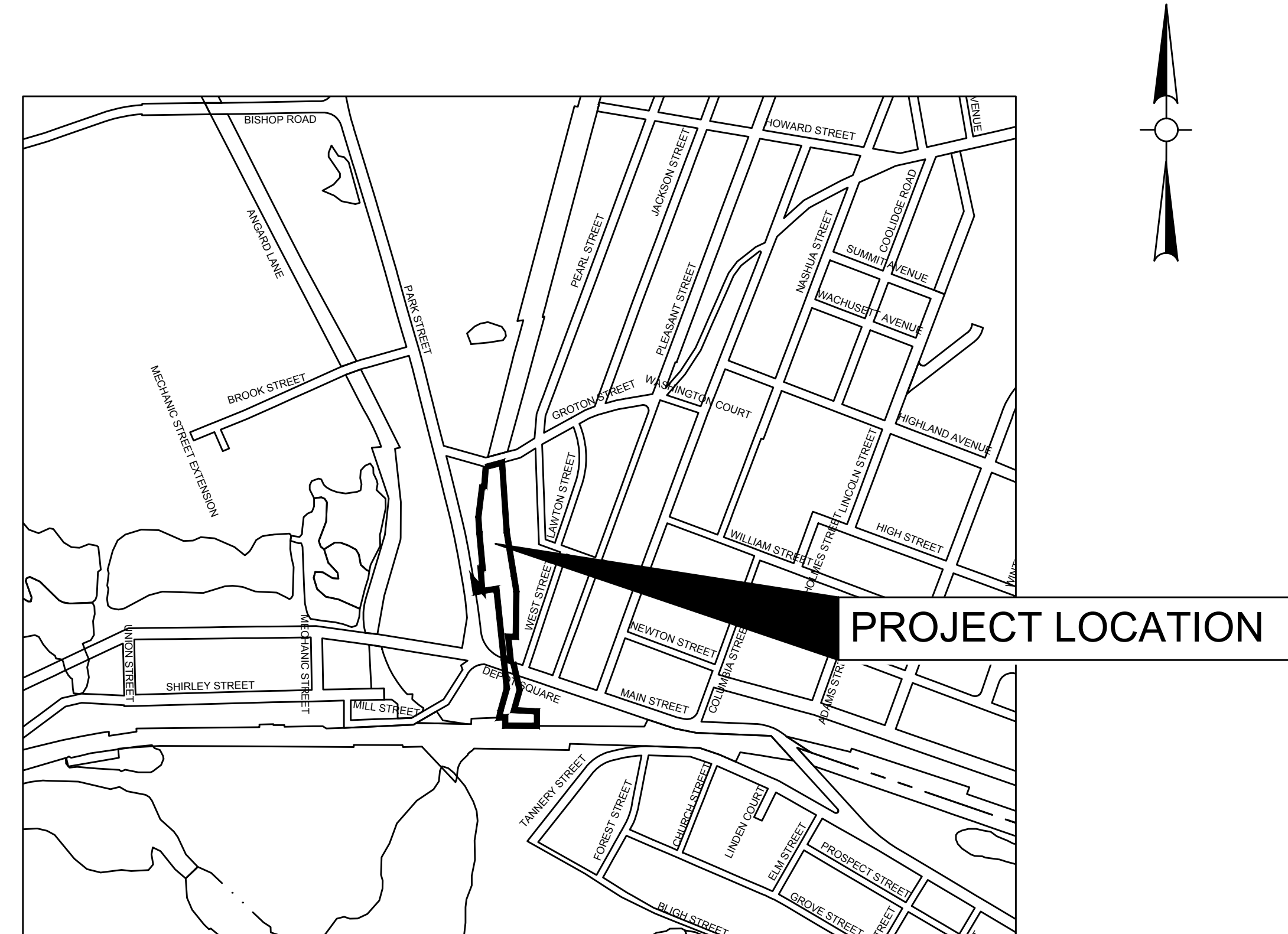


# MONTACHUSETT REGIONAL TRANSIT AUTHORITY



LOCATION PLAN  
SCALE: 1"=500'

## SHEET INDEX

-	TITLE SHEET AND INDEX	A1.01	GROUND TIER STRIPING PLANS
C0.01	GENERAL NOTES & LEGEND	A1.02	PLAN DETAILS
C1.00 - C1.03	EXISTING CONDITIONS PLAN	A1.03	EXTERIOR ELEVATIONS & DETAILS
C2.01	SITE PREP & DEMO PLAN	A1.03A	PRE-CAST CONCRETE SHAPES
C3.00 - C3.01	MATERIALS PLAN	A2.01	STAIR DETAILS
C4.01	LAYOUT AND CONTROL PLAN	A3.01	SIGNAGE SCHEDULE AND DETAILS
C5.01	UTILITY PLAN	A3.02	SIGNAGE DETAILS
C6.01	GRADING & DRAINAGE PLAN		
C8.01 - C8.04	DETAILS	P0.00	PLUMBING LEGEND
C10.01-C10.02	TRAFFIC PLANS	P1.01	PLUMBING PLAN
S0.01	GENERAL NOTES	H0.00	HVAC LEGEND
S0.02	TYPICAL DETAILS	H1.01	HVAC PART PLAN
S1.01	FOUNDATION AND DECK PLANS	H5.01	HVAC CONTROLS & DETAILS
S1.02	ENLARGED PLANS AT RAMP		
S2.01	PRECAST CONCRETE SECTIONS AND DETAILS	E0.01	ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES
S2.02	CAST IN PLACE SECTIONS AND DETAILS	E0.02	ELECTRICAL SCHEDULES AND DETAILS
		E1.00	ELECTRICAL SITE PLAN - GARAGE
		E1.01	ELECTRICAL POWER AND LIGHTING PLANS

## AYER COMMUTER RAIL PARKING FACILITY

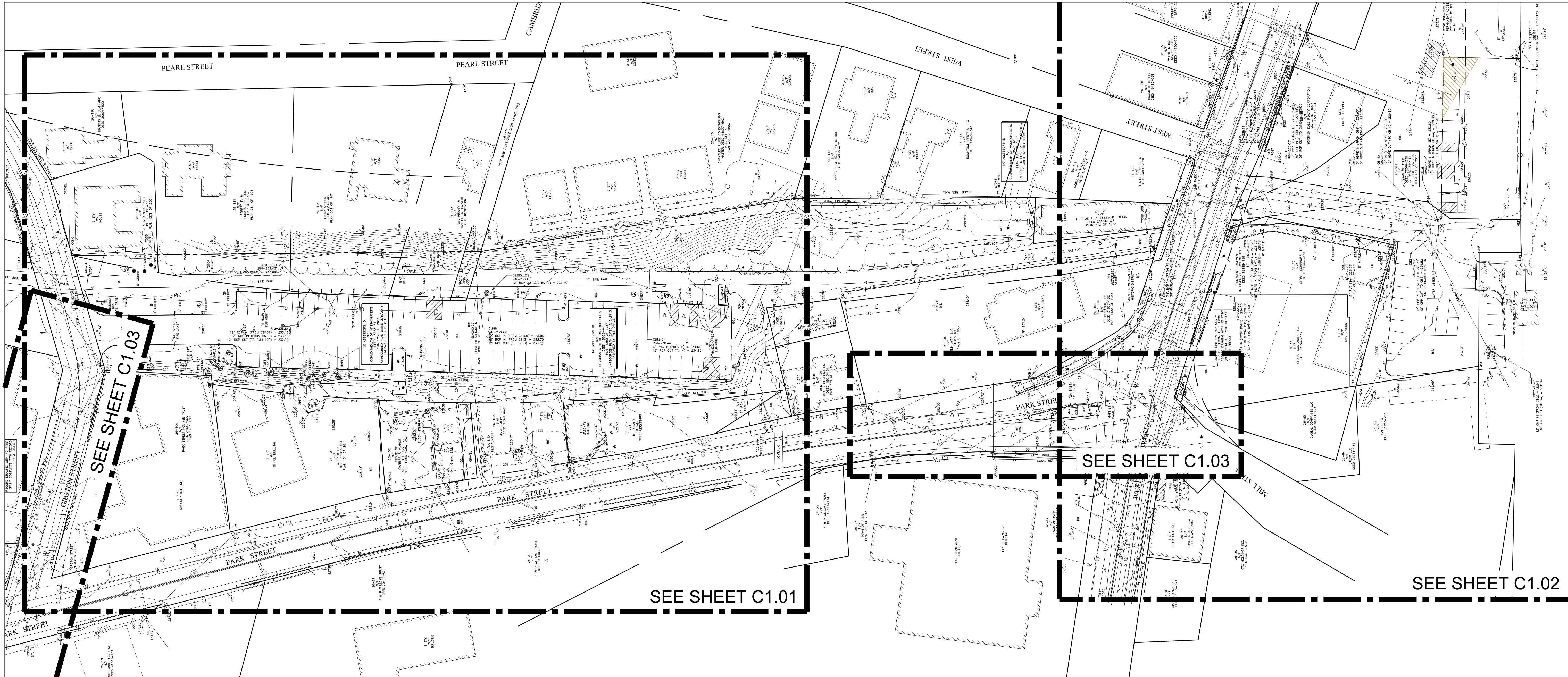
April 2019

ADDENDA CONFORMED  
DOCUMENTS

Weston & Sampson<sup>SM</sup>

One Hundred Foxborough Boulevard, Foxborough, Massachusetts 02035





Project:  
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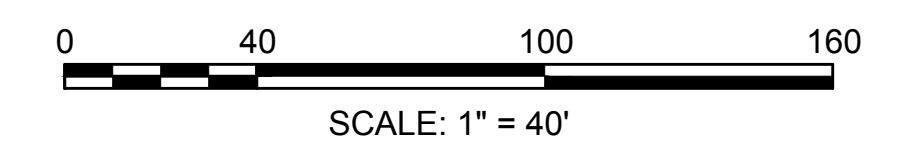
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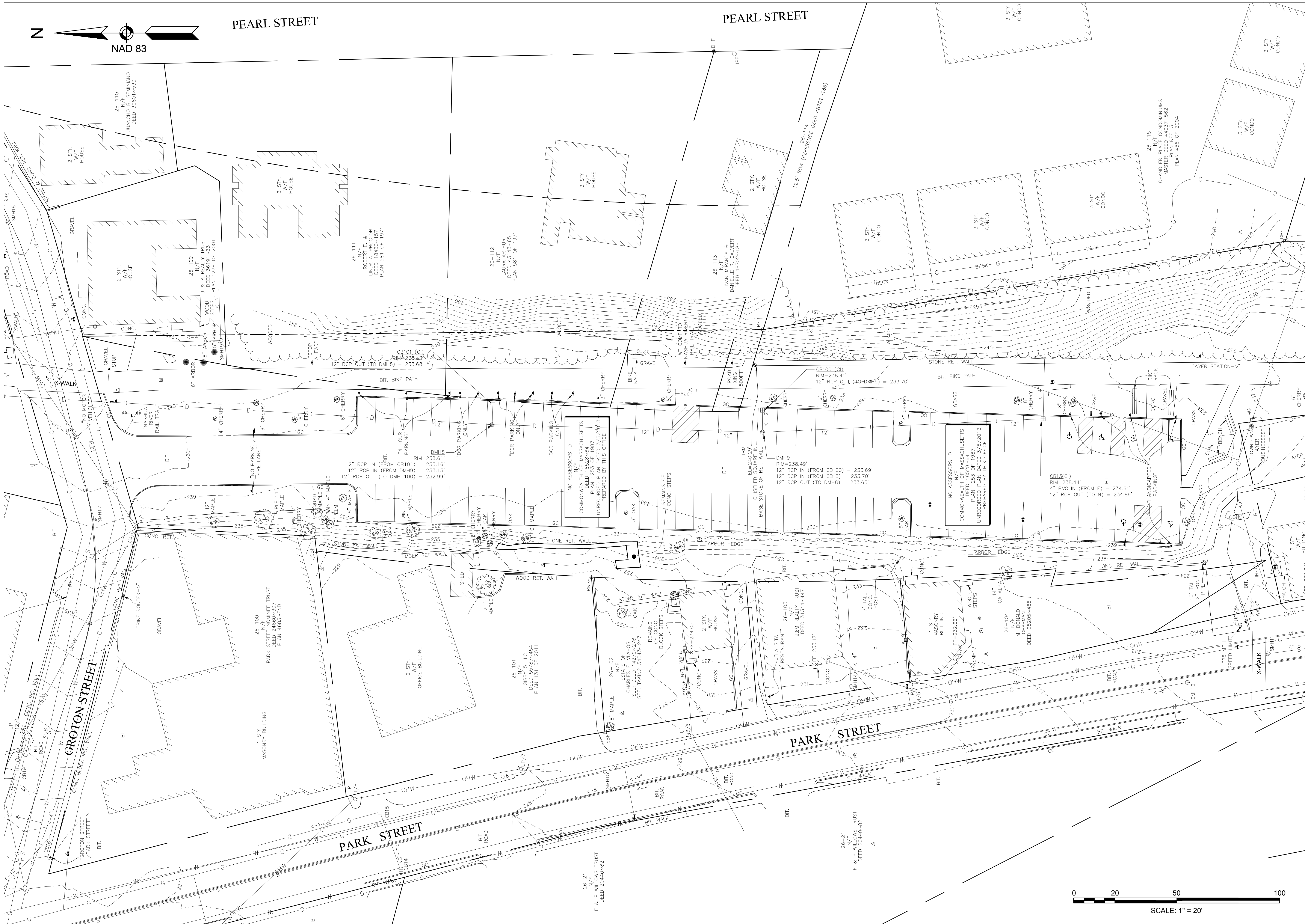
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 Reviewed By: AKP  
 Checked By: LFK  
 Approved By: LFK

Drawing Title:  
**EXISTING CONDITIONS  
 PLAN (1 OF 4)  
 OVERALL**

Sheet Number:  
**C1.00**





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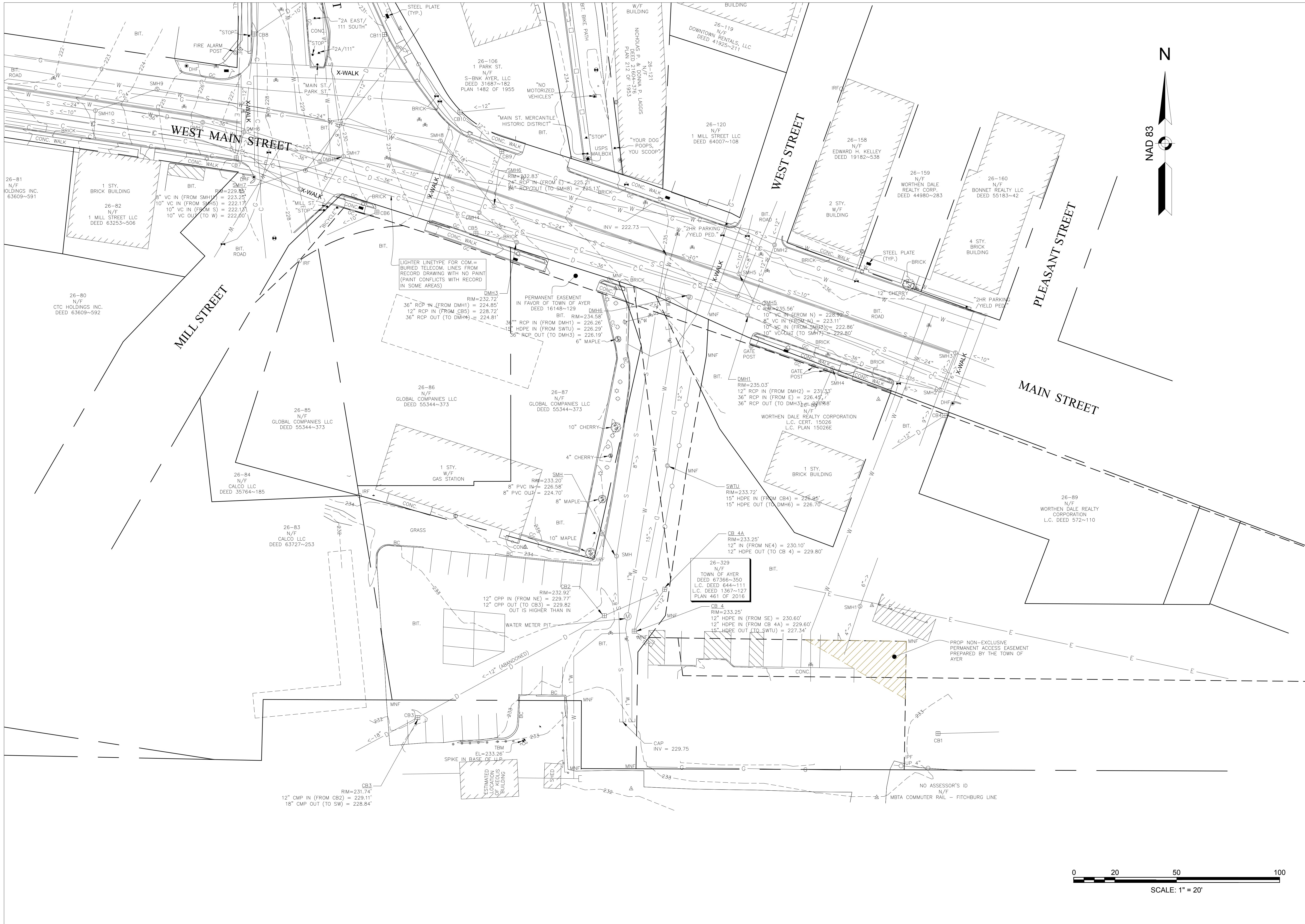
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**EXISTING CONDITIONS  
 PLAN (2 OF 4)  
 PARKING FACILITY**

Sheet Number:  
**C1.01**



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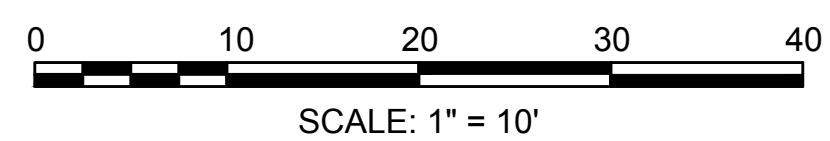
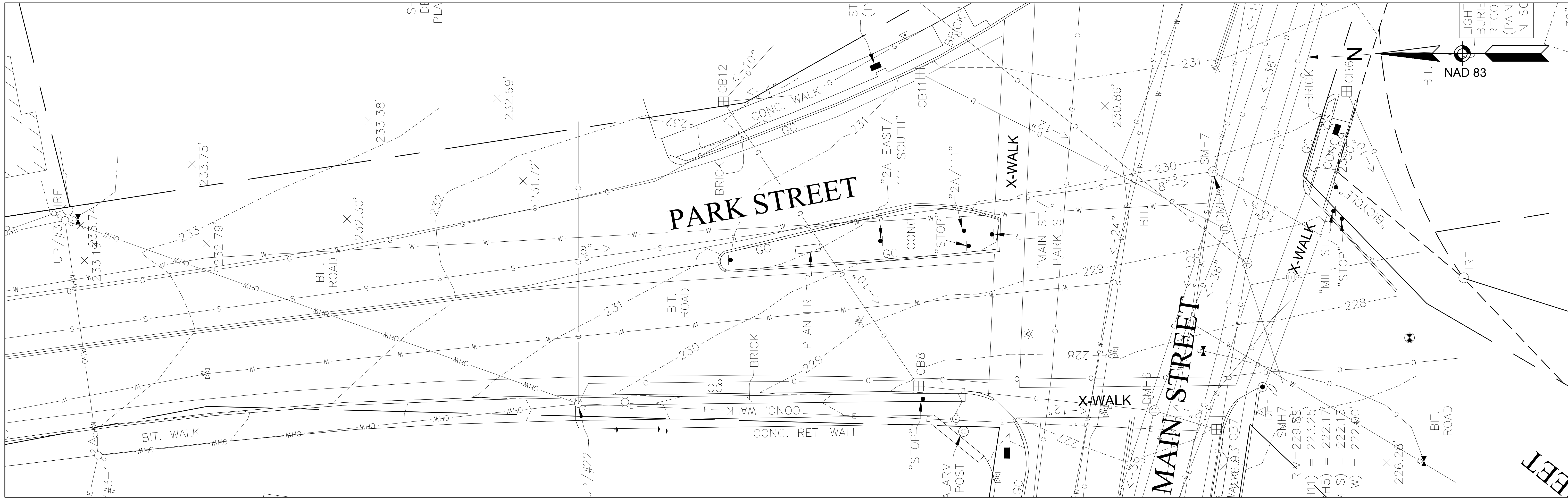
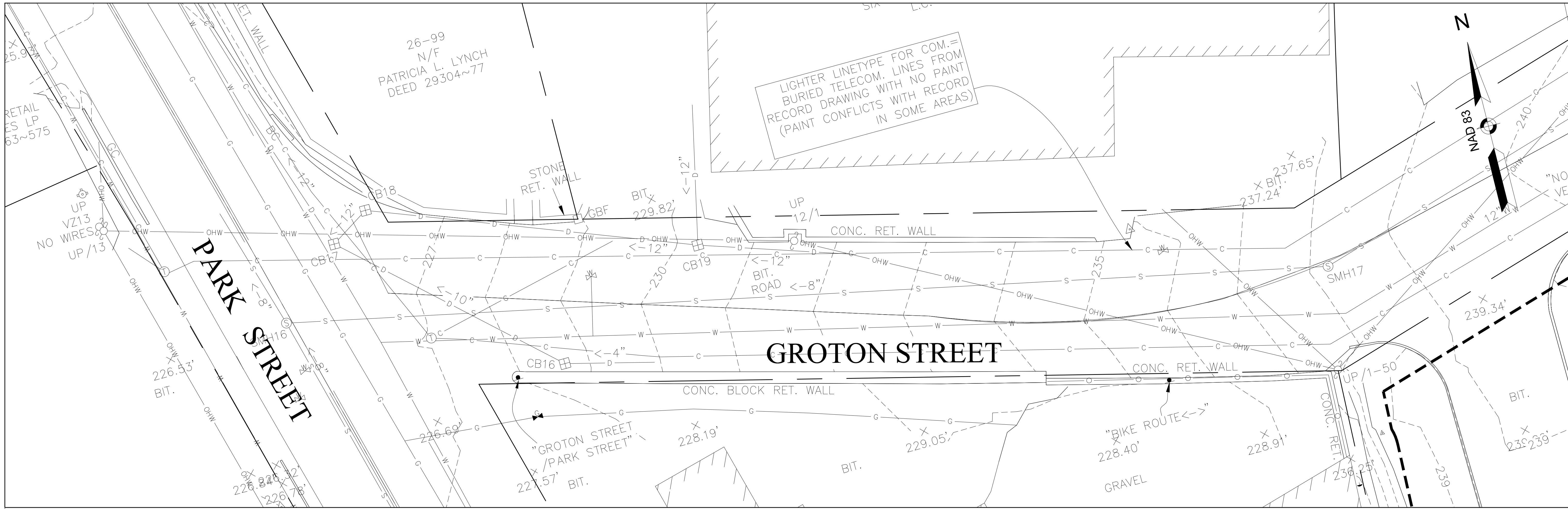
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**EXISTING CONDITIONS  
PLAN (3 OF 4)  
DEPOT SQUARE**

