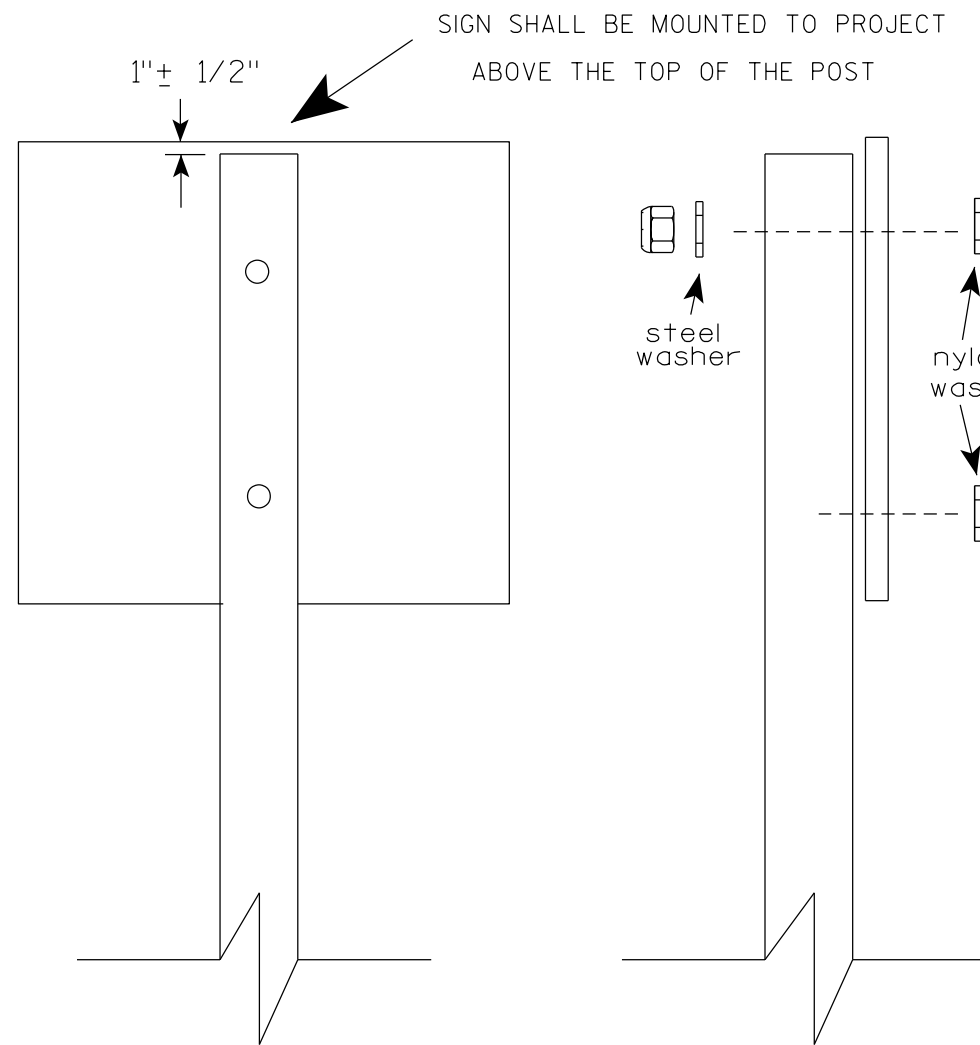
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

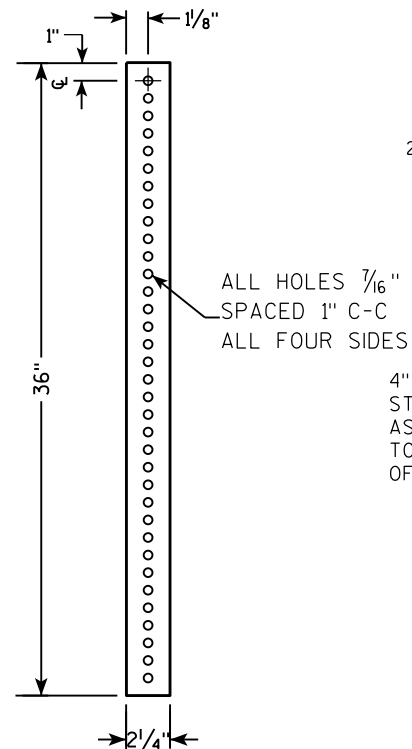
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
- $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
- $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

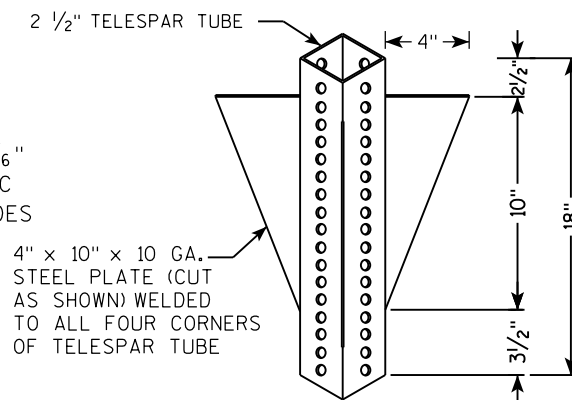
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



LENGTH SHOWN ON MISC. QTY'S

SEE SIGN PLATE
A4-8 FOR BOLT
WASHER, & NUT
MATERIAL

2" STEEL TUBULAR
SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ "
SPACED 1" C-C
ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER
ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

TELESCOPE PIECES
FLUSH AT TOP

18" DIA SCHEDULE
40 PVC
BOX-OUT

36"

13"

18"

2 1/2" SQUARE X 18"
(SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

$\frac{3}{8}$ " ZINC PLATED
ANCHOR BOLT AND NUT

LENGTH SHOWN ON MISC. QTY'S

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

TELESCOPE PIECES FLUSH AT TOP

18"

12"

36"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

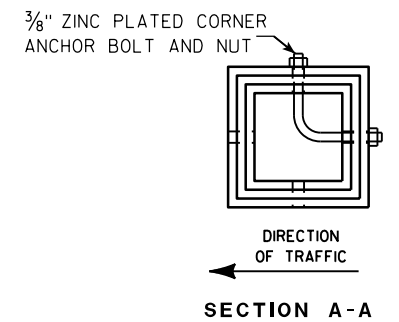
2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

A

B

C



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthieu R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 17 14-9.9

SHEET NO: E

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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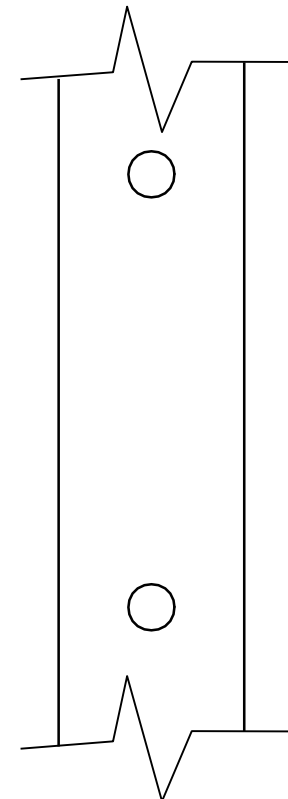
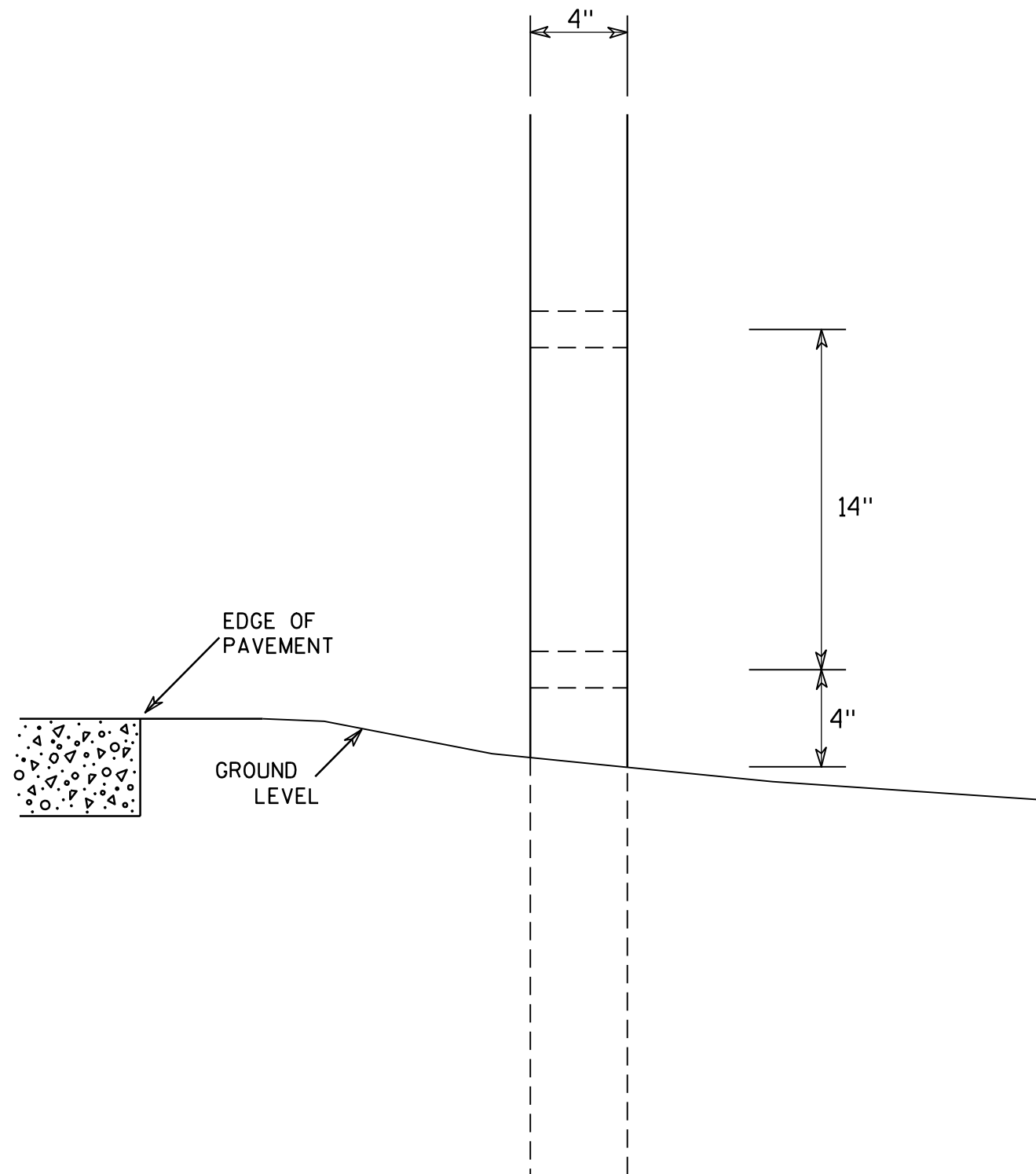
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PLOT BY : mscs_ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