Sheet Number:

**C1.02**



Project:

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CONSTRUCTION DOCUMENTS

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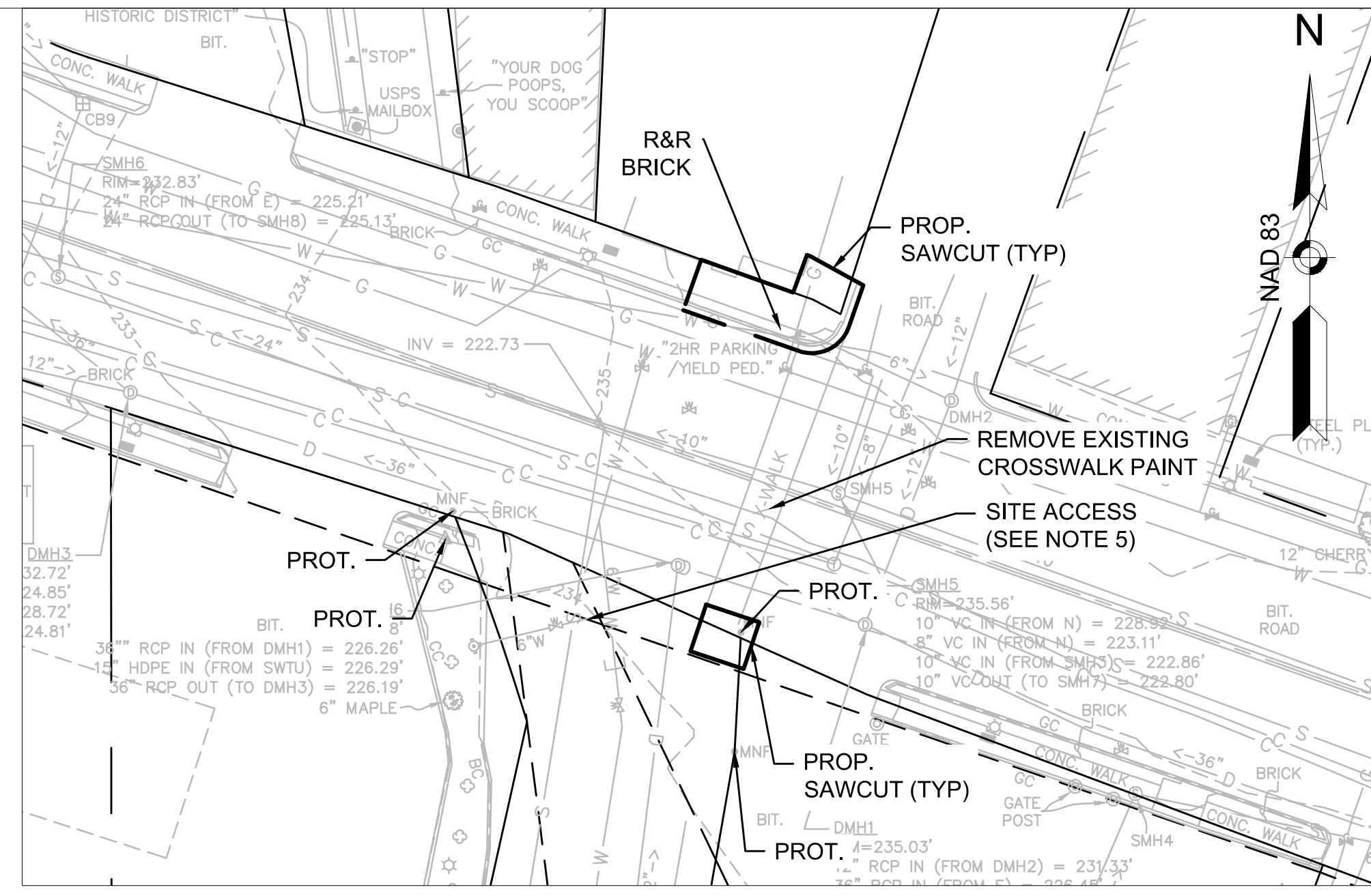
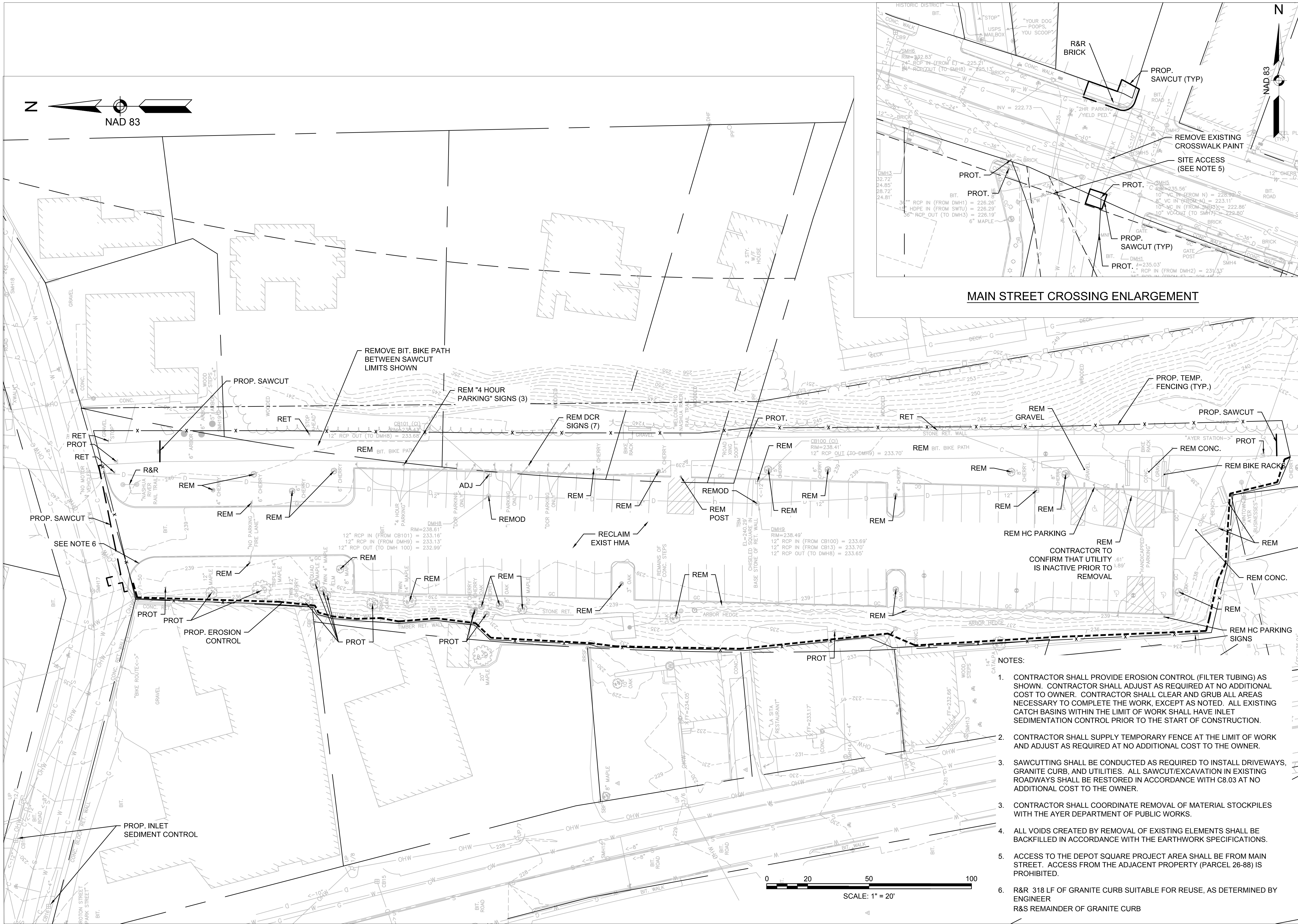
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**EXISTING CONDITIONS  
PLAN (4 OF 4)  
PARK & GROTON  
STREET  
INTERSECTIONS**

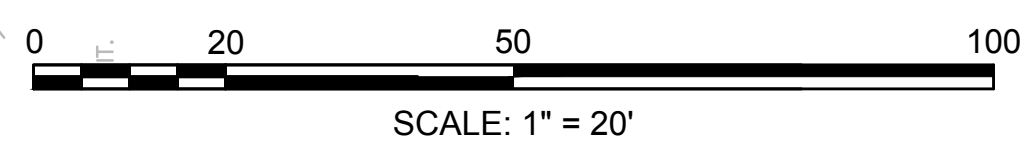
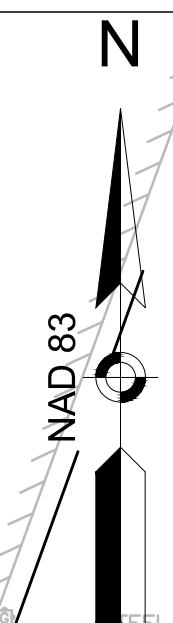
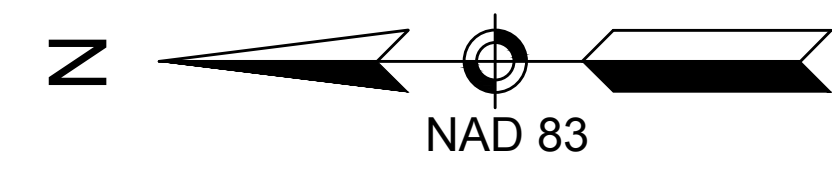
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**C1.03**



**MAIN STREET CROSSING ENLARGEMENT**

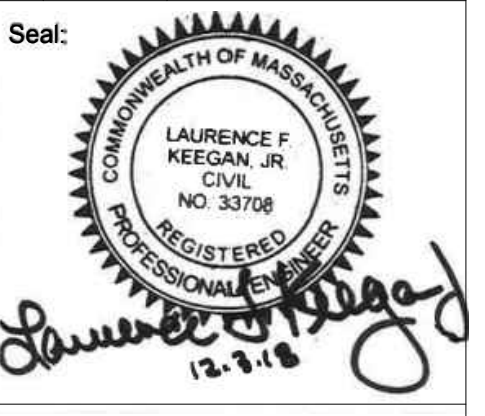
- NOTES:
- CONTRACTOR SHALL PROVIDE EROSION CONTROL (FILTER TUBING) AS SHOWN. CONTRACTOR SHALL ADJUST AS REQUIRED AT NO ADDITIONAL COST TO OWNER. CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS NECESSARY TO COMPLETE THE WORK, EXCEPT AS NOTED. ALL EXISTING CATCH BASINS WITHIN THE LIMIT OF WORK SHALL HAVE INLET SEDIMENTATION CONTROL PRIOR TO THE START OF CONSTRUCTION.
  - CONTRACTOR SHALL SUPPLY TEMPORARY FENCE AT THE LIMIT OF WORK AND ADJUST AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
  - SAWCUTTING SHALL BE CONDUCTED AS REQUIRED TO INSTALL DRIVEWAYS, GRANITE CURB, AND UTILITIES. ALL SAWCUT/EXCAVATION IN EXISTING ROADWAYS SHALL BE RESTORED IN ACCORDANCE WITH C8.03 AT NO ADDITIONAL COST TO THE OWNER.
  - CONTRACTOR SHALL COORDINATE REMOVAL OF MATERIAL STOCKPILES WITH THE AYER DEPARTMENT OF PUBLIC WORKS.
  - ALL VOIDS CREATED BY REMOVAL OF EXISTING ELEMENTS SHALL BE BACKFILLED IN ACCORDANCE WITH THE EARTHWORK SPECIFICATIONS.
  - ACCESS TO THE DEPOT SQUARE PROJECT AREA SHALL BE FROM MAIN STREET. ACCESS FROM THE ADJACENT PROPERTY (PARCEL 26-88) IS PROHIBITED.
  - R&R 318 LF OF GRANITE CURB SUITABLE FOR REUSE, AS DETERMINED BY ENGINEER  
R&S REMAINDER OF GRANITE CURB



North:

Revisions:

Rev	Date	Description

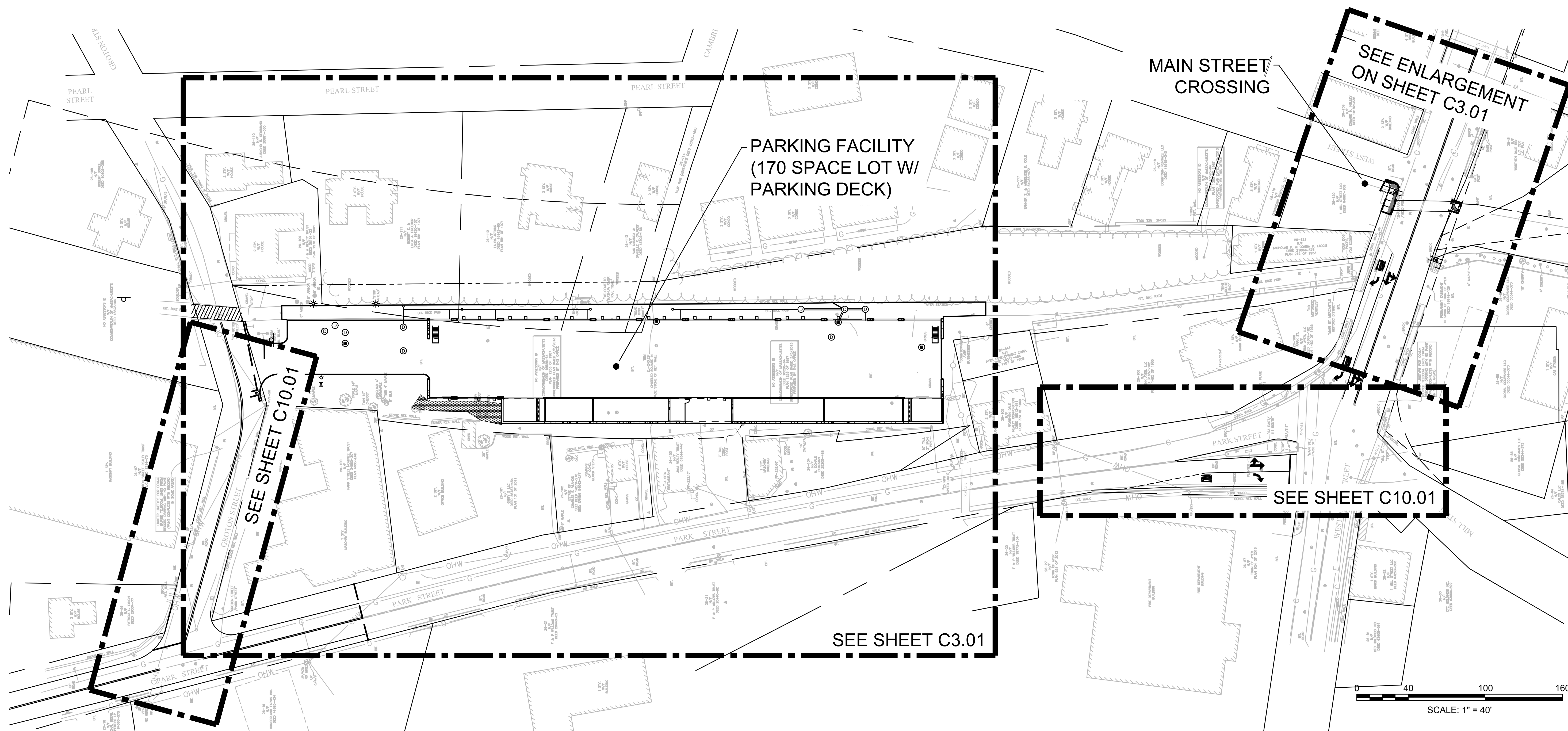


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 Checked By: LFK  
 Approved By: LFK

Drawing Title:  
**SITE PREP & DEMO PLAN**

Sheet Number:  
**C2.01**



Project:  
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Revisions:

Rev	Date	Description

Seal:  
  
 LAURENCE F. KEEGAN, JR.  
 CIVIL  
 NO. 33708  
 REGISTERED  
 PROFESSIONAL ENGINEER  
 12.7.18

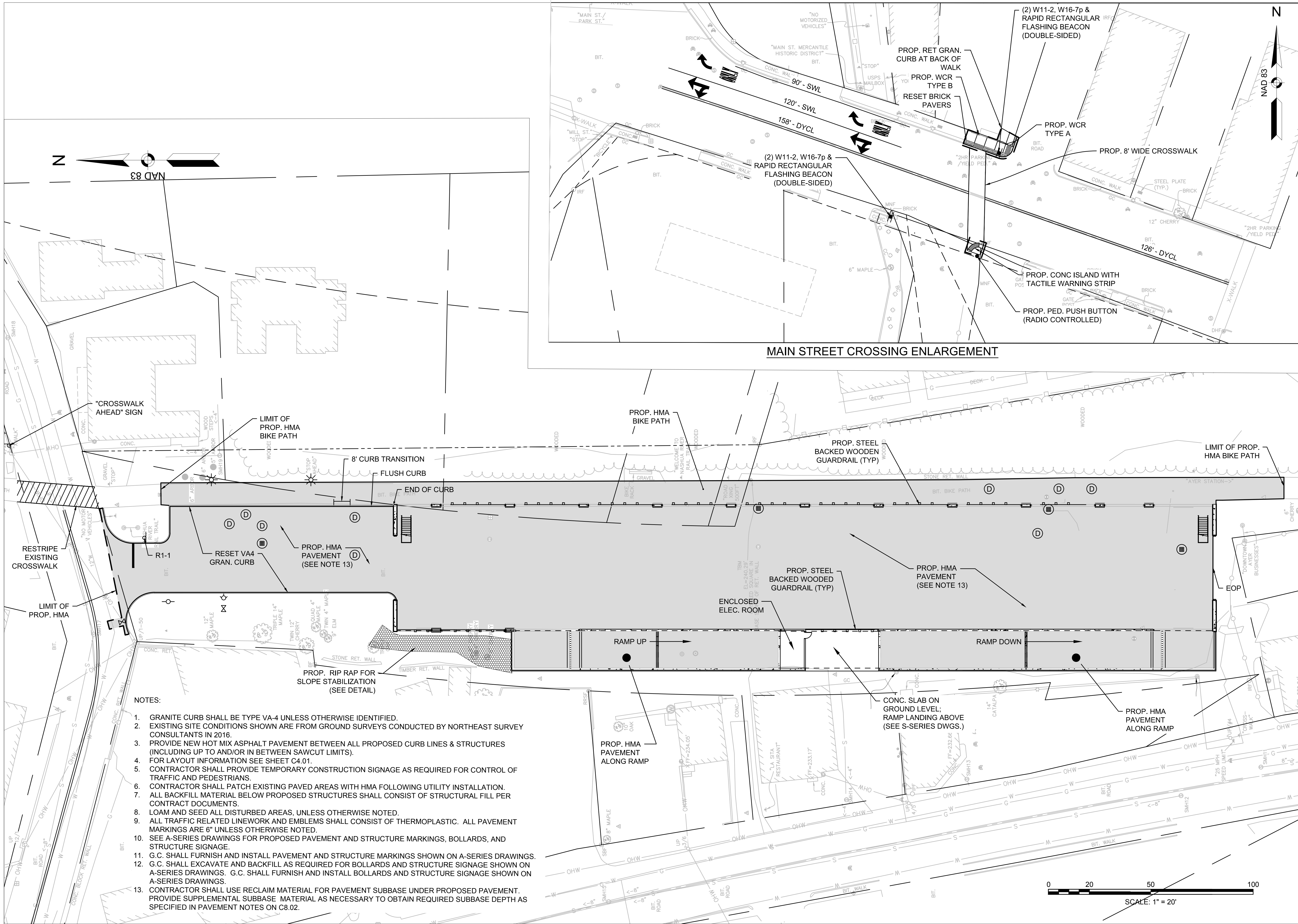
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Drawing Title:  
**MATERIALS PLAN (1 OF 2) OVERALL**

Sheet Number:  
**C3.00**



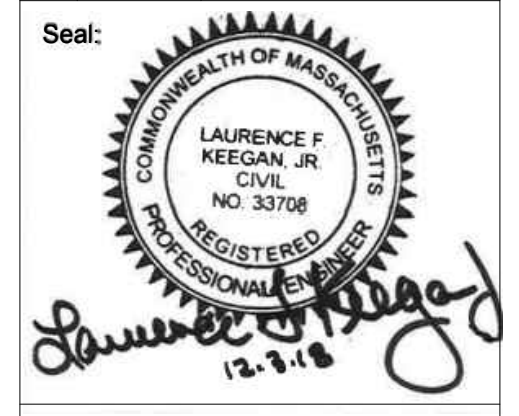


**NOTES:**

1. GRANITE CURB SHALL BE TYPE VA-4 UNLESS OTHERWISE IDENTIFIED.
2. EXISTING SITE CONDITIONS SHOWN ARE FROM GROUND SURVEYS CONDUCTED BY NORTHEAST SURVEY CONSULTANTS IN 2016.
3. PROVIDE NEW HOT MIX ASPHALT PAVEMENT BETWEEN ALL PROPOSED CURB LINES & STRUCTURES (INCLUDING UP TO AND/OR IN BETWEEN SAWCUT LIMITS).
4. FOR LAYOUT INFORMATION SEE SHEET C4.01.
5. CONTRACTOR SHALL PROVIDE TEMPORARY CONSTRUCTION SIGNAGE AS REQUIRED FOR CONTROL OF TRAFFIC AND PEDESTRIANS.
6. CONTRACTOR SHALL PATCH EXISTING PAVED AREAS WITH HMA FOLLOWING UTILITY INSTALLATION.
7. ALL BACKFILL MATERIAL BELOW PROPOSED STRUCTURES SHALL CONSIST OF STRUCTURAL FILL PER CONTRACT DOCUMENTS.
8. LOAM AND SEED ALL DISTURBED AREAS, UNLESS OTHERWISE NOTED.
9. ALL TRAFFIC RELATED LINework AND EMBLEMS SHALL CONSIST OF THERMOPLASTIC. ALL PAVEMENT MARKINGS ARE 6" UNLESS OTHERWISE NOTED.
10. SEE A-SERIES DRAWINGS FOR PROPOSED PAVEMENT AND STRUCTURE MARKINGS, BOLLARDS, AND STRUCTURE SIGNAGE.
11. G.C. SHALL FURNISH AND INSTALL PAVEMENT AND STRUCTURE MARKINGS SHOWN ON A-SERIES DRAWINGS.
12. G.C. SHALL EXCAVATE AND BACKFILL AS REQUIRED FOR BOLLARDS AND STRUCTURE SIGNAGE SHOWN ON A-SERIES DRAWINGS. G.C. SHALL FURNISH AND INSTALL BOLLARDS AND STRUCTURE SIGNAGE SHOWN ON A-SERIES DRAWINGS.
13. CONTRACTOR SHALL USE RECLAIM MATERIAL FOR PAVEMENT SUBBASE UNDER PROPOSED PAVEMENT. PROVIDE SUPPLEMENTAL SUBBASE MATERIAL AS NECESSARY TO OBTAIN REQUIRED SUBBASE DEPTH AS SPECIFIED IN PAVEMENT NOTES ON C8.02.