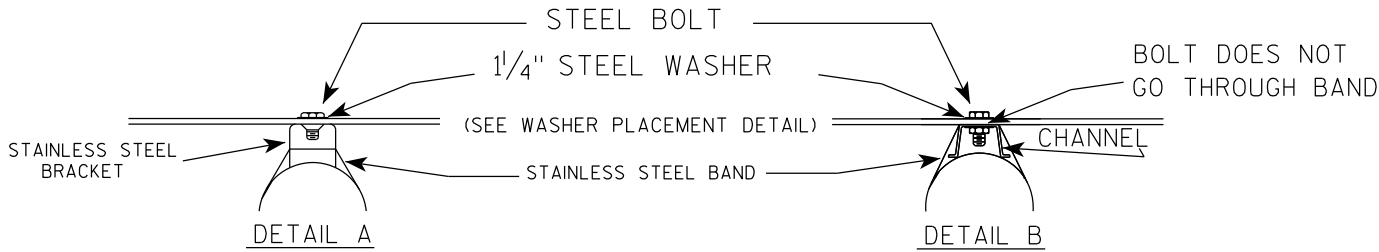
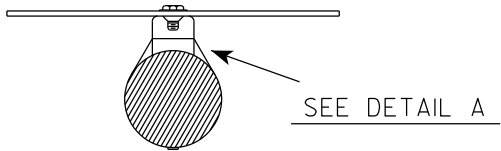
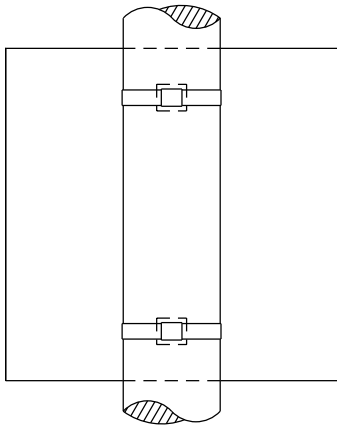
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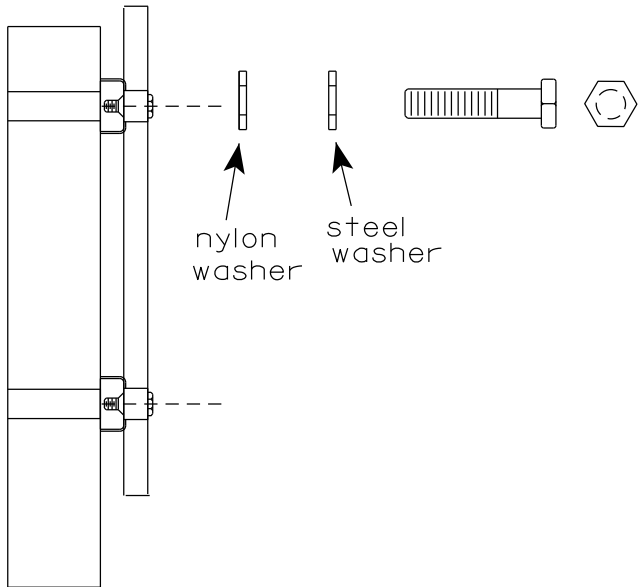
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

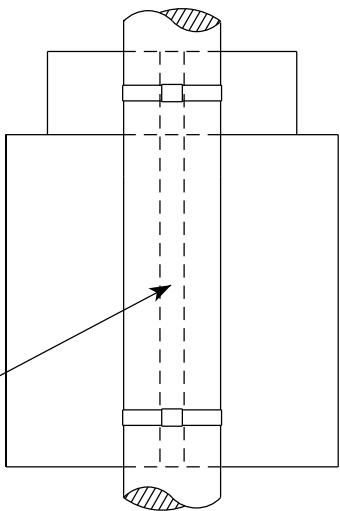


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

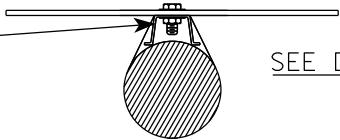
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



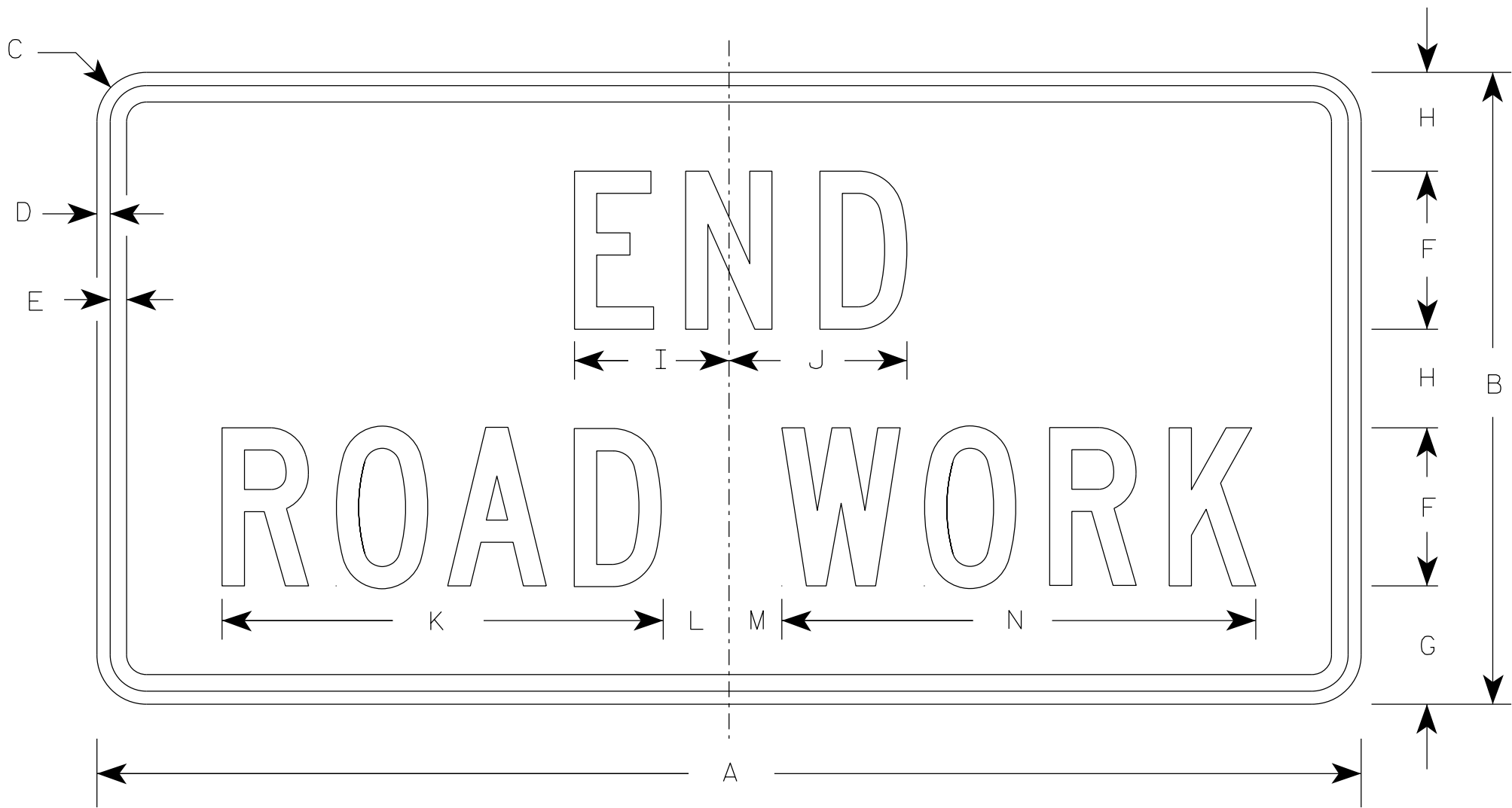
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



G20-2A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0

STANDARD SIGN

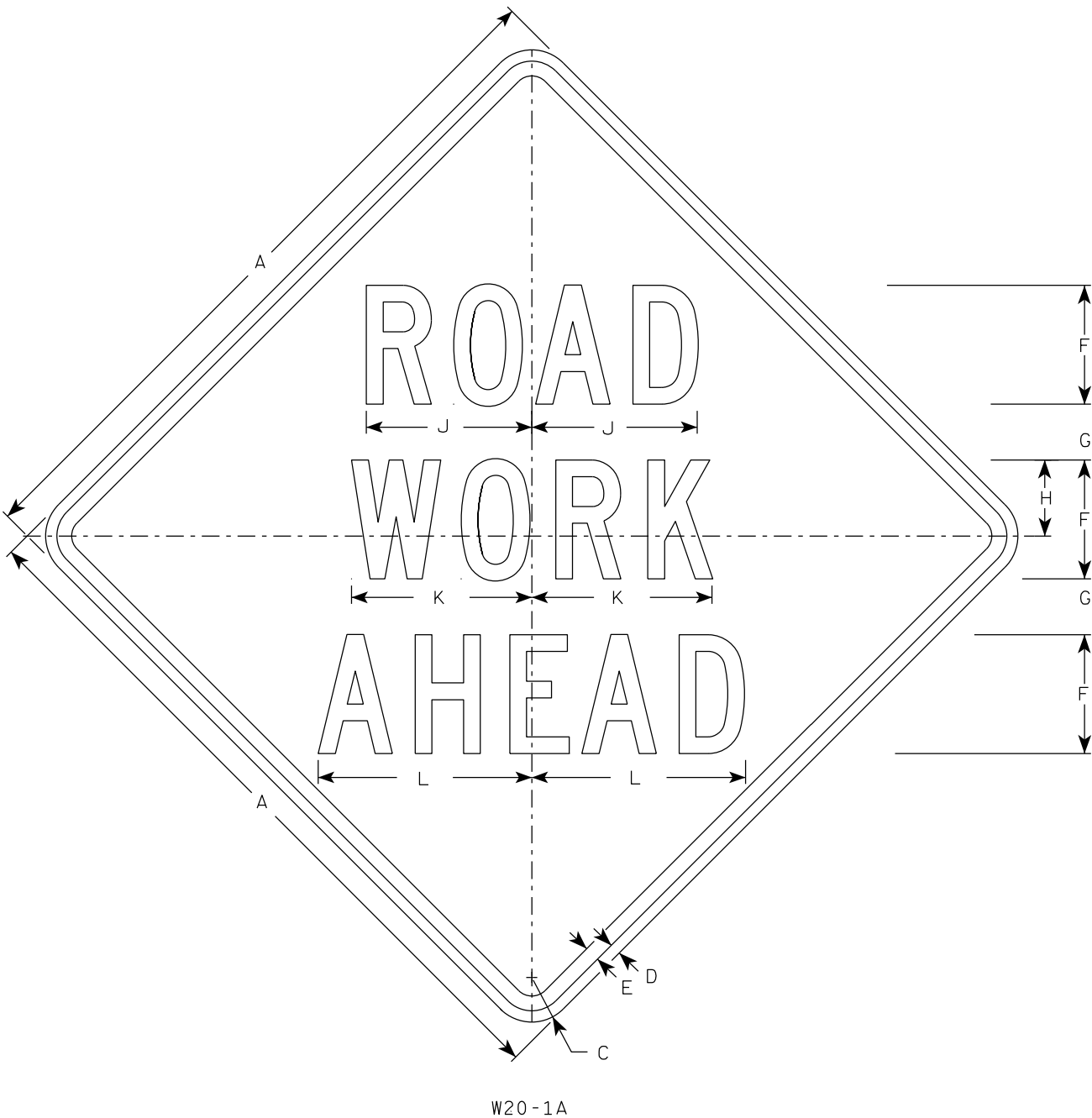
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

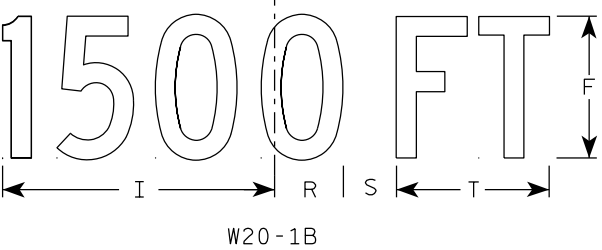
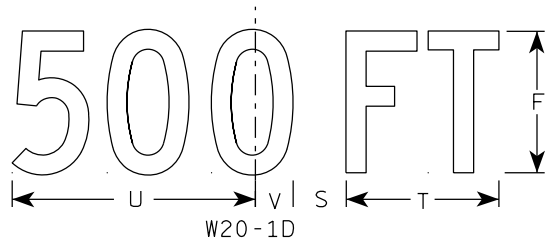
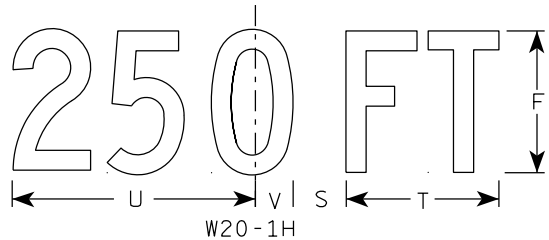
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-2A.10

7

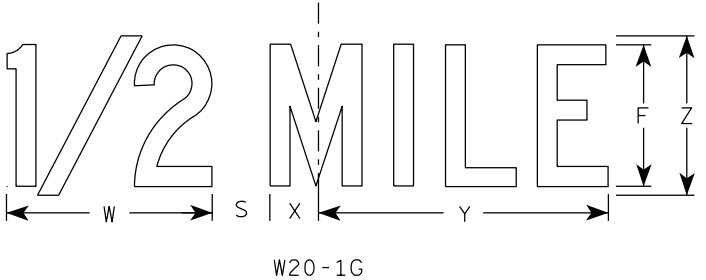


W20-1A

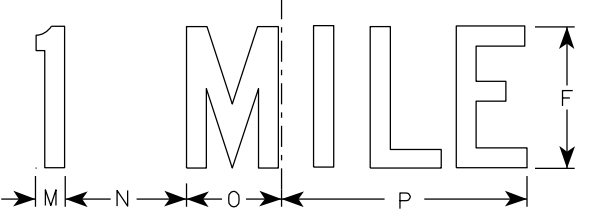


W20-1B

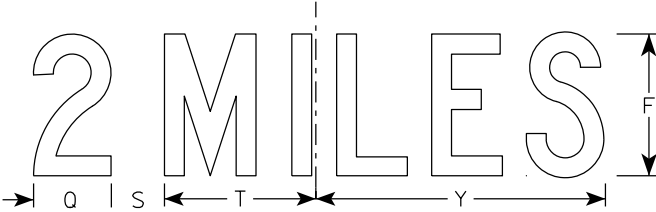
- NOTES
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W20-1G