Revisions:

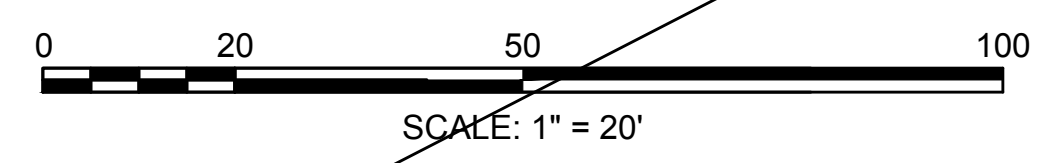
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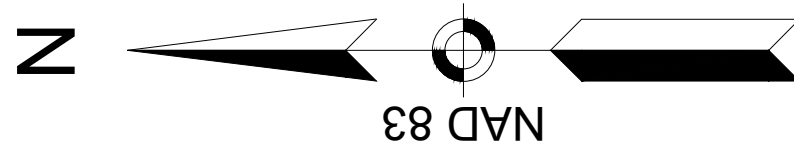


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**MATERIALS PLAN (2 OF 2)**





PEARL STREET

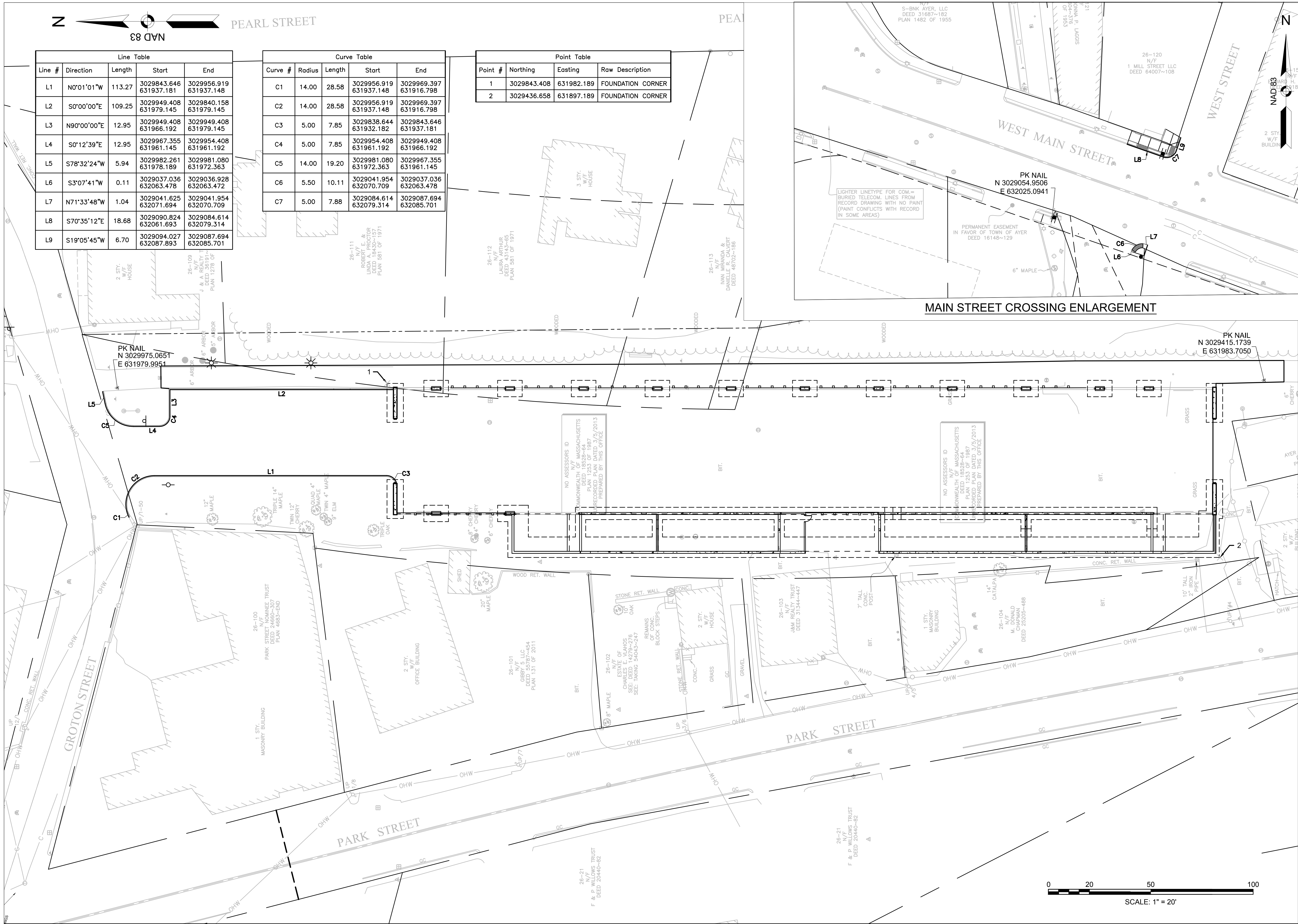
PEA



Line #	Direction	Length	Start	End
L1	N0°01'01"W	113.27	3029843.646 631937.181	3029956.919 631937.148
L2	S0°00'00"E	109.25	3029949.408 631979.145	3029840.158 631979.145
L3	N90°00'00"E	12.95	3029949.408 631966.192	3029949.408 631979.145
L4	S0°12'39"W	12.95	3029967.355 631961.145	3029954.408 631961.192
L5	S78°32'24"W	5.94	3029982.261 631978.189	3029981.080 631972.363
L6	S3°07'41"W	0.11	3029037.036 632063.478	3029036.928 632063.472
L7	N71°33'48"W	1.04	3029041.625 632071.694	3029041.954 632070.709
L8	S70°35'12"E	18.68	3029090.824 632061.693	3029084.614 632079.314
L9	S19°05'45"W	6.70	3029094.027 632087.893	3029087.694 632085.701

Curve #	Radius	Length	Start	End
C1	14.00	28.58	3029956.919 631937.148	3029969.397 631916.798
C2	14.00	28.58	3029956.919 631937.148	3029969.397 631916.798
C3	5.00	7.85	3029843.646 631932.182	3029843.646 631937.181
C4	5.00	7.85	3029954.408 631961.192	3029949.408 631966.192
C5	14.00	19.20	3029981.080 631972.363	3029967.355 631961.145
C6	5.50	10.11	3029041.954 632070.709	3029037.036 632063.478
C7	5.00	7.88	3029084.614 632079.314	3029085.701 632085.701

Point #	Northing	Easting	Raw Description
1	3029843.408	631982.189	FOUNDATION CORNER
2	3029436.658	631897.189	FOUNDATION CORNER



MAIN STREET CROSSING ENLARGEMENT

Project:

**MMMN**  
MONTAGUSETT REGIONAL TRANSIT AUTHORITY

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North:

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Seal:

Laurence F. Keegan, Jr.  
12.18

CONSTRUCTION DOCUMENTS

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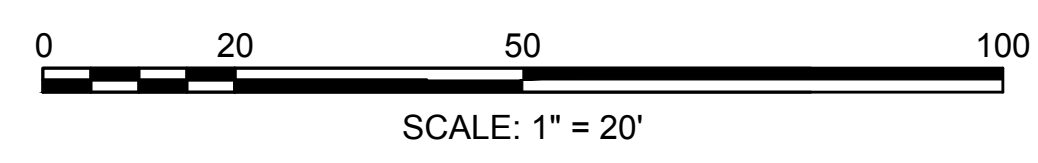
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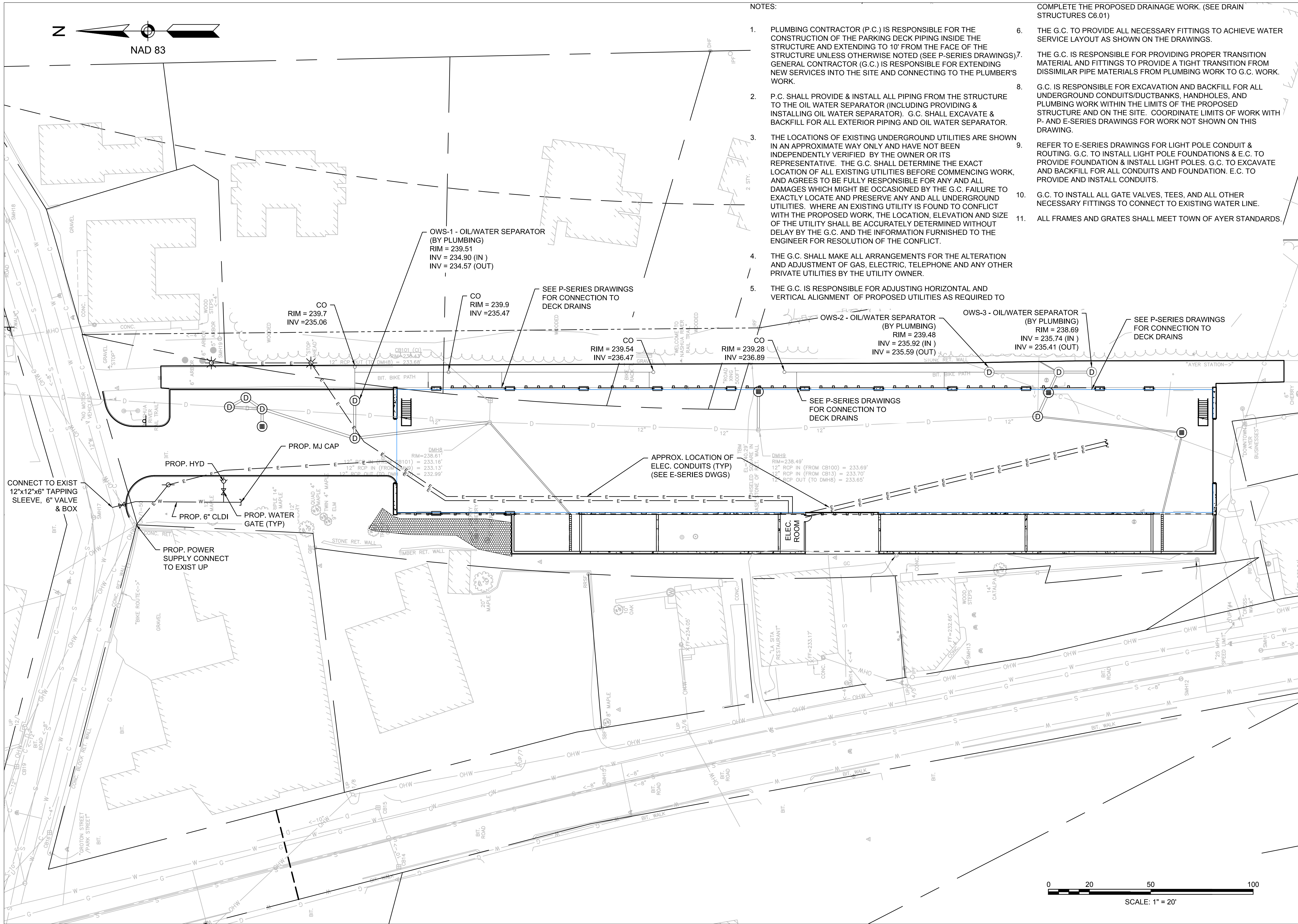
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LAYOUT AND CONTROL PLAN

Sheet Number:

**C4.01**





- NOTES:
1. PLUMBING CONTRACTOR (P.C.) IS RESPONSIBLE FOR THE CONSTRUCTION OF THE PARKING DECK PIPING INSIDE THE STRUCTURE AND EXTENDING TO 10' FROM THE FACE OF THE STRUCTURE UNLESS OTHERWISE NOTED (SEE P-SERIES DRAWINGS). GENERAL CONTRACTOR (G.C.) IS RESPONSIBLE FOR EXTENDING NEW SERVICES INTO THE SITE AND CONNECTING TO THE PLUMBER'S WORK.
  2. P.C. SHALL PROVIDE & INSTALL ALL PIPING FROM THE STRUCTURE TO THE OIL WATER SEPARATOR (INCLUDING PROVIDING & INSTALLING OIL WATER SEPARATOR). G.C. SHALL EXCAVATE & BACKFILL FOR ALL EXTERIOR PIPING AND OIL WATER SEPARATOR.
  3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE G.C. SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE G.C. FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE G.C. AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
  4. THE G.C. SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY OWNER.
  5. THE G.C. IS RESPONSIBLE FOR ADJUSTING HORIZONTAL AND VERTICAL ALIGNMENT OF PROPOSED UTILITIES AS REQUIRED TO COMPLETE THE PROPOSED DRAINAGE WORK. (SEE DRAIN STRUCTURES C6.01)
  6. THE G.C. TO PROVIDE ALL NECESSARY FITTINGS TO ACHIEVE WATER SERVICE LAYOUT AS SHOWN ON THE DRAWINGS.
  7. THE G.C. IS RESPONSIBLE FOR PROVIDING PROPER TRANSITION MATERIAL AND FITTINGS TO PROVIDE A TIGHT TRANSITION FROM DISSIMILAR PIPE MATERIALS FROM PLUMBING WORK TO G.C. WORK.
  8. G.C. IS RESPONSIBLE FOR EXCAVATION AND BACKFILL FOR ALL UNDERGROUND CONDUITS/DUCTBANKS, HANDHOLES, AND PLUMBING WORK WITHIN THE LIMITS OF THE PROPOSED STRUCTURE AND ON THE SITE. COORDINATE LIMITS OF WORK WITH P- AND E-SERIES DRAWINGS FOR WORK NOT SHOWN ON THIS DRAWING.
  9. REFER TO E-SERIES DRAWINGS FOR LIGHT POLE CONDUIT & ROUTING. G.C. TO INSTALL LIGHT POLE FOUNDATIONS & E.C. TO PROVIDE FOUNDATION & INSTALL LIGHT POLES. G.C. TO EXCAVATE AND BACKFILL FOR ALL CONDUITS AND FOUNDATION. E.C. TO PROVIDE AND INSTALL CONDUITS.
  10. G.C. TO INSTALL ALL GATE VALVES, TEES, AND ALL OTHER NECESSARY FITTINGS TO CONNECT TO EXISTING WATER LINE.
  11. ALL FRAMES AND GRATES SHALL MEET TOWN OF AYER STANDARDS.

Project:  
**MMMN**  
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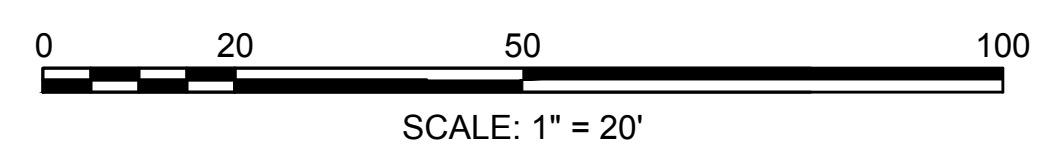
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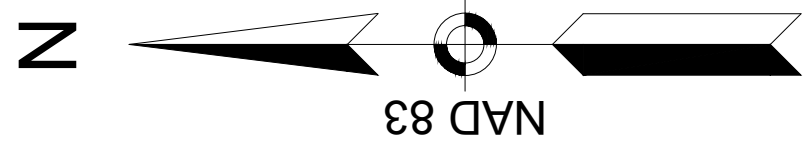
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 12.7.18

CONSTRUCTION DOCUMENTS

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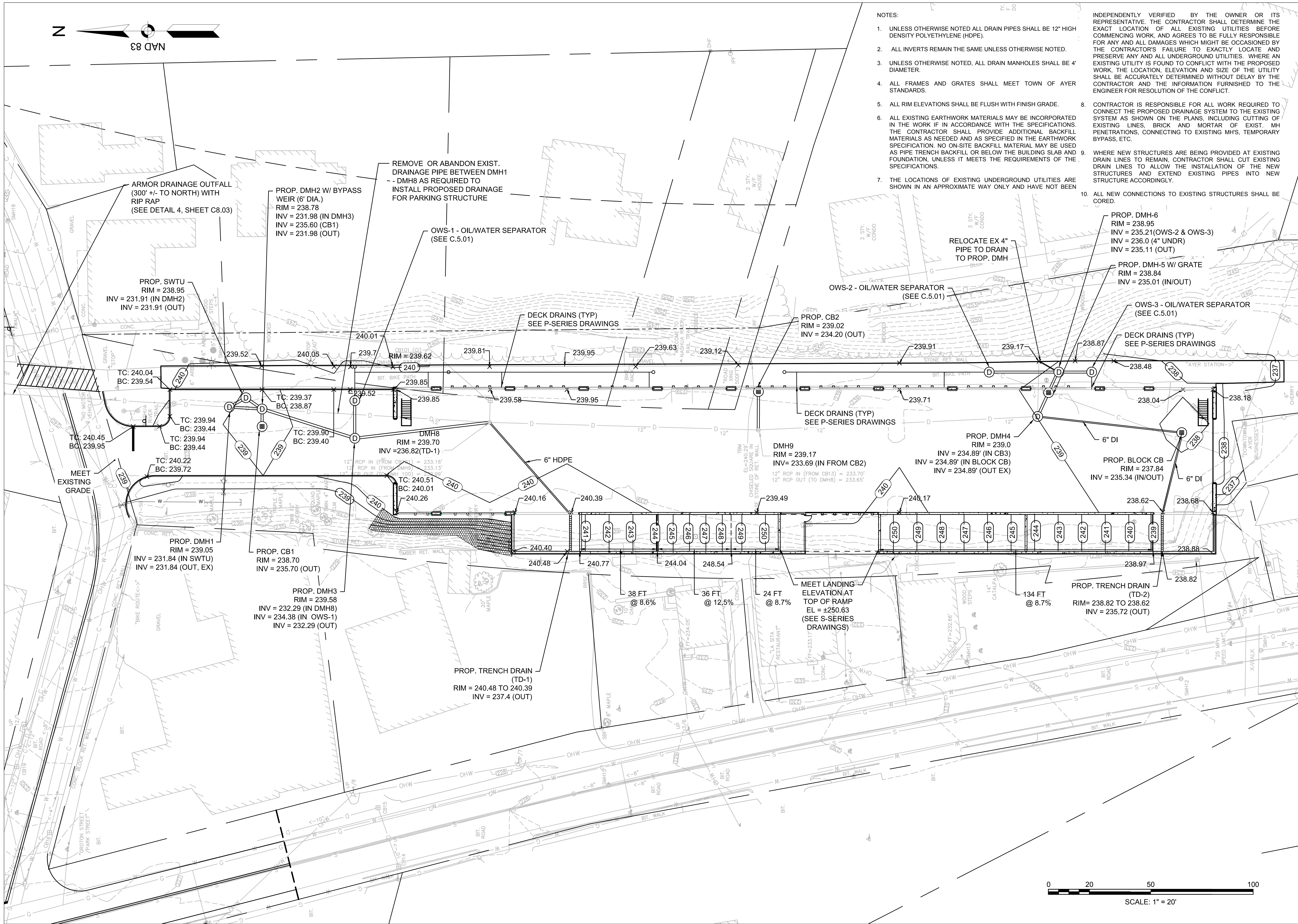
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**UTILITY PLAN**  
 Sheet Number:  
**C5.01**





NOTES:

- UNLESS OTHERWISE NOTED ALL DRAIN PIPES SHALL BE 12" HIGH DENSITY POLYETHYLENE (HDPE).
- ALL INVERTS REMAIN THE SAME UNLESS OTHERWISE NOTED.
- UNLESS OTHERWISE NOTED, ALL DRAIN MANHOLES SHALL BE 4' DIAMETER.
- ALL FRAMES AND GRATES SHALL MEET TOWN OF AYER STANDARDS.
- ALL RIM ELEVATIONS SHALL BE FLUSH WITH FINISH GRADE.
- ALL EXISTING EARTHWORK MATERIALS MAY BE INCORPORATED IN THE WORK IF IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL BACKFILL MATERIALS AS NEEDED AND AS SPECIFIED IN THE EARTHWORK SPECIFICATION. NO ON-SITE BACKFILL MATERIAL MAY BE USED AS PIPE TRENCH BACKFILL OR BELOW THE BUILDING SLAB AND FOUNDATION, UNLESS IT MEETS THE REQUIREMENTS OF THE SPECIFICATIONS.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- CONTRACTOR IS RESPONSIBLE FOR ALL WORK REQUIRED TO CONNECT THE PROPOSED DRAINAGE SYSTEM TO THE EXISTING SYSTEM AS SHOWN ON THE PLANS, INCLUDING CUTTING OF EXISTING LINES, BRICK AND MORTAR OF EXIST. MH PENETRATIONS, CONNECT TO EXISTING MH'S, TEMPORARY BYPASS, ETC.
- WHERE NEW STRUCTURES ARE BEING PROVIDED AT EXISTING DRAIN LINES TO REMAIN, CONTRACTOR SHALL CUT EXISTING DRAIN LINES TO ALLOW THE INSTALLATION OF THE NEW STRUCTURES AND EXISTING PIPES INTO NEW STRUCTURE ACCORDINGLY.
- ALL NEW CONNECTIONS TO EXISTING STRUCTURES SHALL BE CORED.