W20-1F

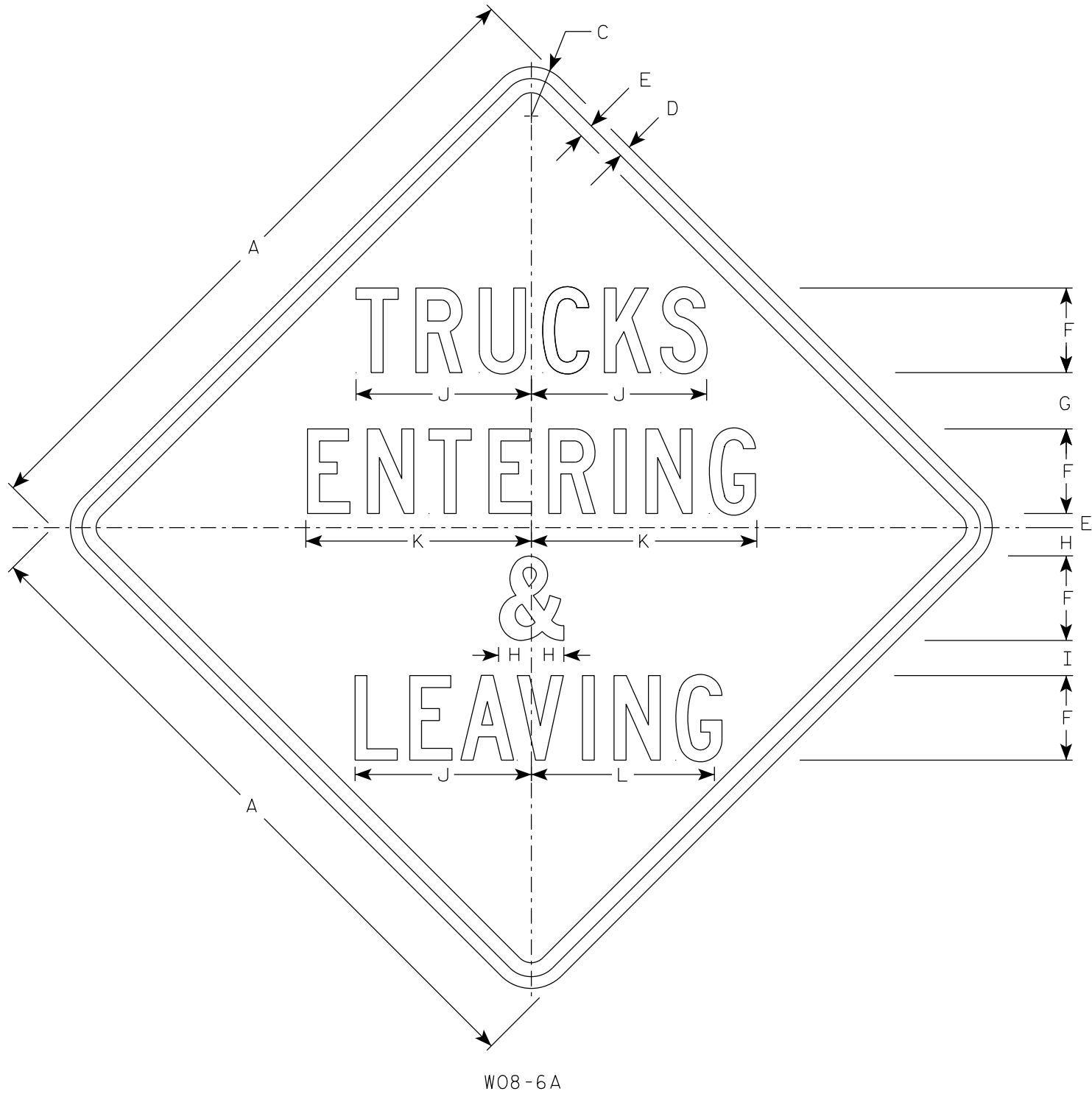


W20-1E

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SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

7



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7

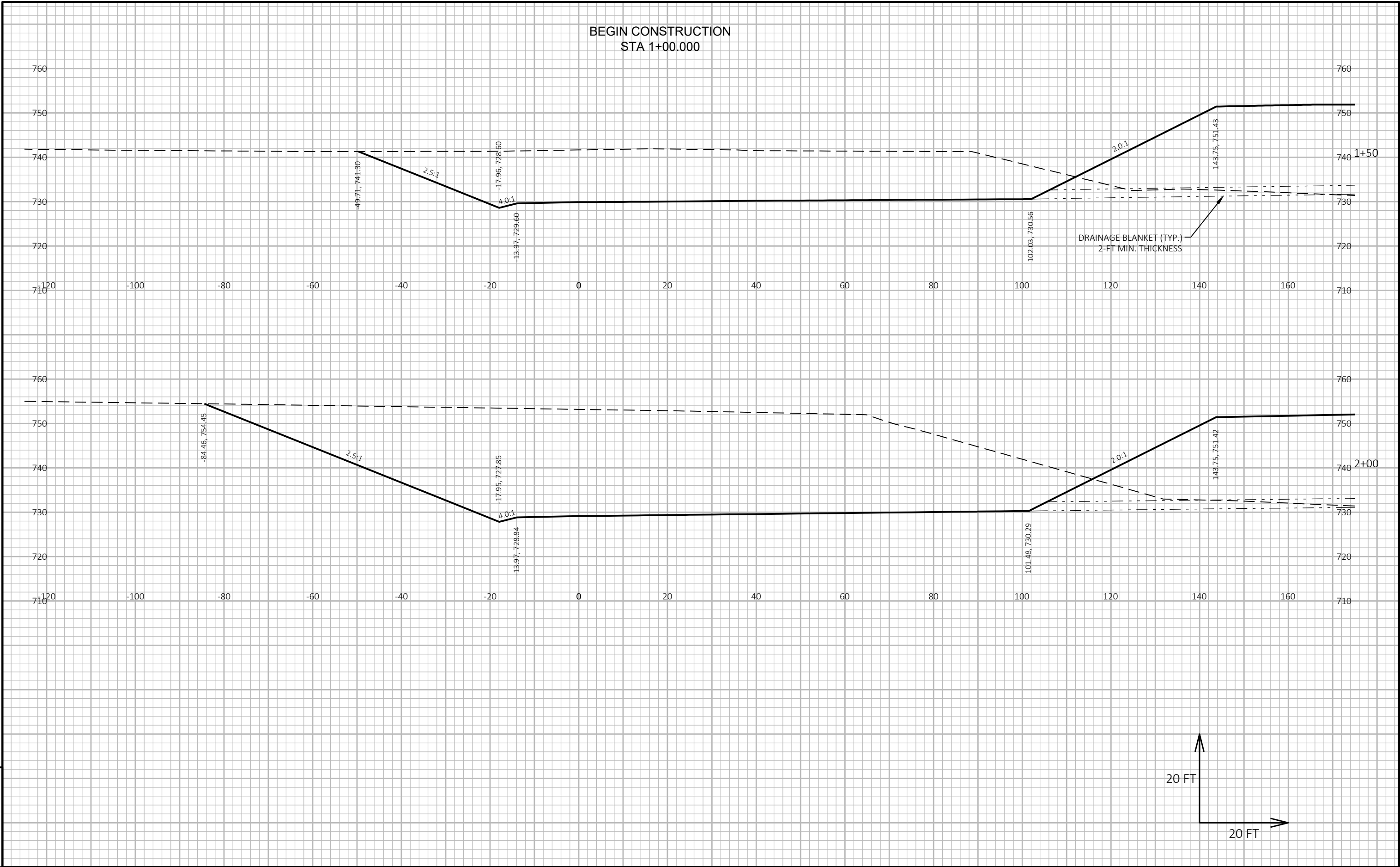
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	1/2	5/8	4 1/2	3	1 1/2	1 7/8	9 3/8	12	9 3/4															9.0
2S	48		3	3/4	1	6	4	2	2 1/2	12 1/2	16	13															16.0
2M	48		3	3/4	1	6	4	2	2 1/2	12 1/2	16	13															16.0
3	48		3	3/4	1	6	4	2	2 1/2	12 1/2	16	13															16.0
4	48		3	3/4	1	6	4	2	2 1/2	12 1/2	16	13															16.0
5	48		3	3/4	1	6	4	2	2 1/2	12 1/2	16	13															16.0

STANDARD SIGN
W08-6A

WISCONSIN DEPT OF TRANSPORTATION

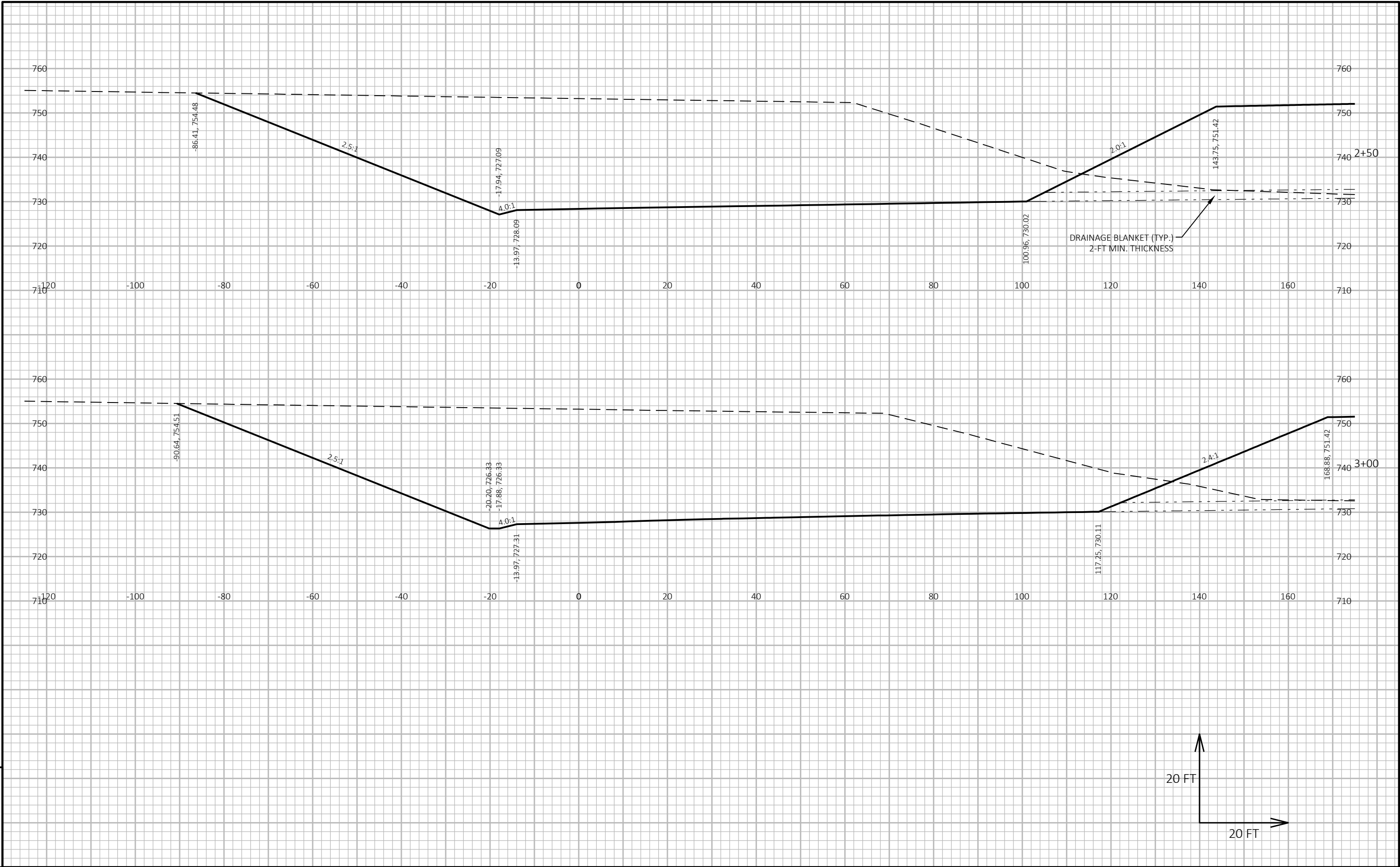
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

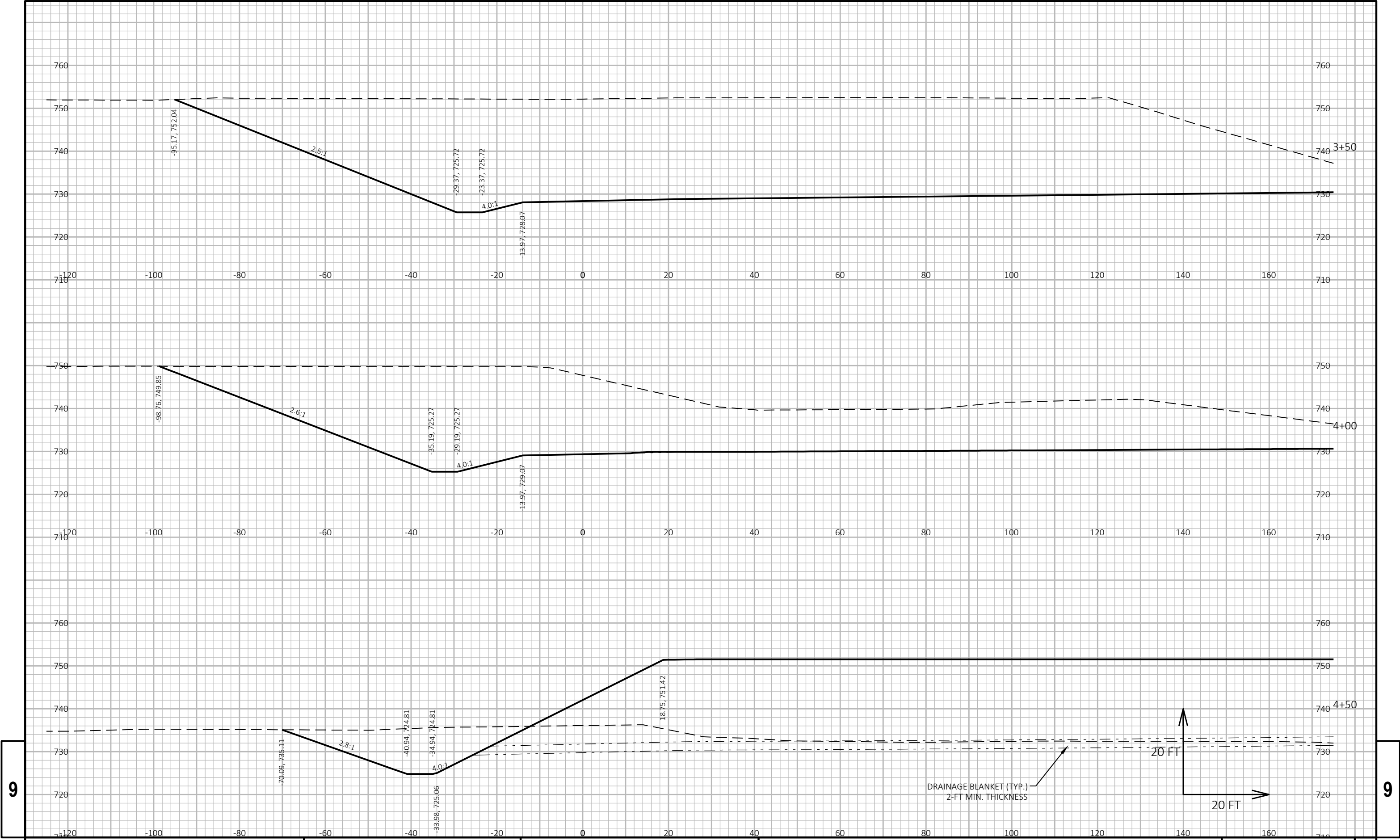
DATE 1/31/2024 PLATE NO. W08-6A.2



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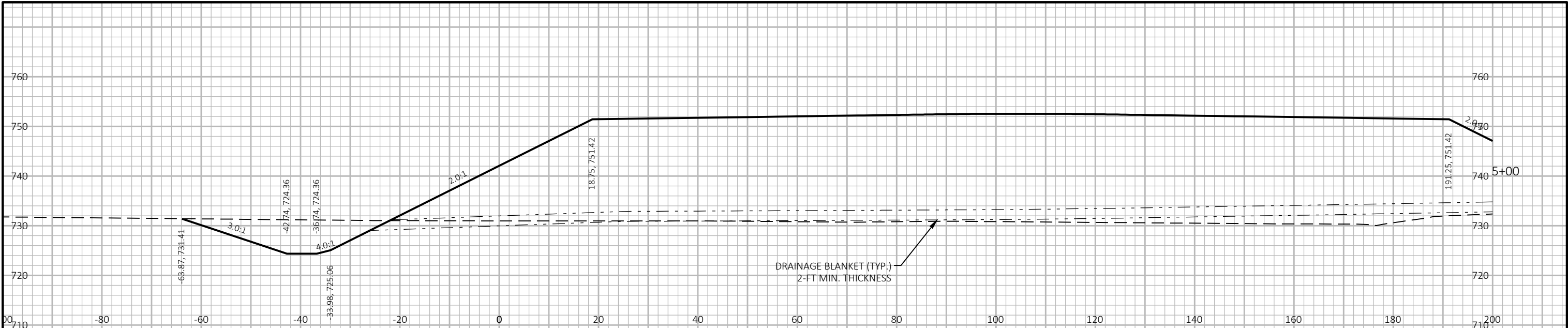
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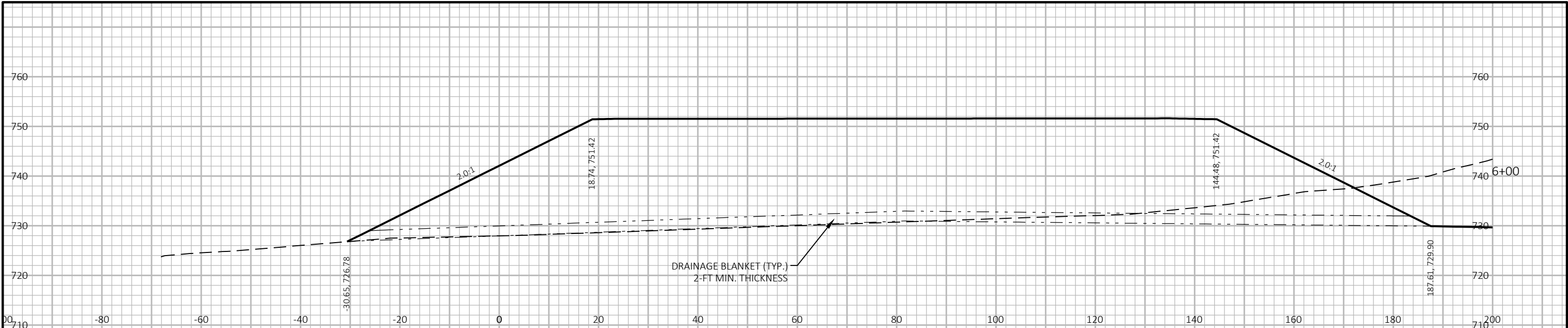