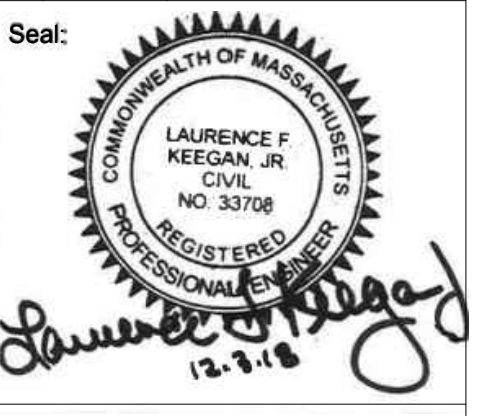


Project:  
**MMMN**  
 MONTAGHSETT REGIONAL TRANSIT AUTHORITY  
 AYER COMMUTER RAIL  
 PARKING FACILITY  
 AYER, MA

Consultants:  
**TimHaas**  
 550 Falmouth Boulevard Suite 100,  
 Falmouth, MA 02542  
 T: (888)342-0200 F: (888)342-0222  
 http://www.timhaas.com

Revisions:

Rev	Date	Description



CONSTRUCTION DOCUMENTS

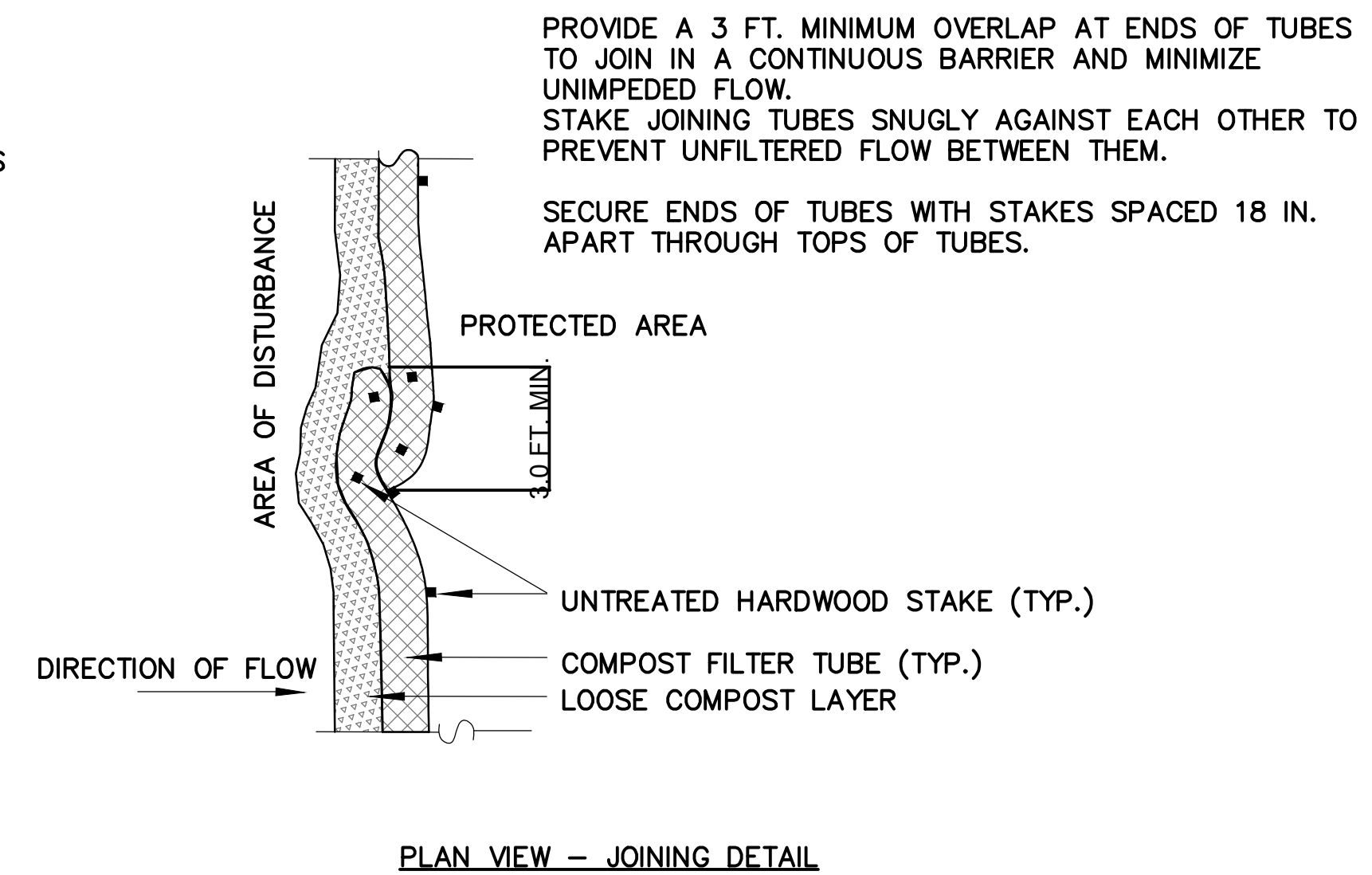
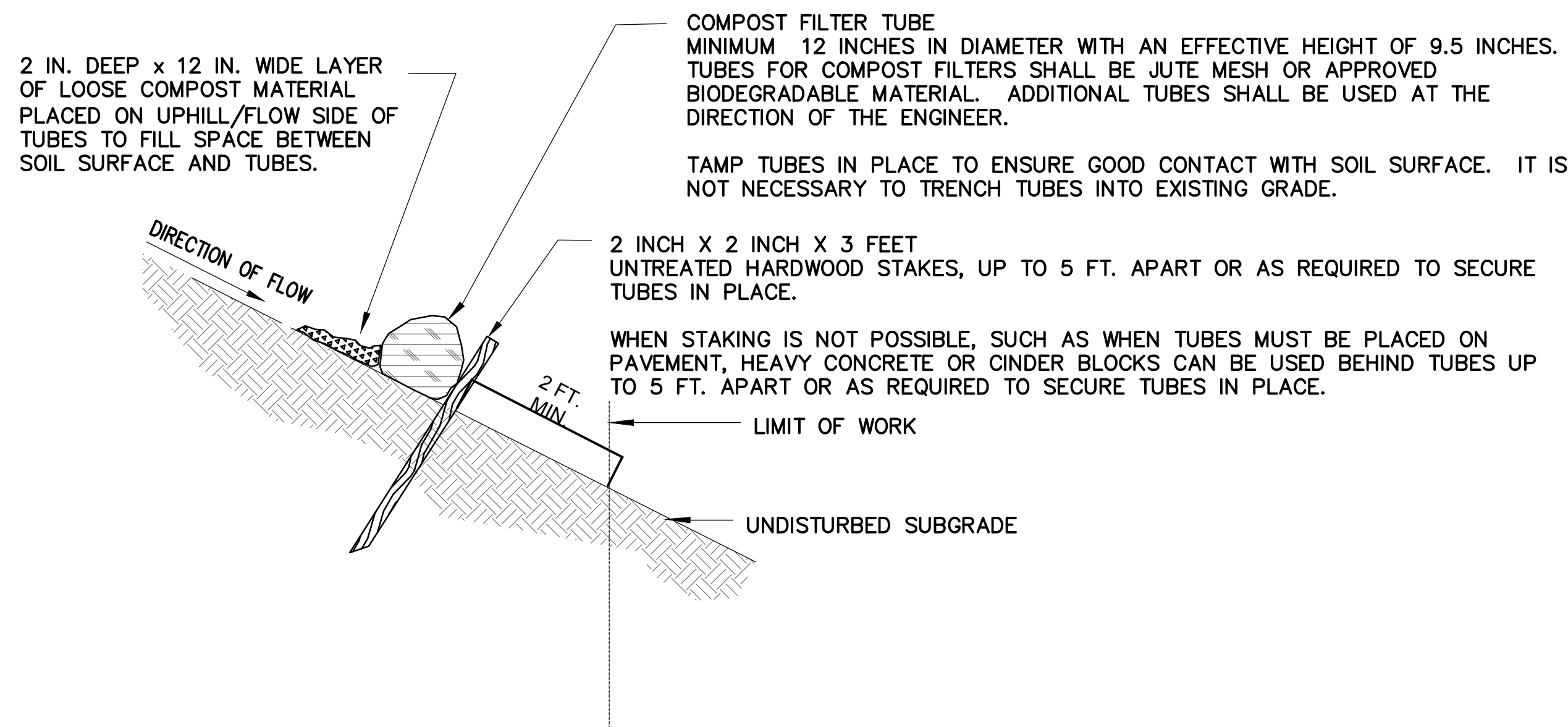
Date: 12/05/18  
 Scale: 1:20  
 Drawn By: NAP  
 Reviewed By: AKP  
 Checked By: LFK  
 Approved By: LFK

Drawing Title:  
**GRADING & DRAINAGE PLAN**

Sheet Number:  
**C6.01**

**GENERAL NOTES:**

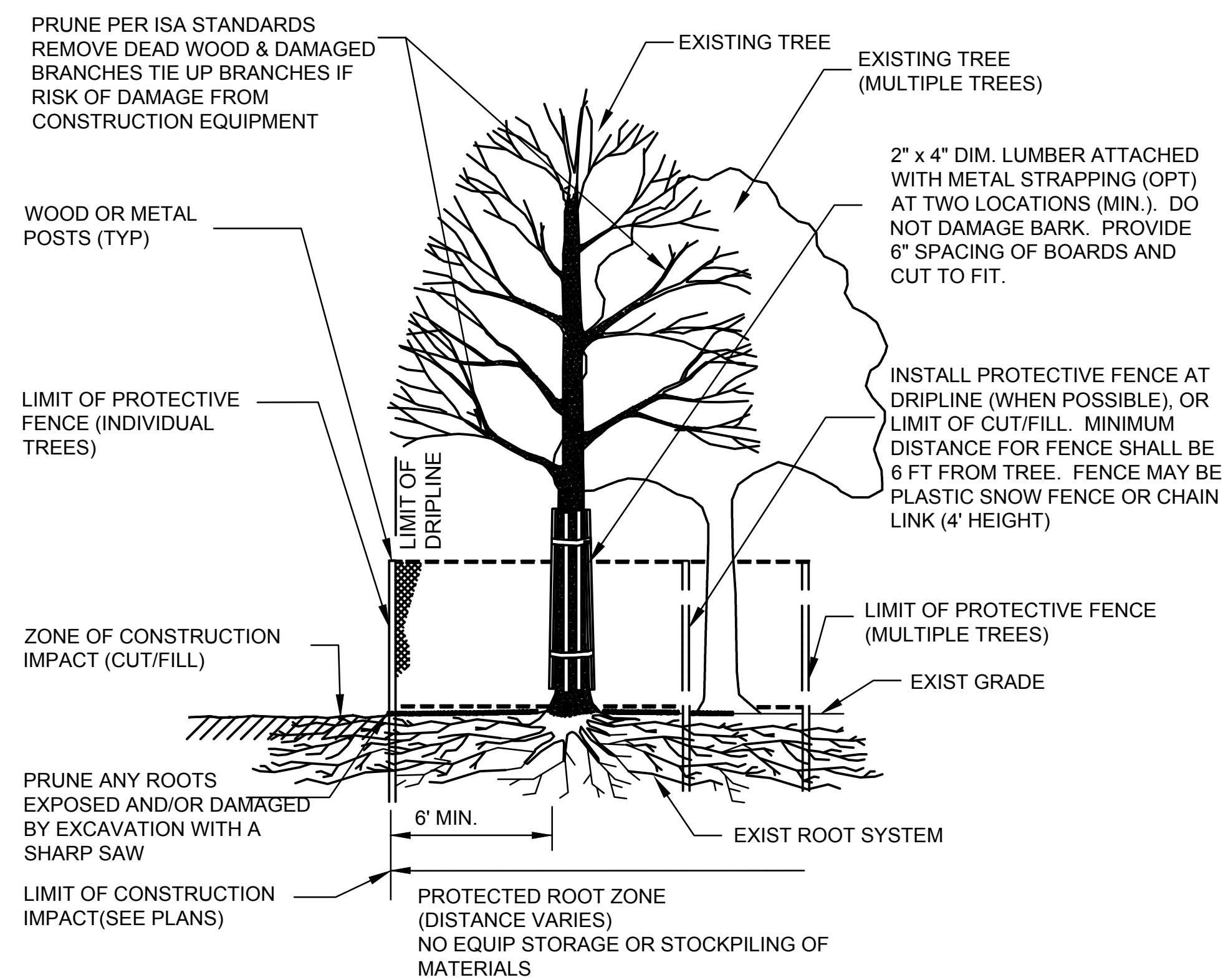
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.
5. MULCH MATERIAL FOR THE FILTER TUBES SHALL BE WEED-FREE STRAW, WOOD EXCELSIOR, COMPOST, OR WOOD CHIPS, OR COIR. STRAW SHALL BE WEED FREE AND DERIVED FROM THRESHING OF GRAIN CROP.
6. CURVE ENDS UPHILL TO PREVENT DIVERSION OF UNFILTERED RUN-OFF.



PLAN VIEW - JOINING DETAIL

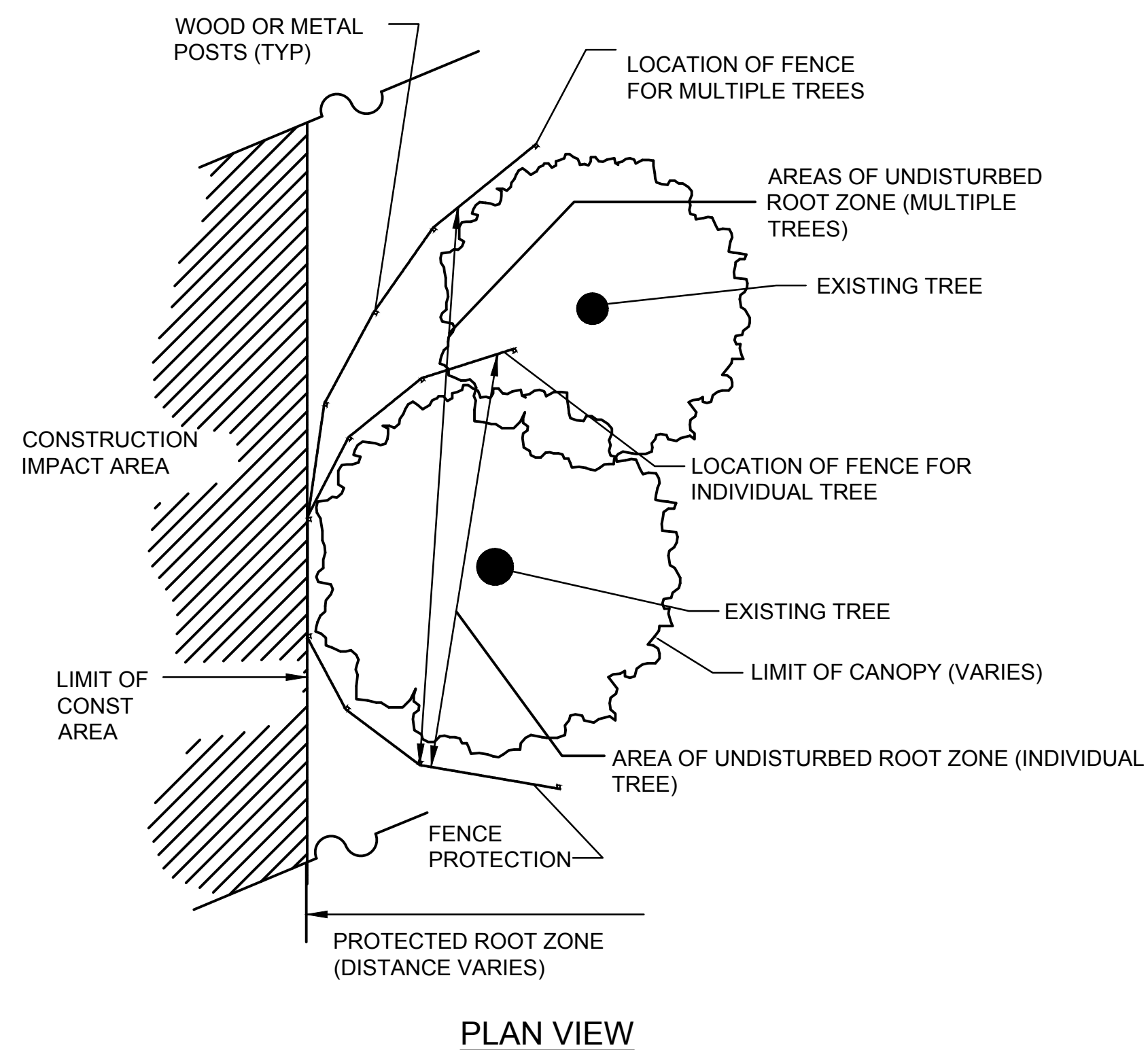
**1 SINGLE COMPOST FILTER TUBE DETAIL**

SCALE: N.T.S.

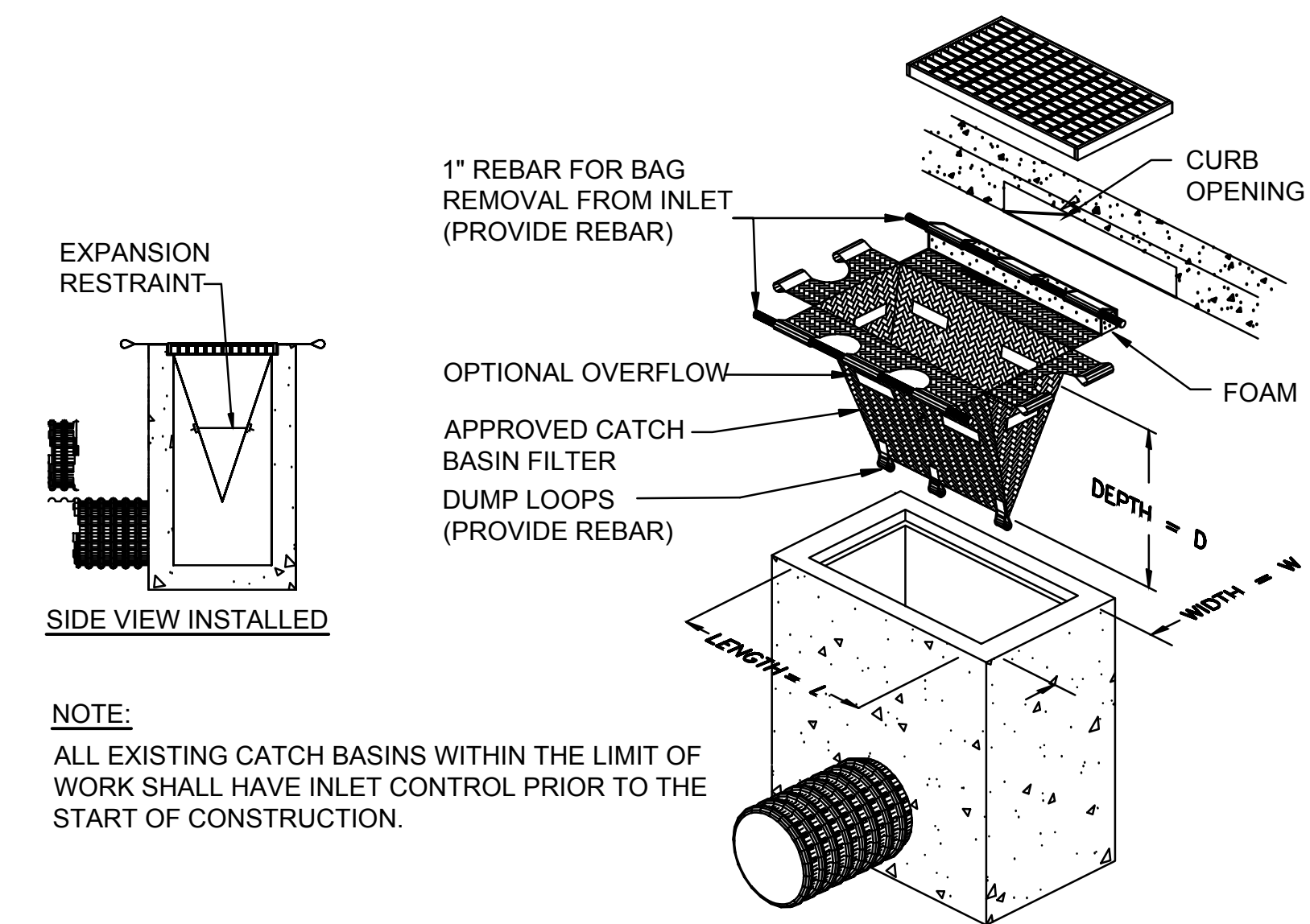


**2 EXISTING TREE PROTECTION**

SCALE: N.T.S.