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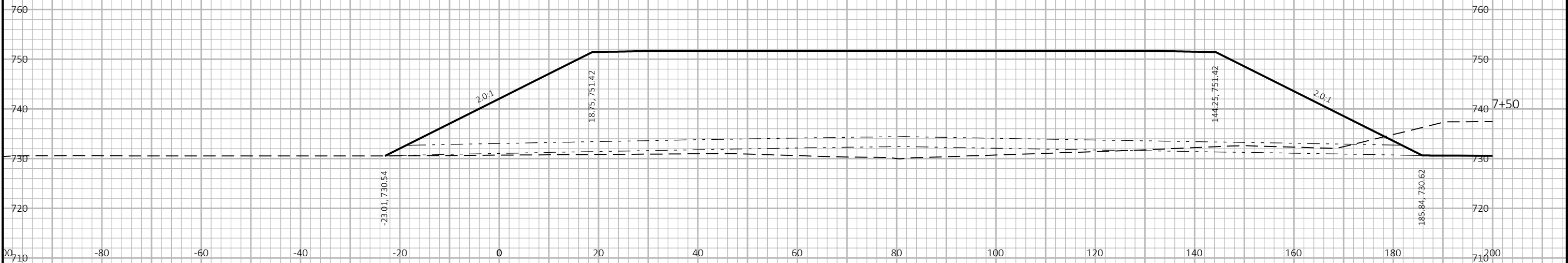
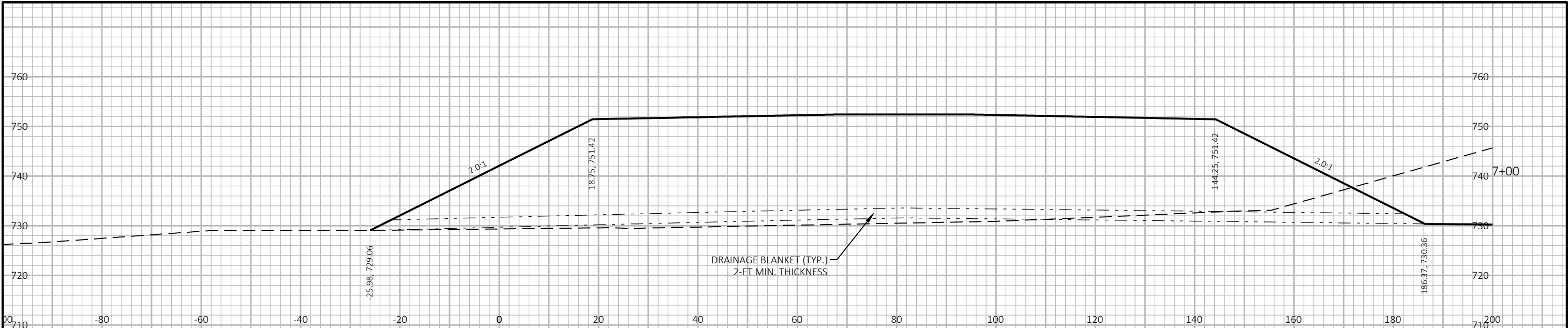
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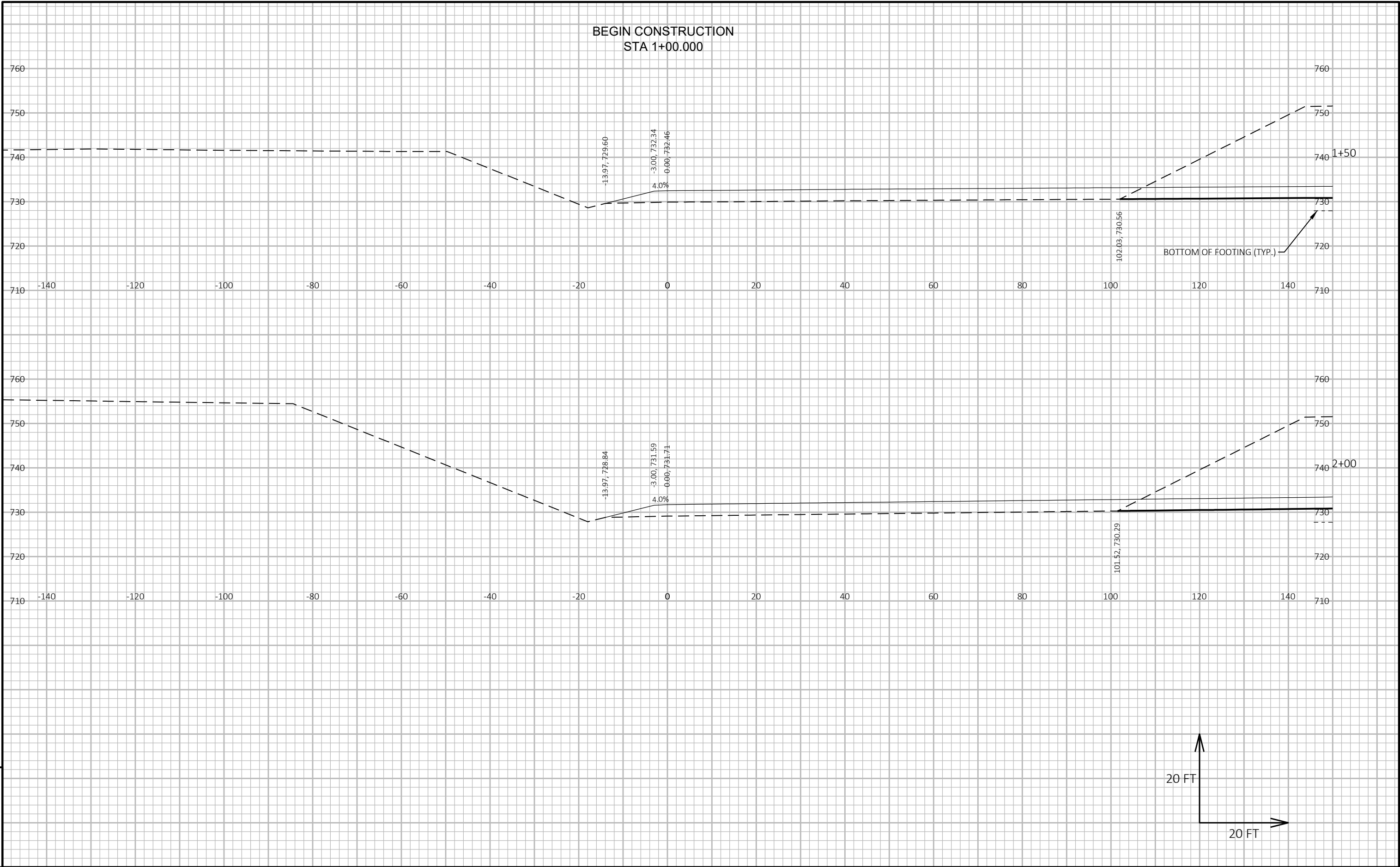
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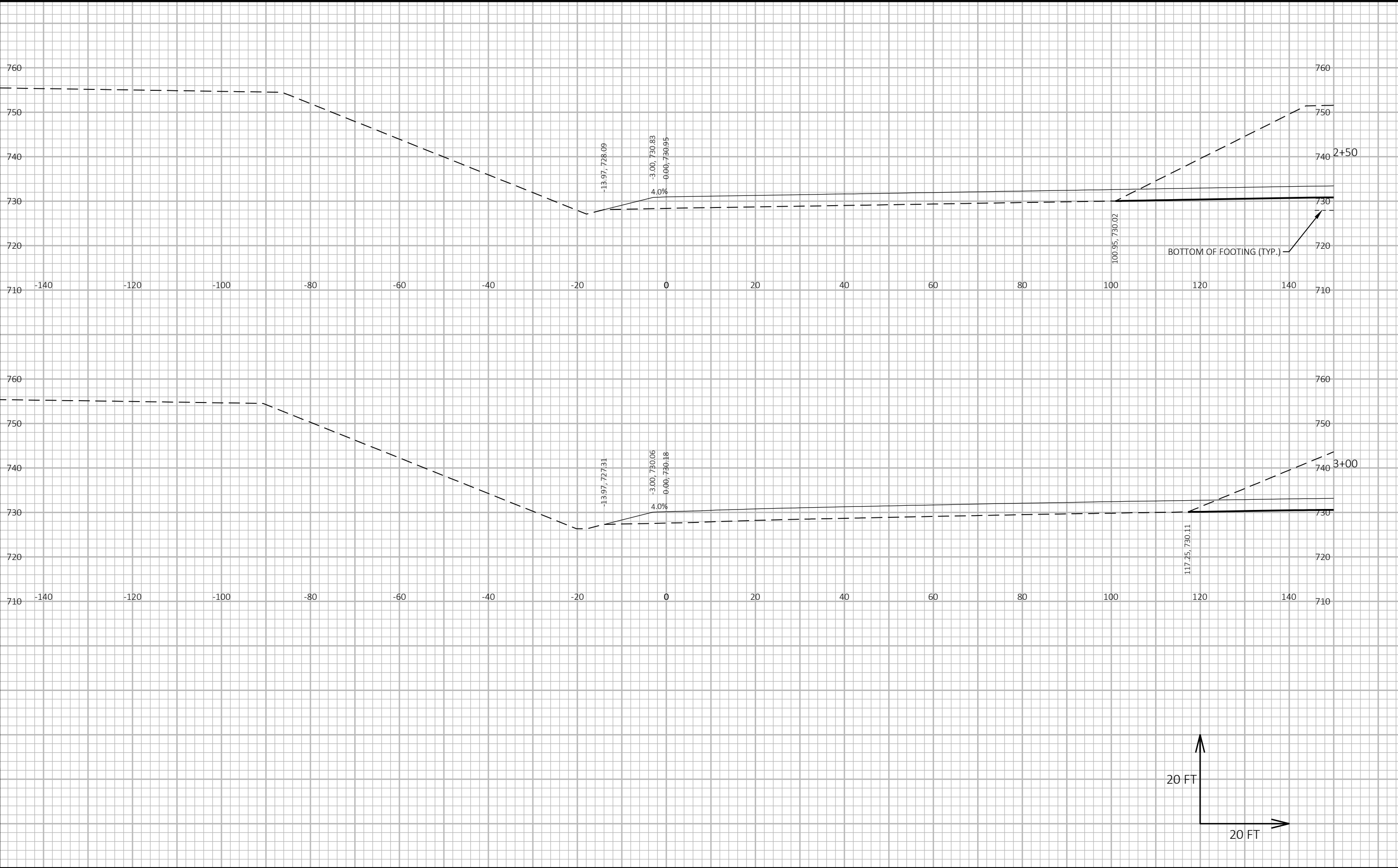
END CONSTRUCTION
STA 9+53.40





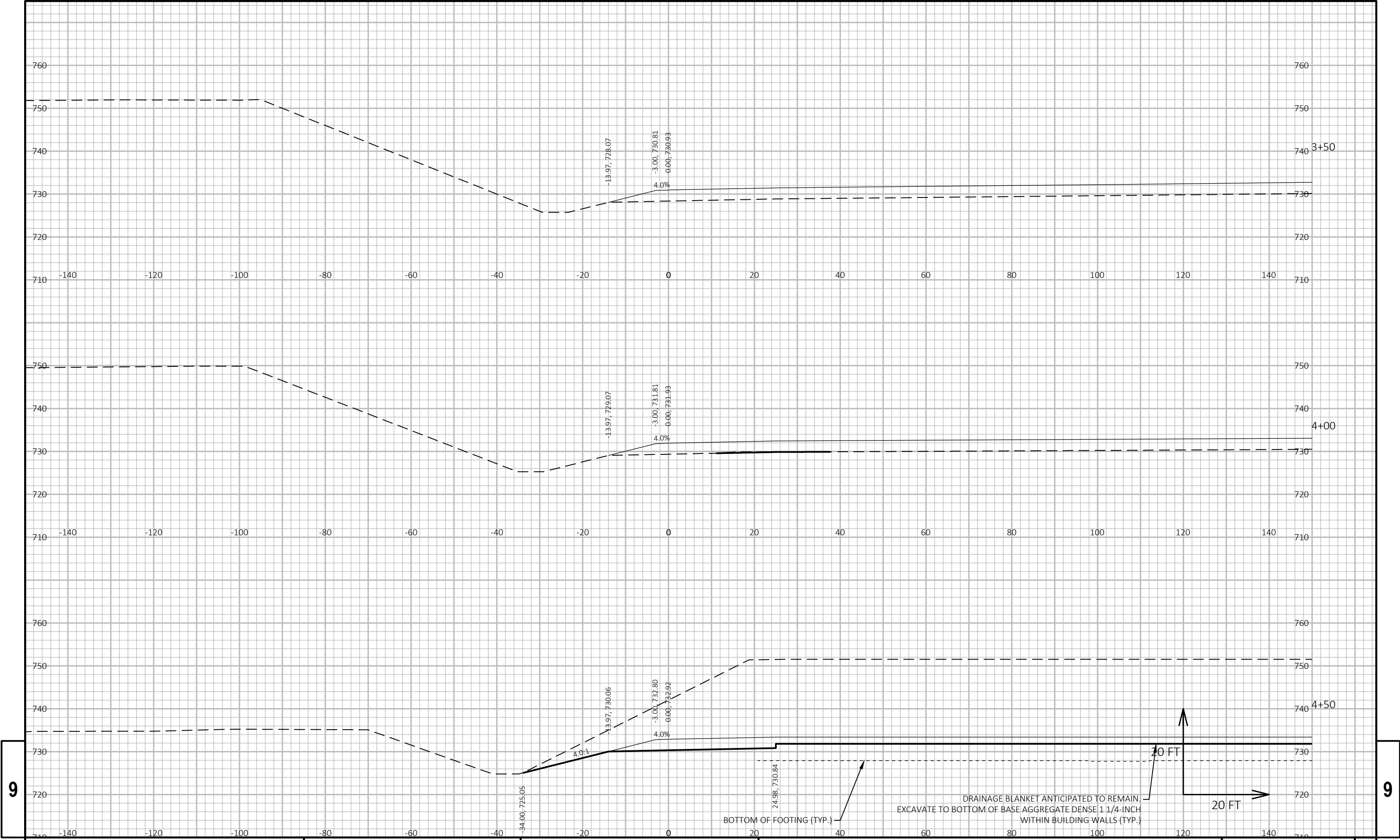
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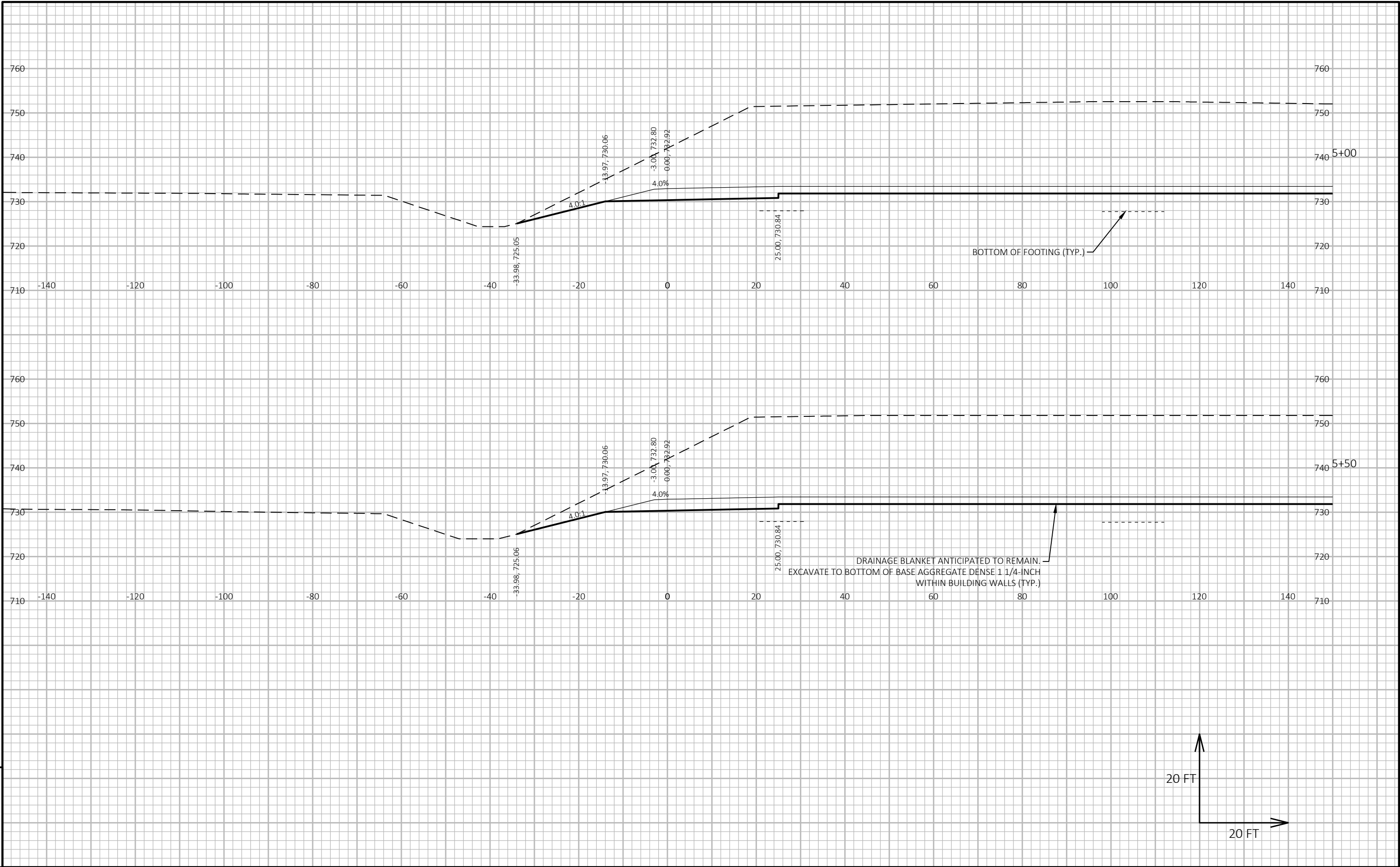
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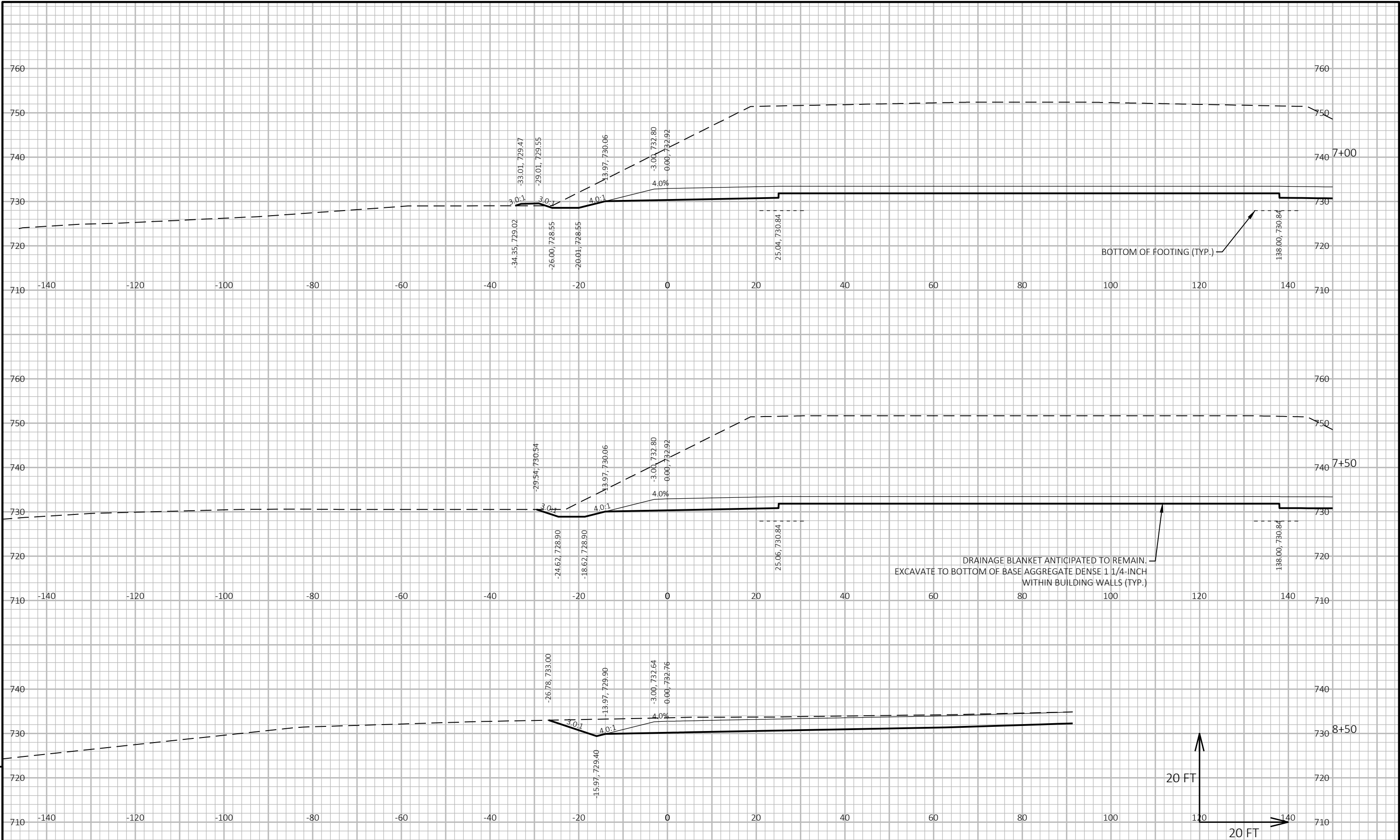
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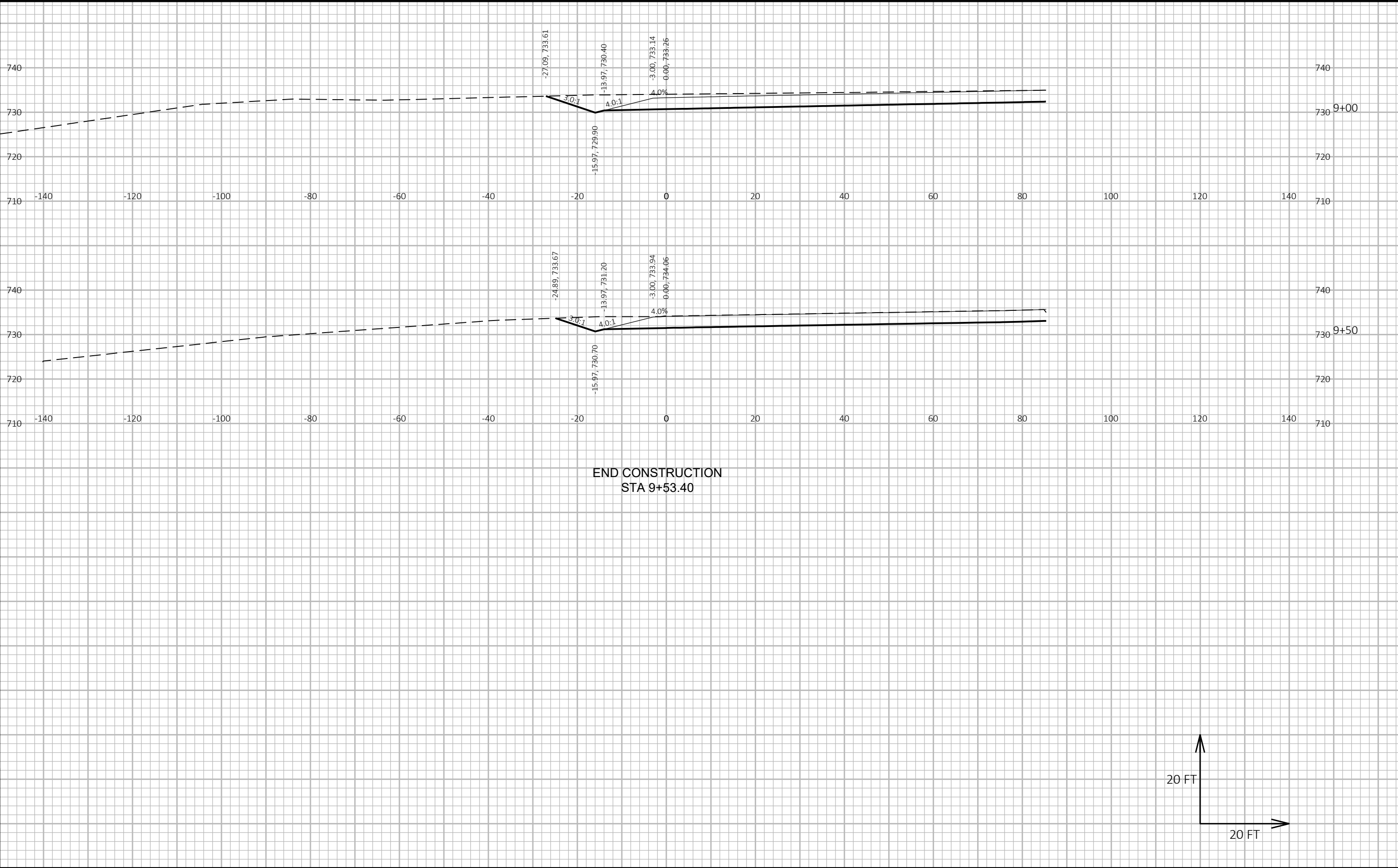