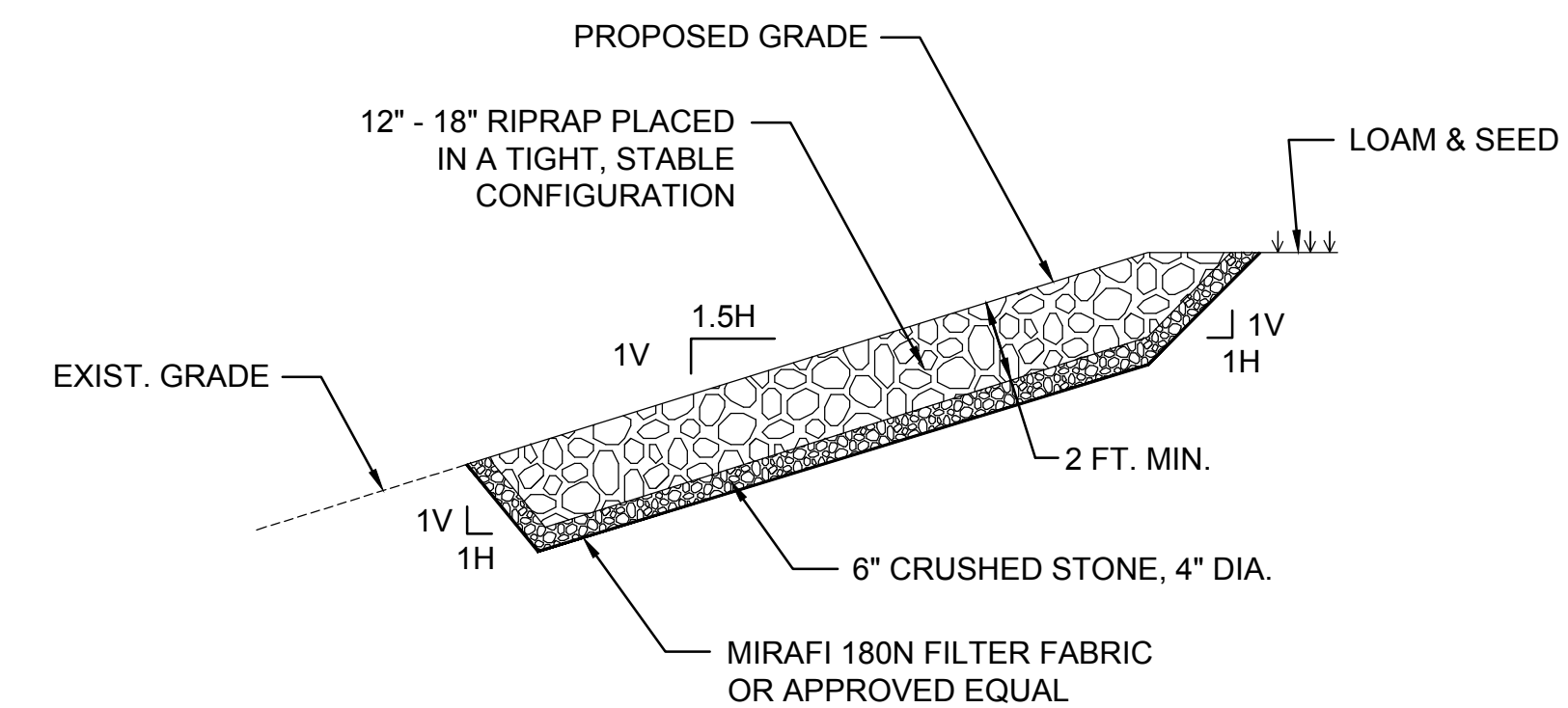


PLAN VIEW



**3 INLET SEDIMENT CONTROL**

SCALE: N.T.S.



**4 RIP RAP SLOPE**

SCALE: N.T.S.

Project:



AYER COMMUTER RAIL  
PARKING FACILITY  
AYER, MA



North:

Revisions:

Rev	Date	Description

Seal:



CONSTRUCTION  
DOCUMENTS

Date: 12/05/18

Scale: N.T.S.

Drawn By: NAP

Reviewed By: AKP

Checked By: DLG

Approved By: LFK

Drawing Title:

**DETAILS**

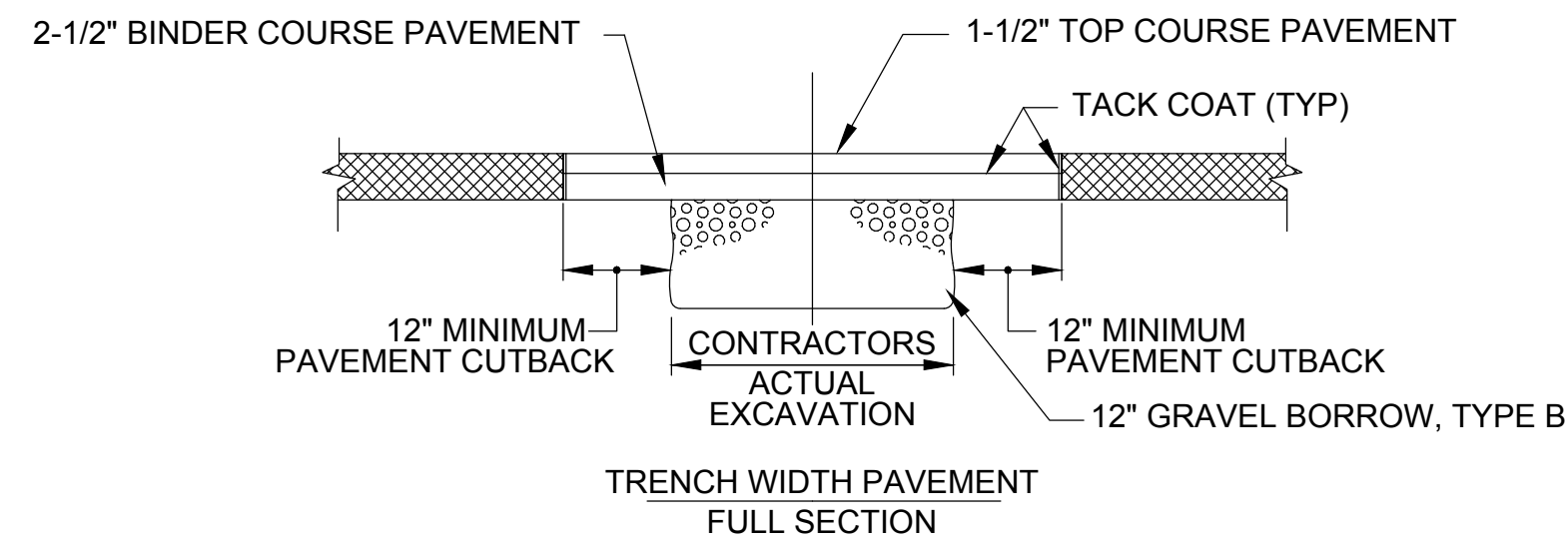
Sheet Number:

**C8.01**

IDENTIFICATION NUMBER	TEXT	PANEL SIZE				NUMERALS & LETTERS					COLOR COMB.	NUMBER OF SIGNS REQUIRED	TOTAL AREA SQ. FT.	POST SIZE AND NUMBER REQUIRED
		WIDTH	HEIGHT	CORNER RADII	BORDER WIDTH	MARGIN WIDTH	NUM. IN.	UPPER CASE	LOWER CASE	SERIES				
R1-1		30"	30"								WHITE ON RED	1	12.5	P5-1 1
W11-2		36"	36"								BLACK ON YELLOW	5	36	P5-1 3

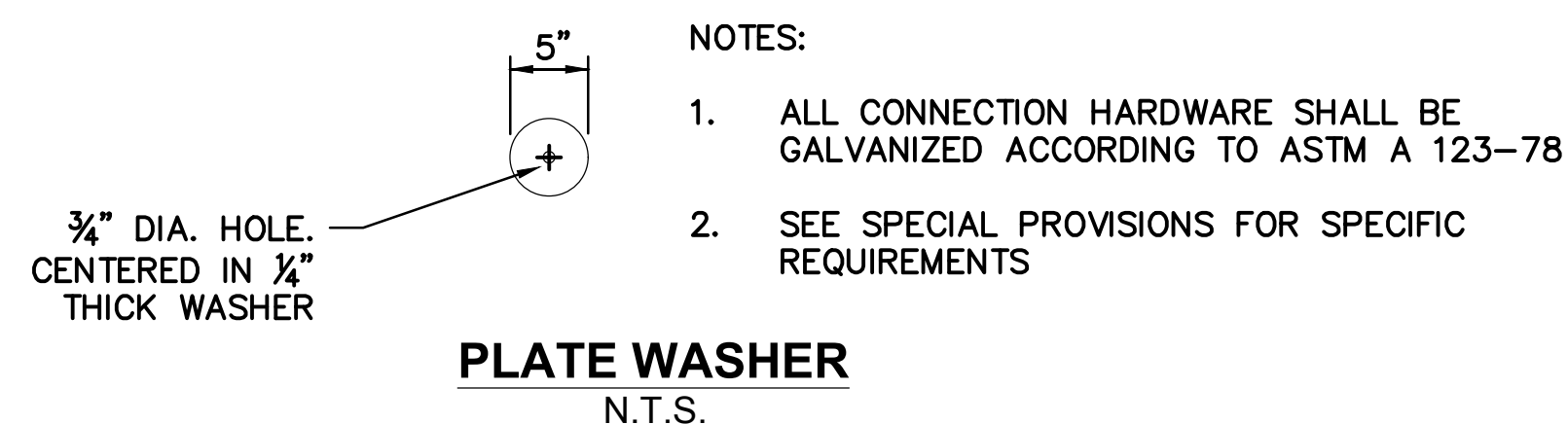
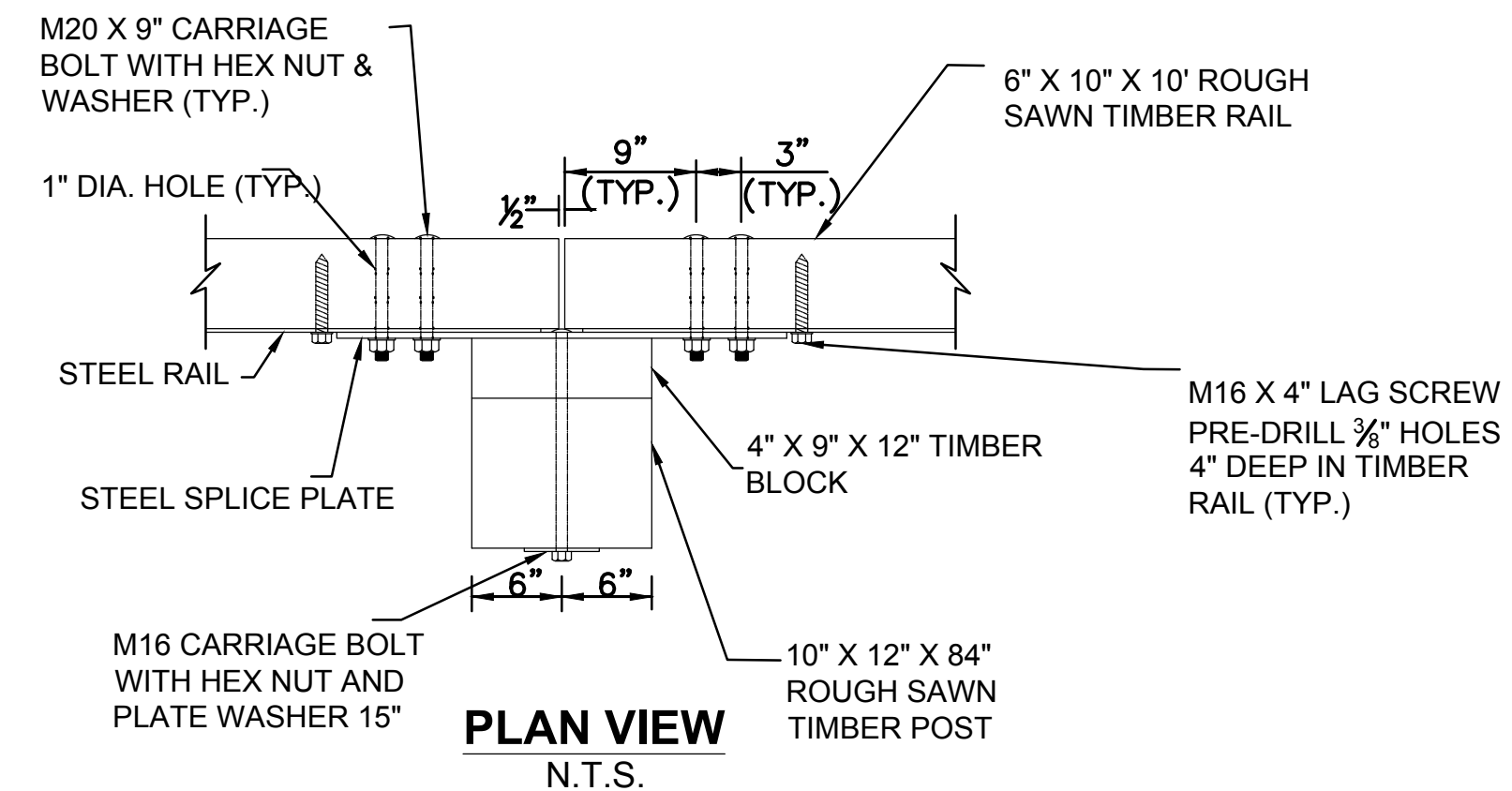
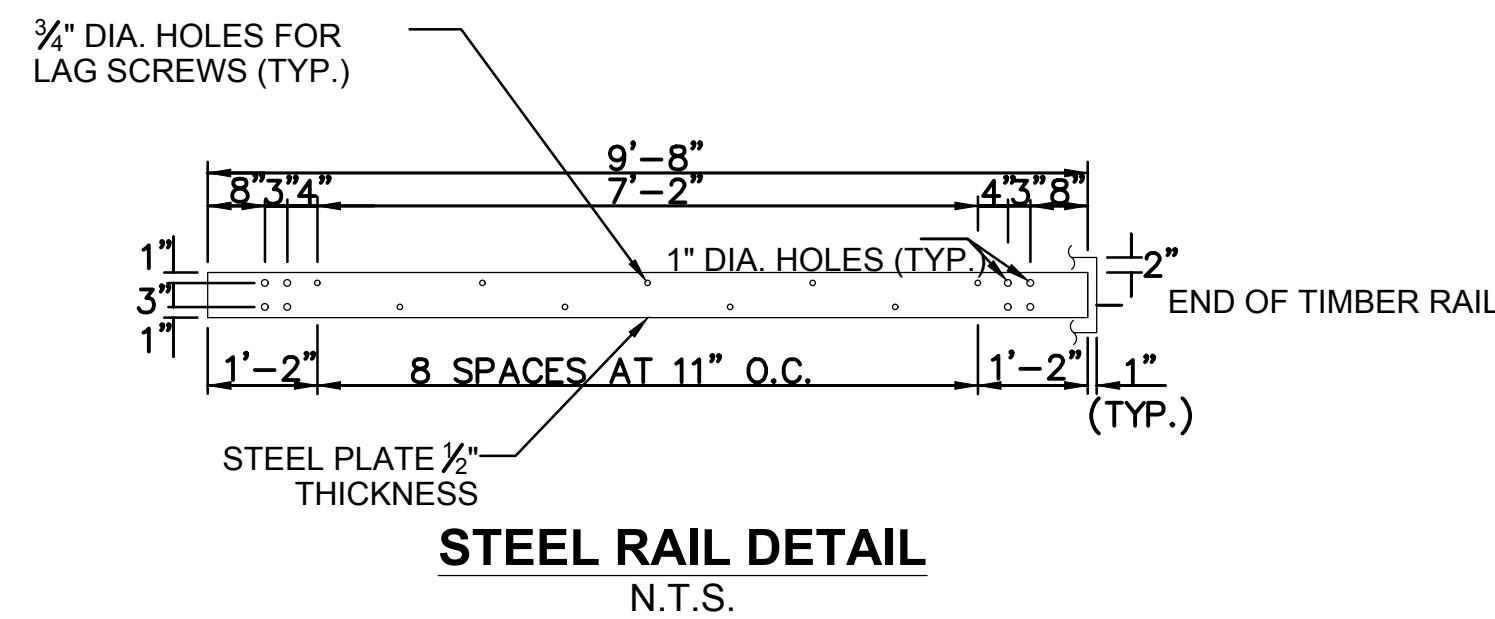
NOTE:  
1. FOR ADDITIONAL SIGNAGE, SEE A-SERIES DRAWINGS.

**1 PERMANENT TRAFFIC SIGN SUMMARY**  
SCALE: N.T.S.



NOTE:  
CONTRACTOR SHALL REPLACE PAVEMENT ASSOCIATED WITH THE PROPOSED WORK. WORK SHALL INCLUDE BINDER AND TOP COURSE PAVEMENT.

**2 PAVEMENT REPLACEMENT DETAIL**  
SCALE: N.T.S.

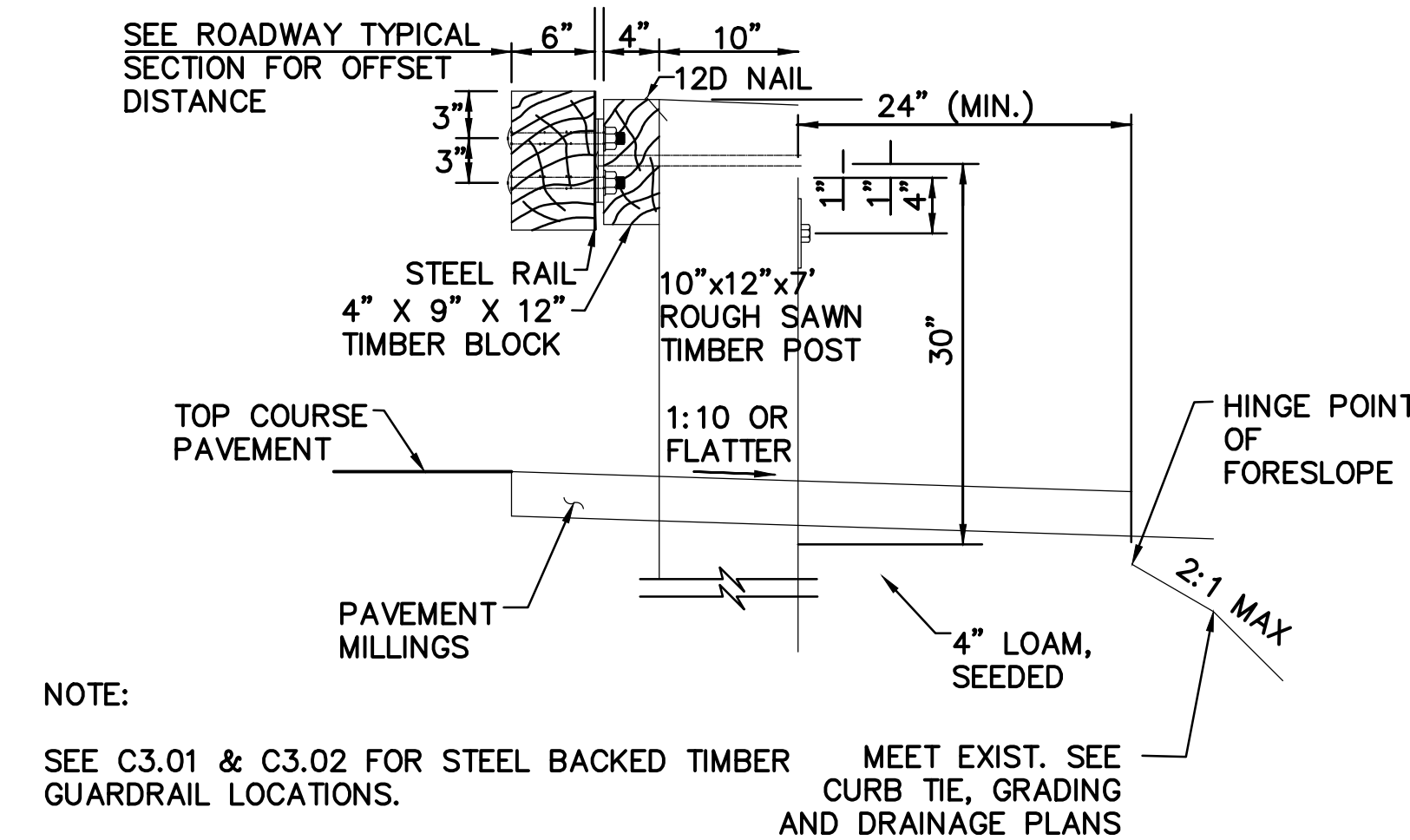


**2 STEEL-BACKED WOOD GUARDRAIL**  
SCALE: N.T.S.

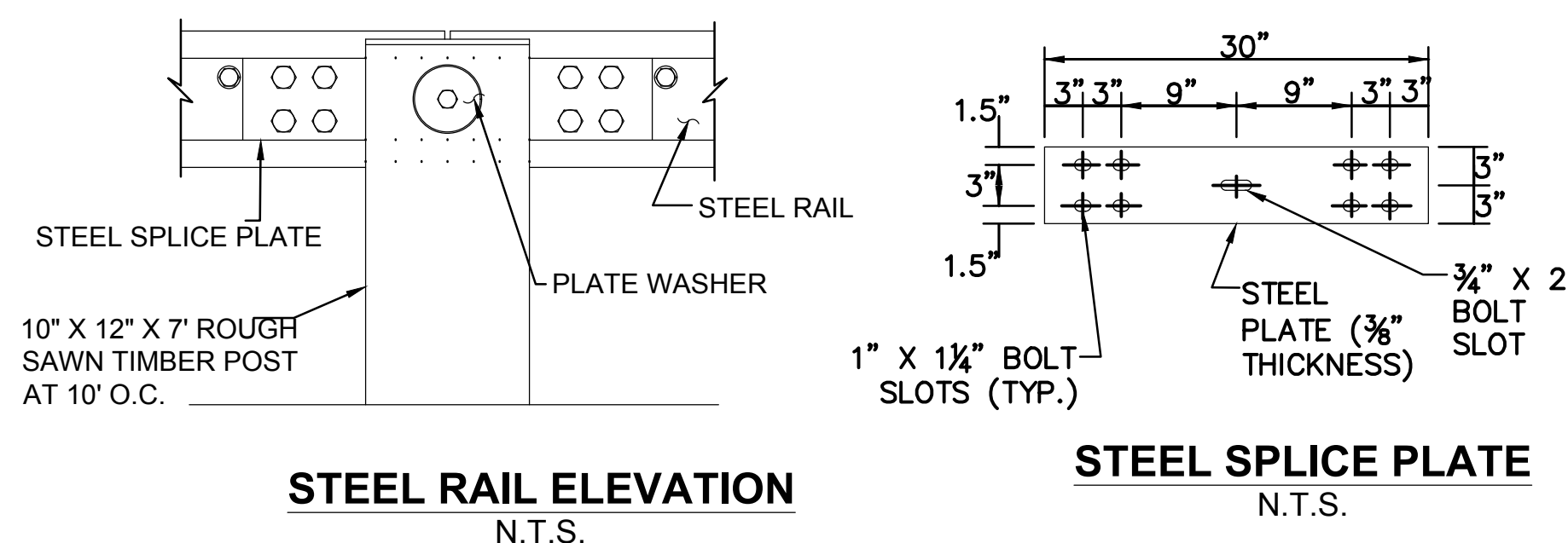
**PAVEMENT NOTES**

**PROPOSED FULL DEPTH PAVEMENT:**  
(EXIST. BIKE PATH AND GRASSED AREAS PROPOSED TO BE PAVED TO THE LIMITS SHOWN ON C3.01)  
SURFACE: 4" HOT MIX ASPHALT PAVEMENT (1 1/2" TOP COURSE MATERIAL OVER 2 1/2" BINDER COURSE MATERIAL)  
SUBBASE: PARKING LOT AND BIKE PATH 4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL BORROW, TYPE B  
PARKING STRUCTURE RAMP 4" DENSE GRADED CRUSHED STONE OVER 16" GRAVEL BORROW, TYPE B

**PROPOSED FULL DEPTH RECLAMATION:**  
(WITHIN EXIST. PARKING LOT)  
SURFACE: 4" HOT MIX ASPHALT PAVEMENT (1 1/2" TOP COURSE MATERIAL OVER 2 1/2" BINDER COURSE MATERIAL)  
SUBBASE: 12" MIN RECLAIMED PAVEMENT W/CRUSHED STONE FOR BLENDING

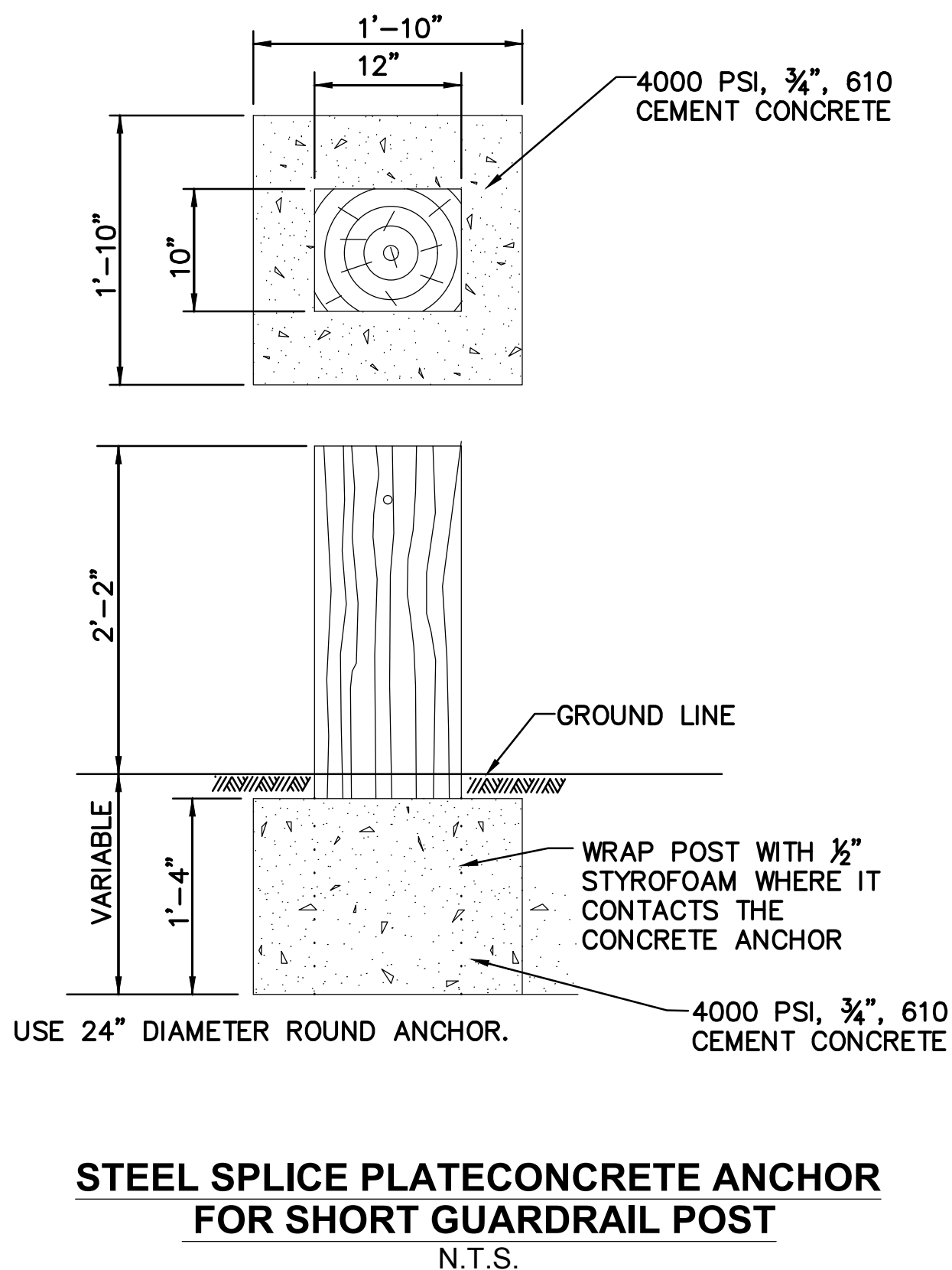


**TYPICAL GUARDRAIL CROSS SECTION**  
N.T.S.

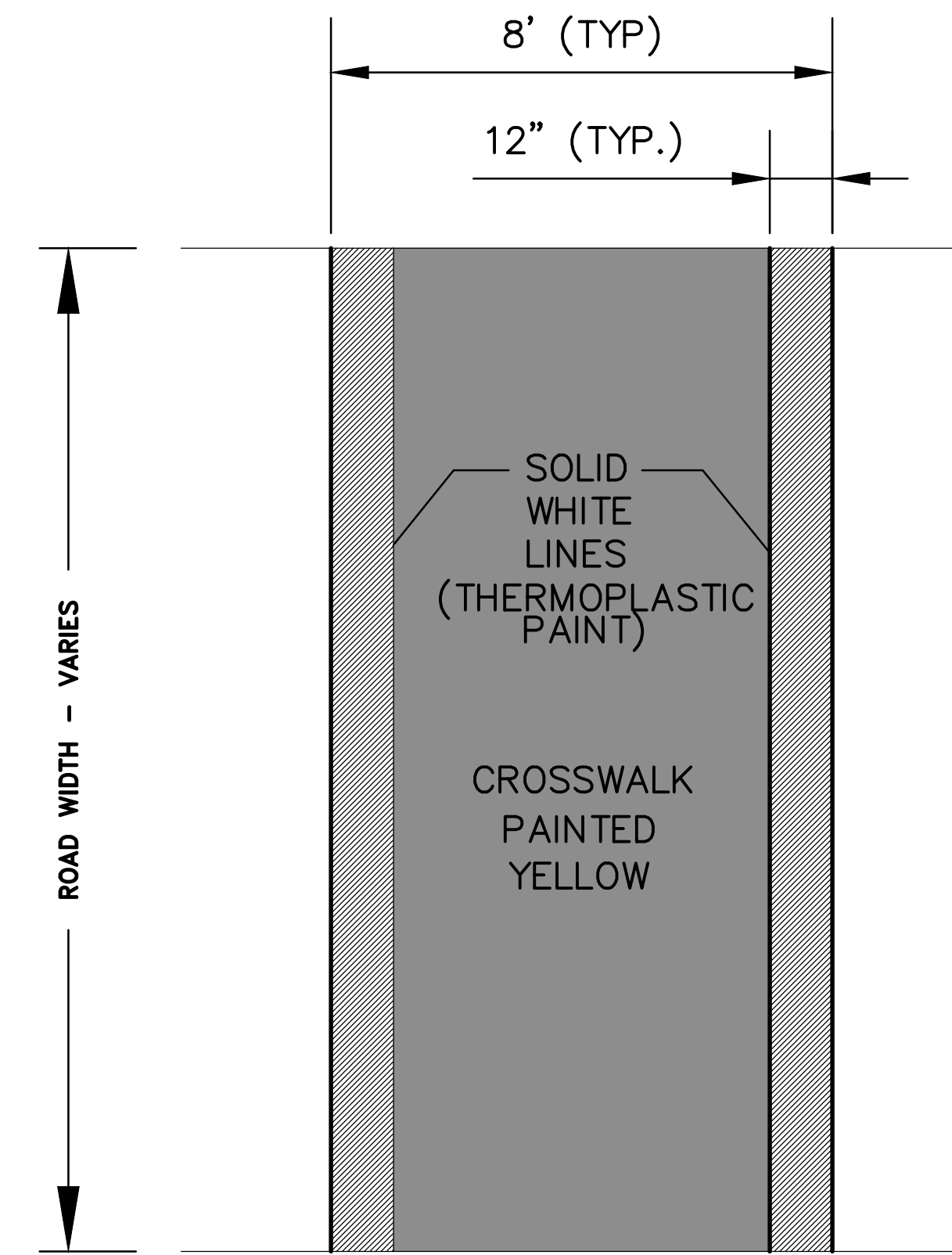


**STEEL SPLICE PLATE**  
N.T.S.

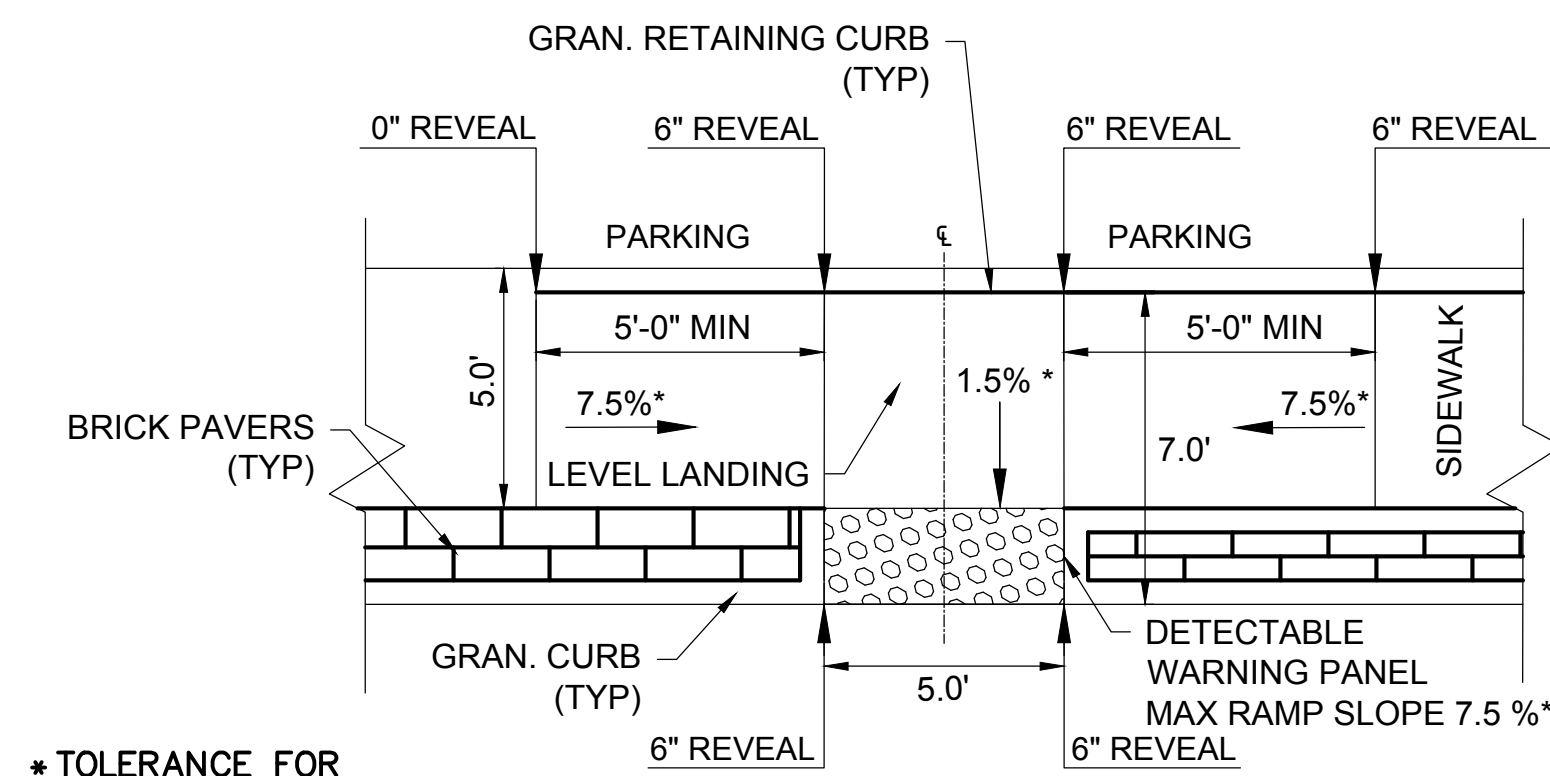
**6 CEMENT CONCRETE WHEELCHAIR RAMP TYPE "A"**  
SCALE: N.T.S.