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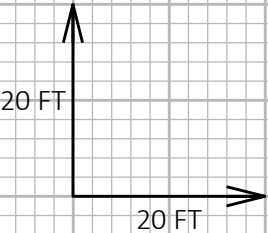
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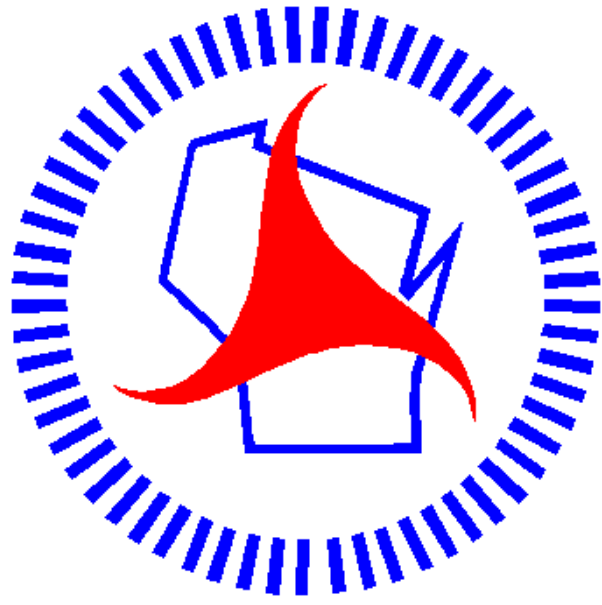
END CONSTRUCTION
STA 9+53.40



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Notes



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