**4 MAIN STREET CROSSWALK DETAIL**  
SCALE: N.T.S.

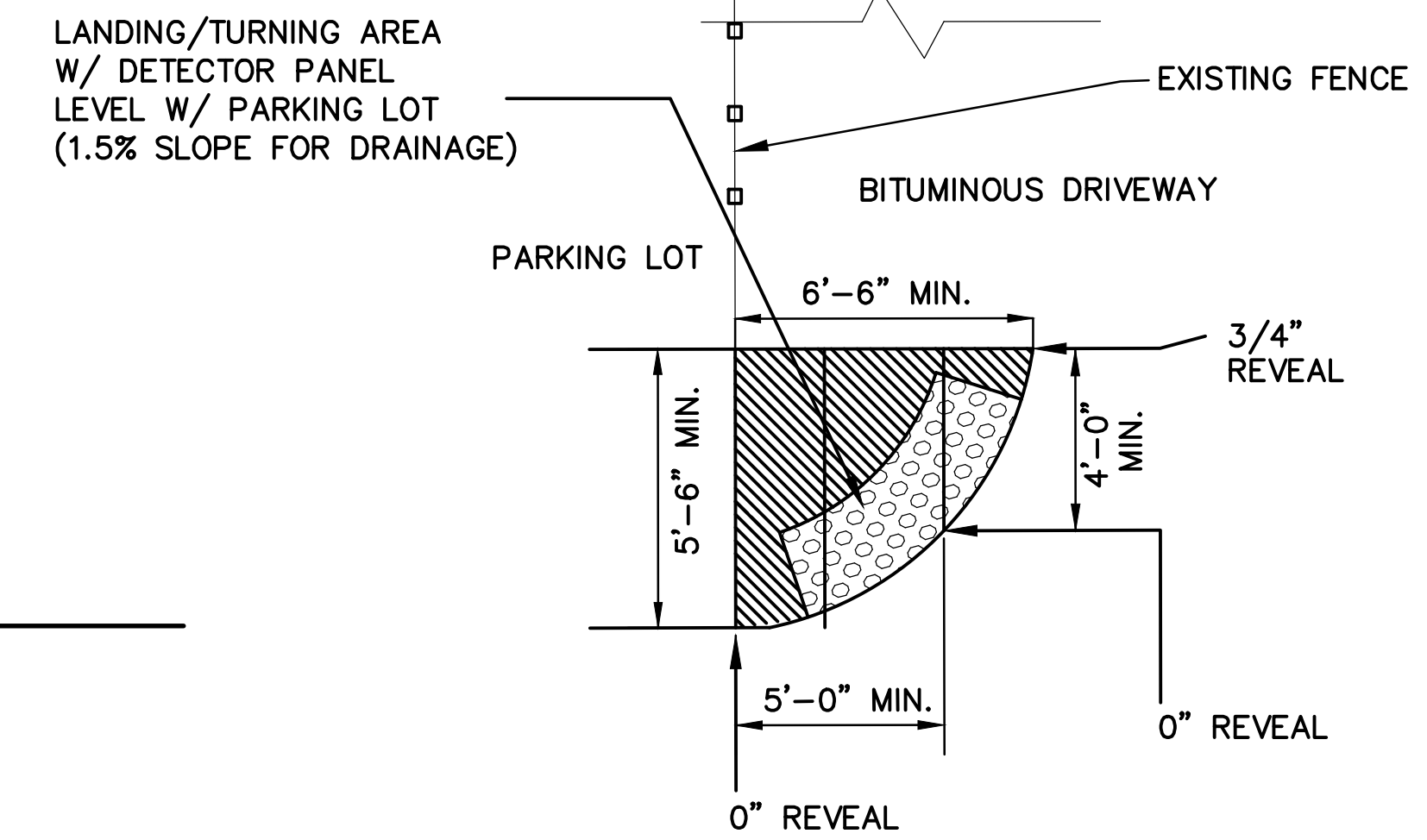


NOTES: LINE PAINTINGS SHALL BE THERMOPLASTIC

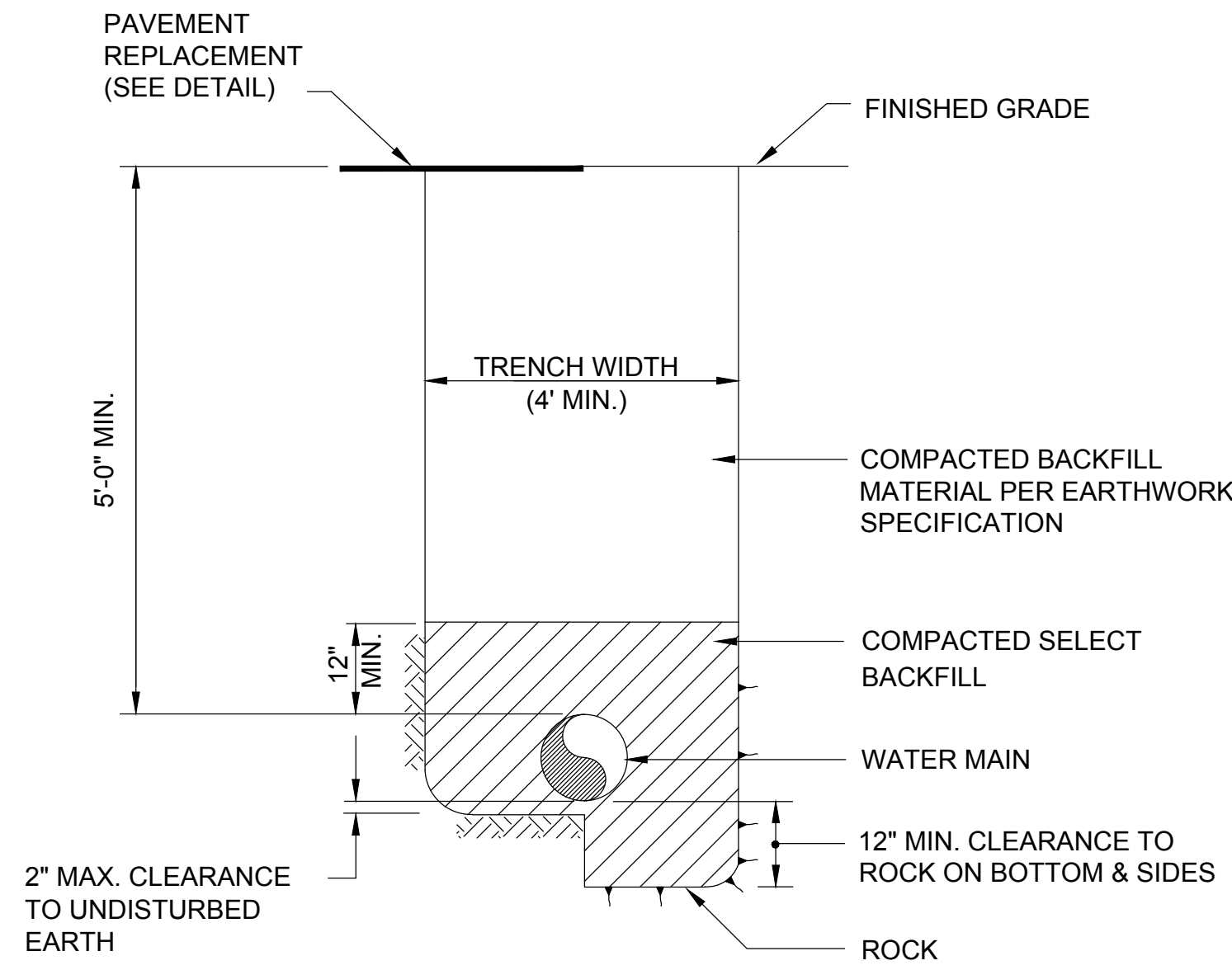


\* TOLERANCE FOR CONSTRUCTION 0.5% ±

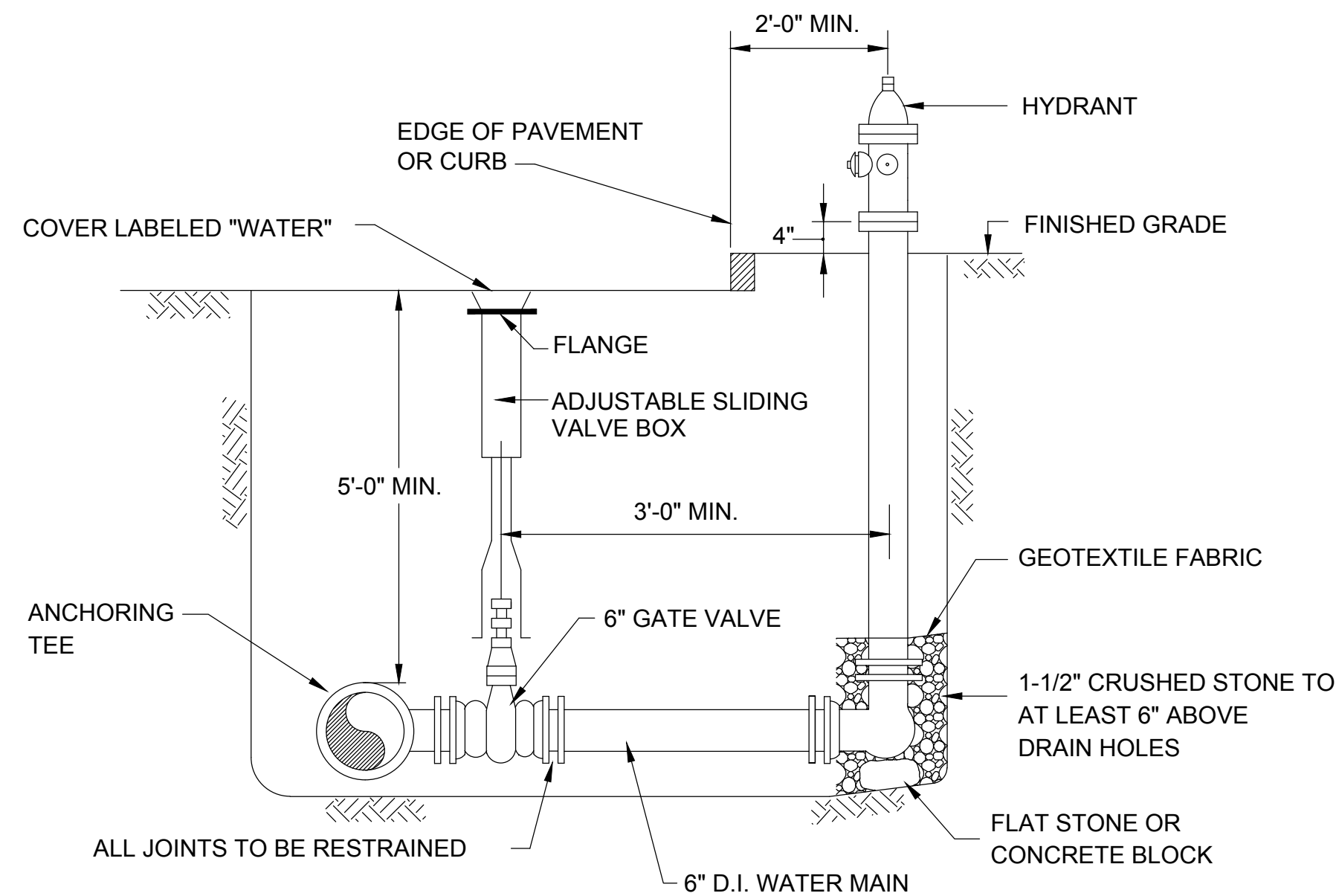
**5 CEMENT CONCRETE WHEELCHAIR RAMP WITH PAVERS TYPE "B"**  
SCALE: N.T.S.



\* TOLERANCE FOR CONSTRUCTION 0.5% ±

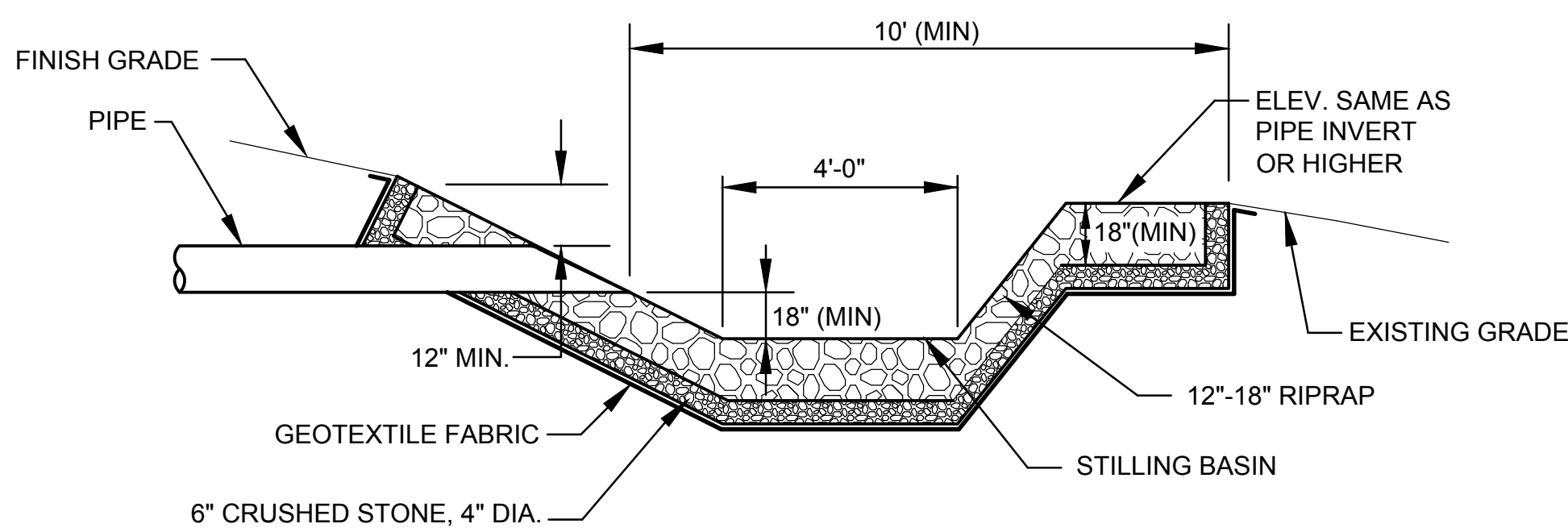


**1 WATER MAIN TRENCH DETAIL**  
SCALE: N.T.S.

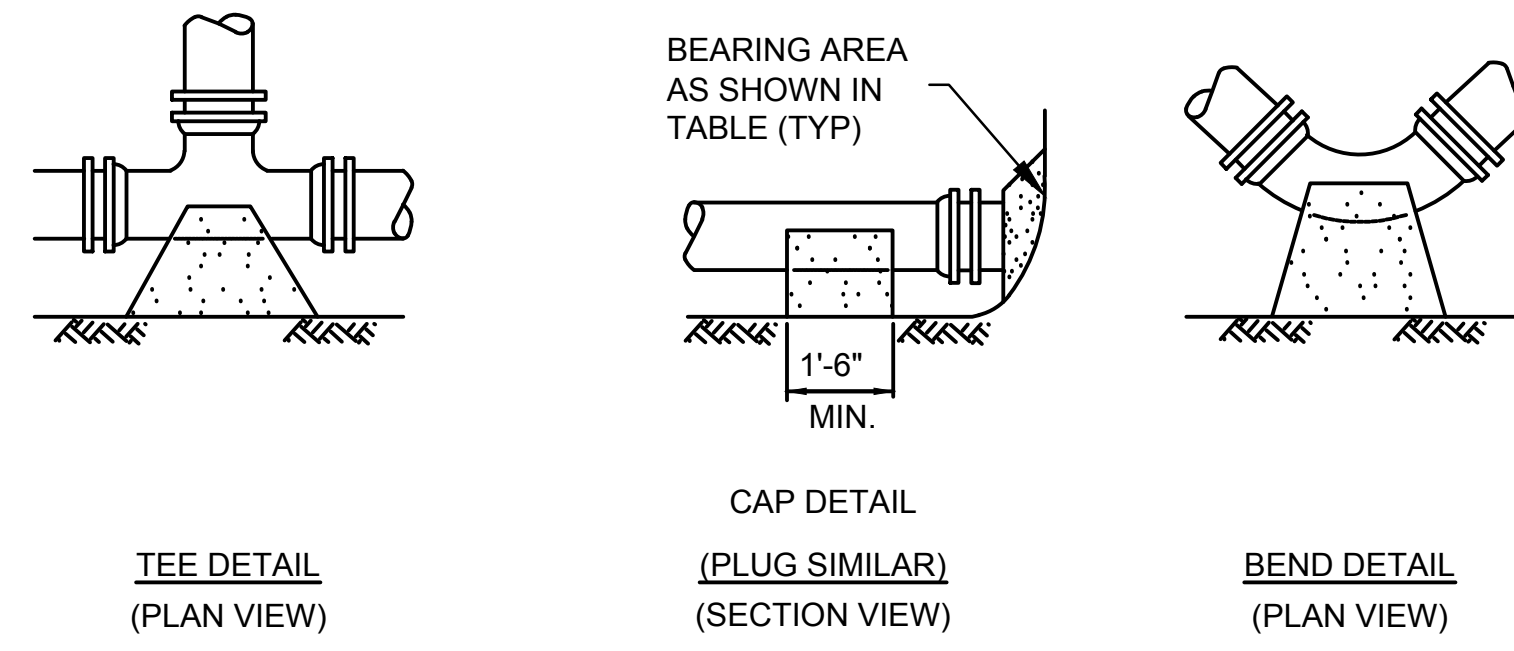


- NOTES**
1. HYDRANT GATE VALVE TO BE LOCATED WITHIN ROADWAY PAVEMENT WHERE POSSIBLE.
  2. ALL VALVES AND HYDRANTS SHALL OPEN LEFT. HYDRANTS SHALL BE KENNEDY GUARDIAN HYDRANTS.
  3. GATES VALVES SHALL BE AWWA RESILIENT SEAT GATE VALVES.
  4. USE TWO 6" BENDS OR OFFSET ON LATERAL TO ACHIEVE REQUIRED HYDRANT ELEVATION IF NECESSARY.

**2 HYDRANT AND VALVE DETAIL**  
SCALE: N.T.S.



**3 RIP RAP OUTFALL**  
SCALE: N.T.S.

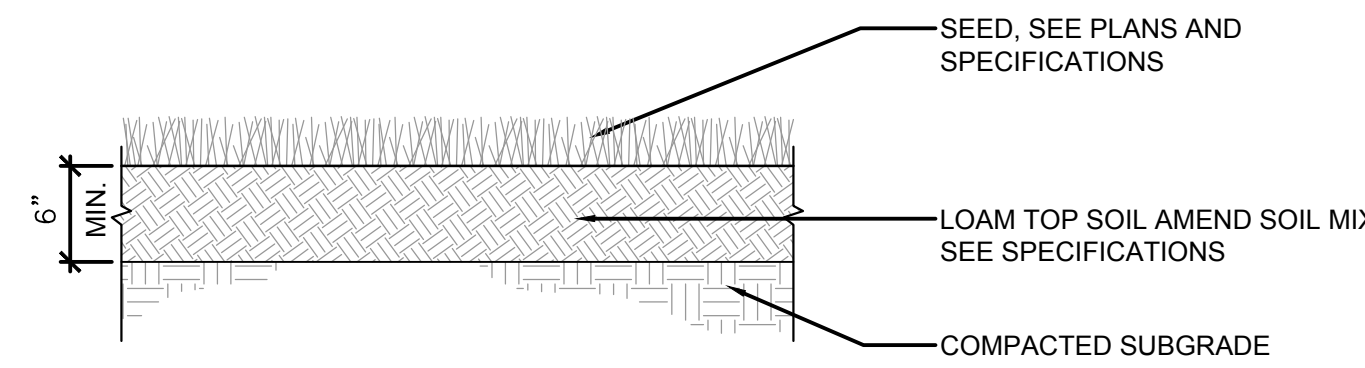


**TABLE OF CONCRETE THRUST RESTRAINT MINIMUM BEARING AREAS IN SQUARE FEET AGAINST UNDISTURBED MATERIAL FOR WATER MAIN FITTINGS**

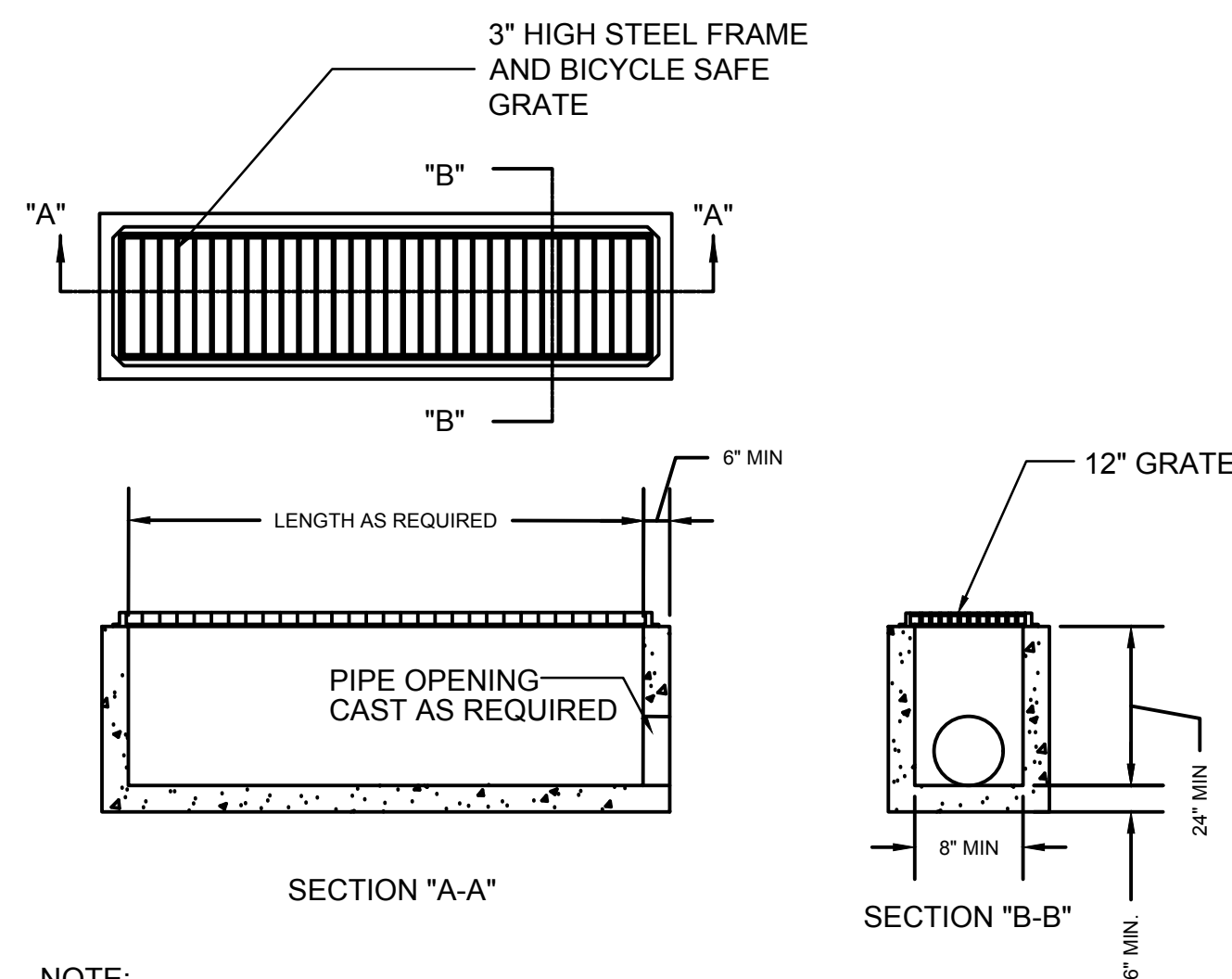
SIZE OF MAIN	90° BENDS, TEES, CAPS AND PLUGS	45° BENDS AND WYES	22-1/2° BENDS	11-1/4° BENDS
6", 8"	5	4	2	2
10", 12"	12	9	5	2
16"	20	15	8	4
20"	36	24	13	7

- NOTES:**
1. ALL WATER MAIN FITTINGS SHALL HAVE CONCRETE BACKING FOR
  2. CONTRACTOR SHALL USE CARE TO AVOID PLACEMENT OF

**4 CONCRETE THRUST RESTRAINT FOR FITTINGS**  
SCALE: N.T.S.

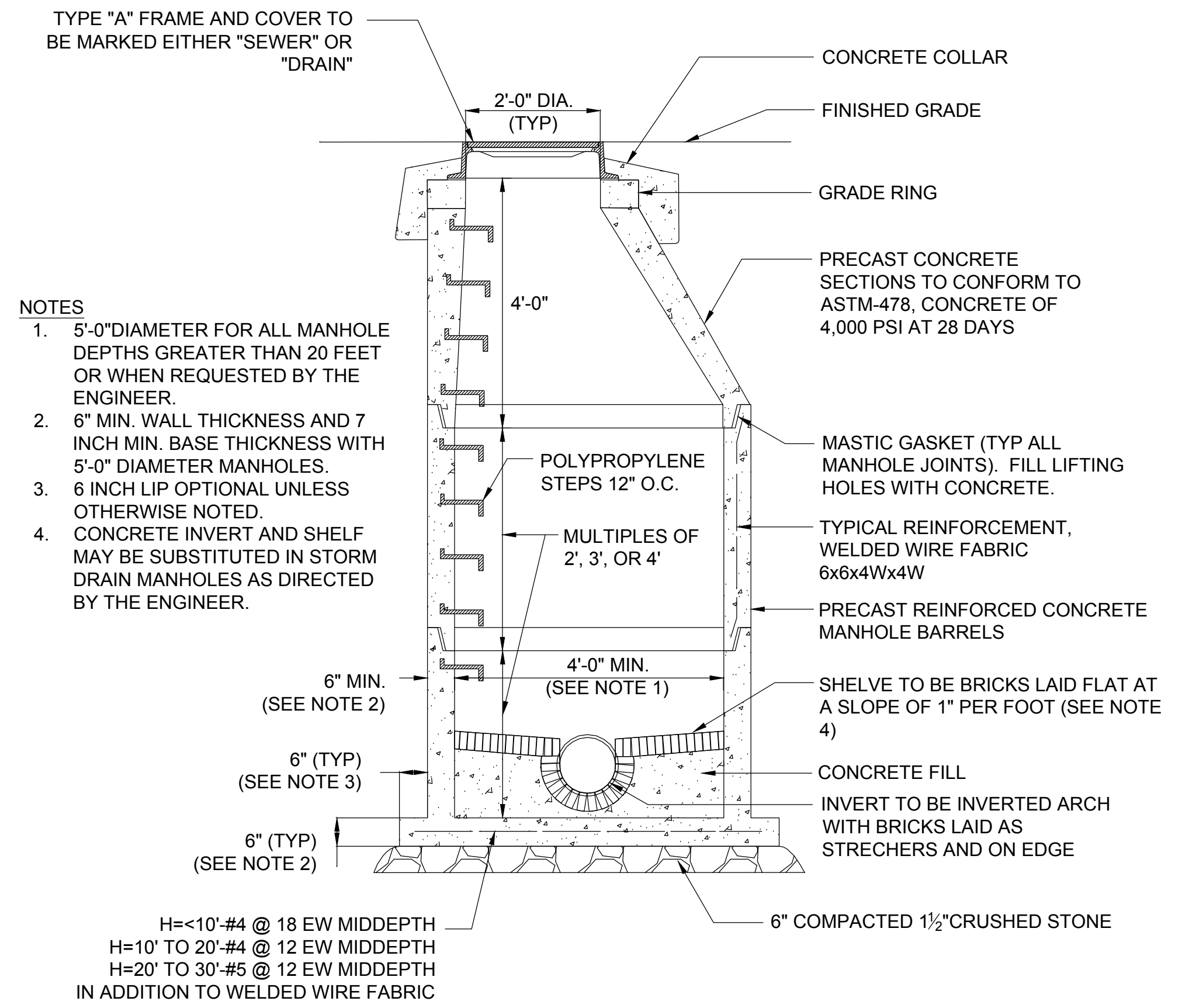


**6 LOAM AND SEED**  
SCALE: N.T.S.



- NOTE:**
1. CONCRETE: 4500 PSI MIN. AFTER 28 DAYS
  2. ALL REINFORCEMENT PER ASTM C1227-93
  3. SHALL BE CAPABLE OF BEING HS-20 LOADED

**7 PRECAST TRANCH DRAIN**  
SCALE: N.T.S.

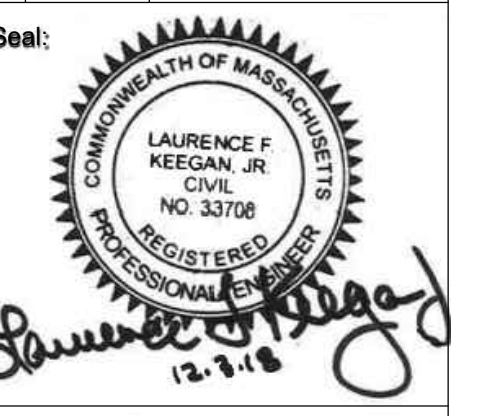


- NOTES**
1. 5'-0" DIAMETER FOR ALL MANHOLE DEPTHS GREATER THAN 20 FEET OR WHEN REQUESTED BY THE ENGINEER.
  2. 6" MIN. WALL THICKNESS AND 7 INCH MIN. BASE THICKNESS WITH 5'-0" DIAMETER MANHOLES. 6 INCH LIP OPTIONAL UNLESS OTHERWISE NOTED.
  3. CONCRETE INVERT AND SHELF MAY BE SUBSTITUTED IN STORM DRAIN MANHOLES AS DIRECTED BY THE ENGINEER.

**5 PRECAST CONCRETE MANHOLE**  
SCALE: N.T.S.

Revisions:

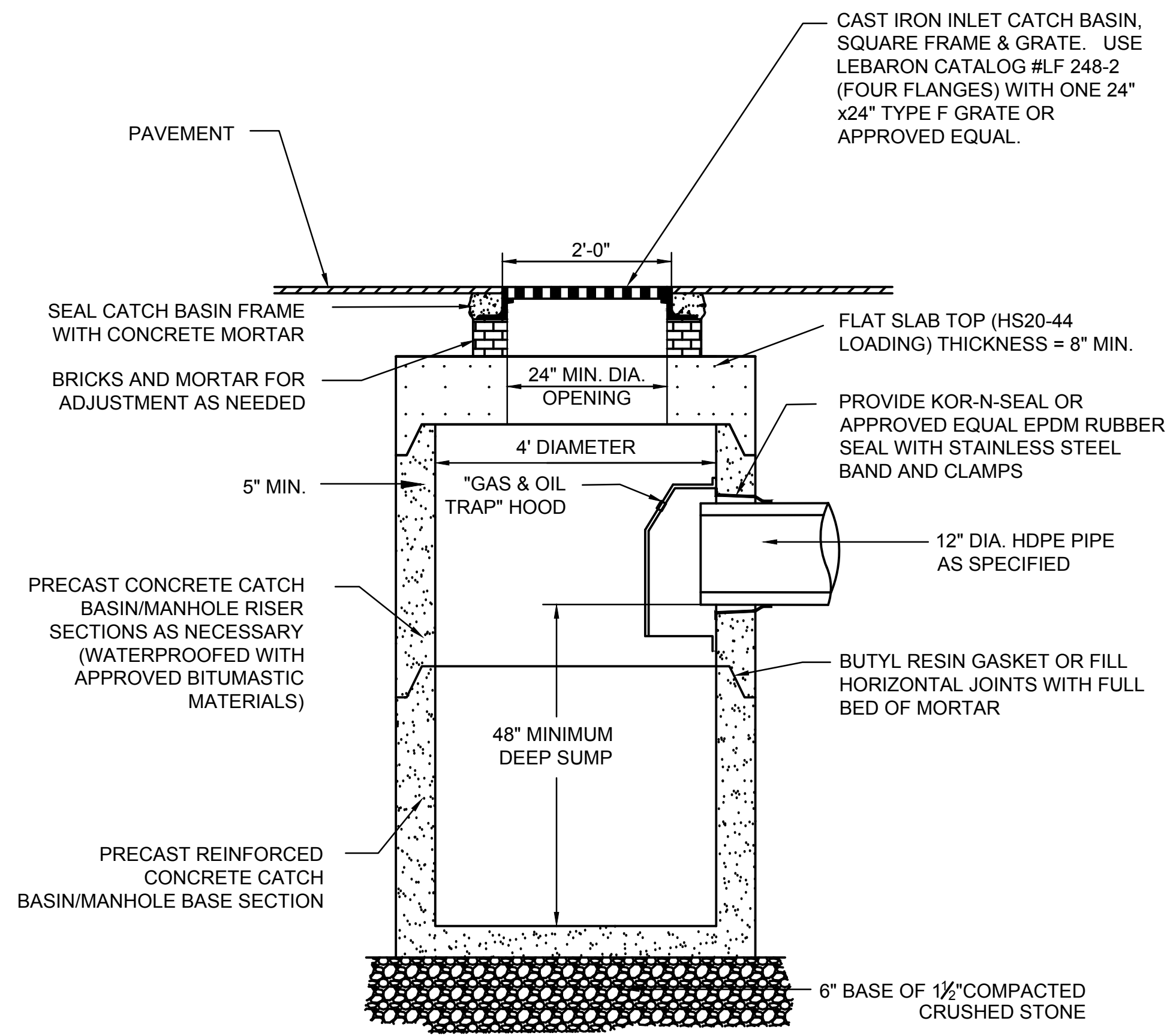
Rev	Date	Description



CONSTRUCTION DOCUMENTS

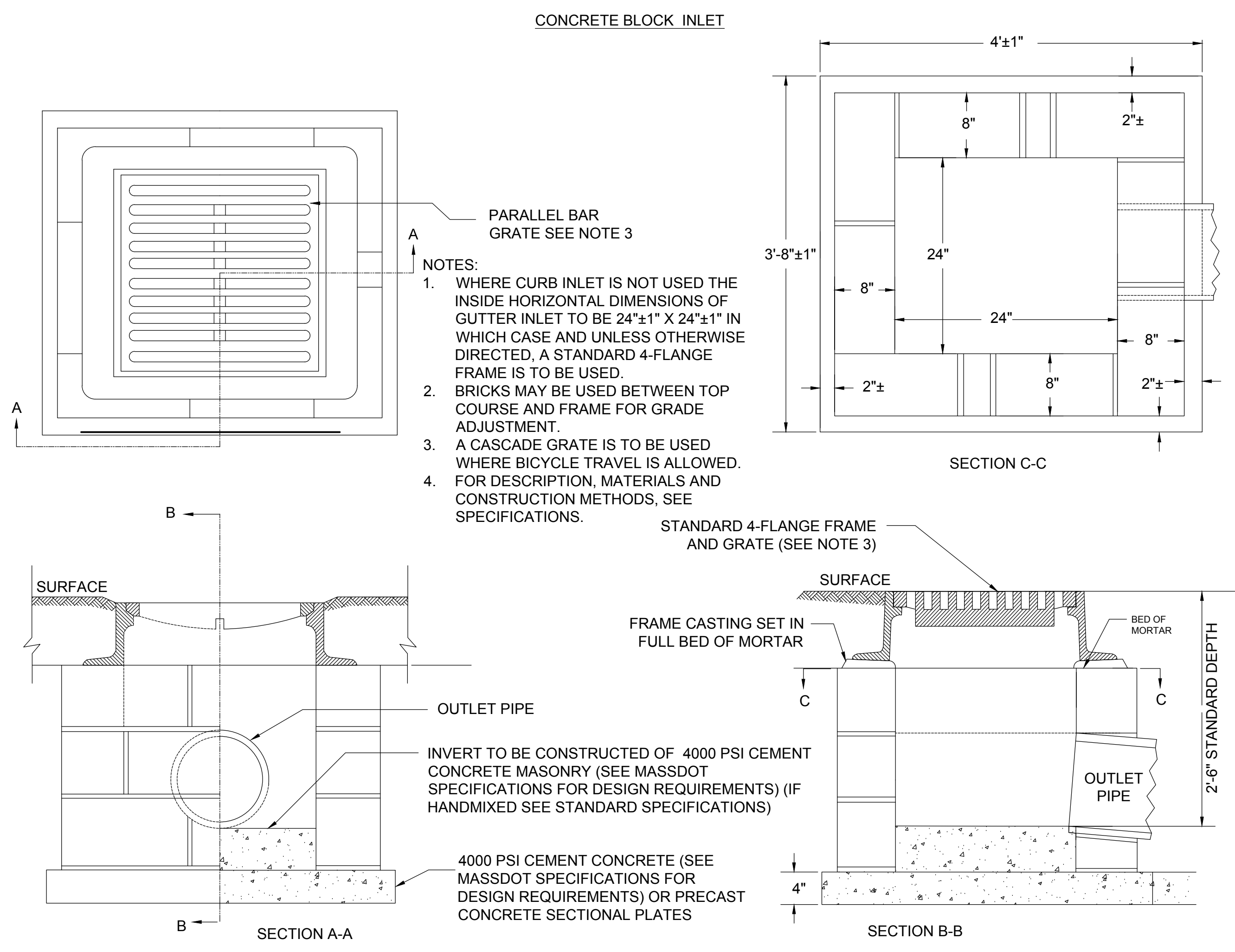
Date: 12/05/18  
Scale: N.T.S.  
Drawn By: NAP  
Reviewed By: AKP  
Checked By: DLG  
Approved By: LFK

Drawing Title:  
**DETAILS**



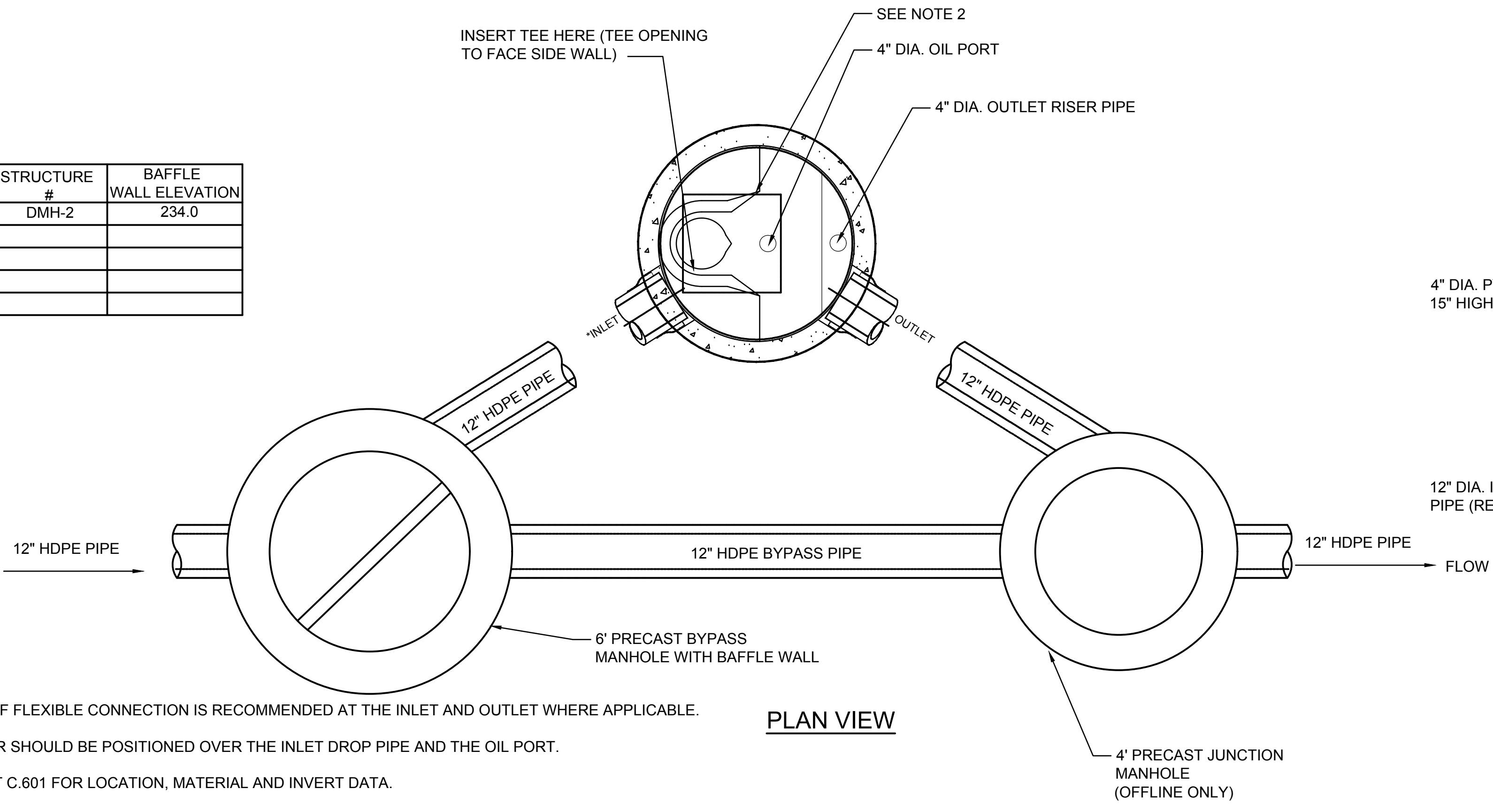
NOTE: FOR DOUBLE CATCH BASINS, STRUCTURE SHALL BE 6' IN DIAMETER.

**1** STANDARD CATCH BASIN  
SCALE: N.T.S.



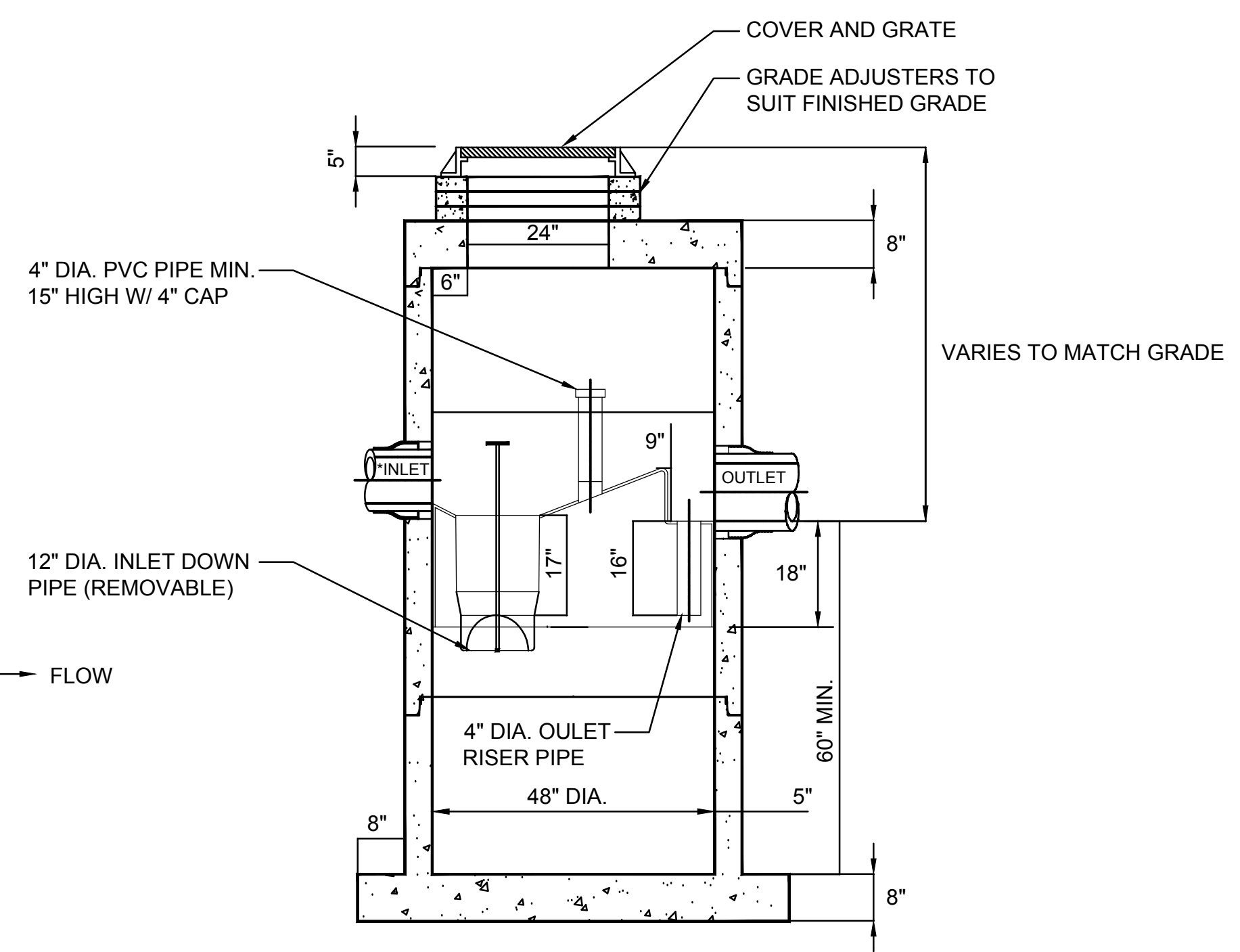
**3** BLOCK INLET DETAIL  
SCALE: N.T.S.

STRUCTURE #	BAFFLE WALL ELEVATION
DMH-2	234.0



- NOTES:
1. THE USE OF FLEXIBLE CONNECTION IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
  2. THE COVER SHOULD BE POSITIONED OVER THE INLET DROP PIPE AND THE OIL PORT.
  3. SEE SHEET C.601 FOR LOCATION, MATERIAL AND INVERT DATA.

PLAN VIEW



SECTION VIEW

**2** STORMWATER TREATMENT UNIT  
SCALE: N.T.S.

North:

Revisions:

Rev	Date	Description

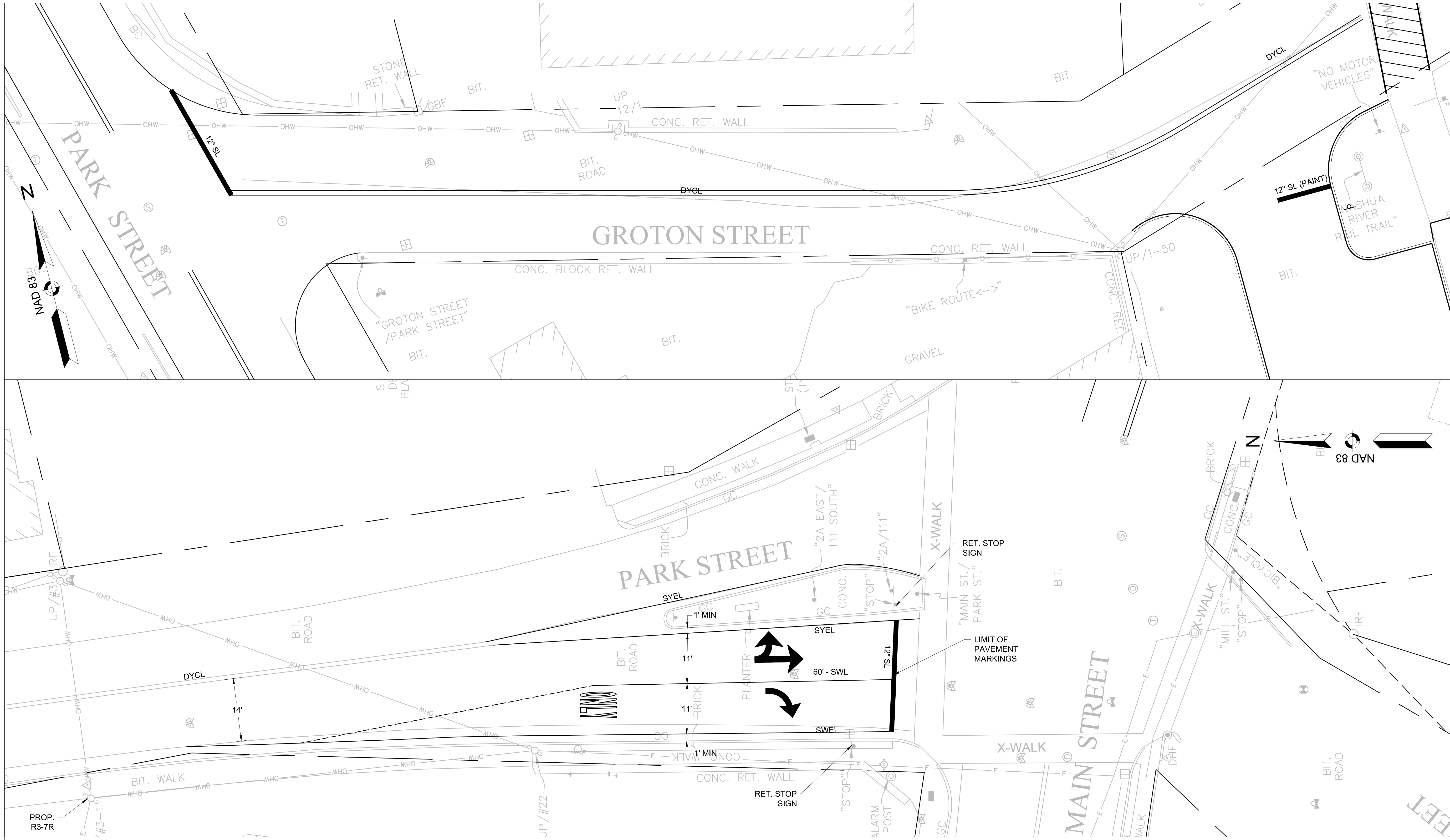
Seal:  
  
12.7.18

CONSTRUCTION DOCUMENTS

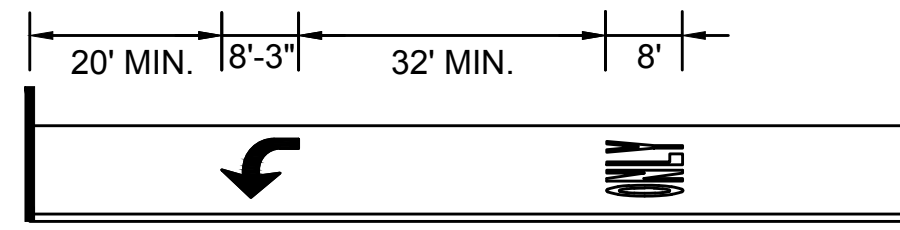
Date: 12/05/18  
Scale: N.T.S.  
Drawn By: NAP  
Reviewed By: AKP  
Checked By: DLG  
Approved By: LFK

Drawing Title:  
**DETAILS**






- NOTES:**
1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS.
  2. ERECT ALL SIGNS IN ACCORDANCE WITH THE LATEST "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AND "MASSDOT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS", DATED 1990.
  3. ALL EXISTING SIGNS AND SIGN POSTS SHALL BE REMOVED AND RESET UNLESS OTHERWISE NOTED.
  4. NO SIGN SHALL OVERHANG THE CURBLINE. SIGNS TO BE MOUNTED NEAR THE CURB LINE SHALL HAVE 1' MINIMUM LATERAL OFFSET FROM THE EDGE OF THE SIGN PANEL TO THE CURBLINE.
  5. ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED PAVEMENT MARKING SHALL BE REMOVED.
  6. PROPOSED PAVEMENT MARKINGS (LEGENDS, SYMBOLS & ARROWS) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND MASSDOT 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS.
  7. ALL TRAFFIC RELATED LINWORK AND EMBLEMS SHALL CONSIST OF THERMOPLASTIC. ALL PAVEMENT MARKINGS ARE 6" UNLESS OTHERWISE NOTED.



PAVEMENT ARROW AND LEGEND DETAIL  
NOT TO SCALE

Project:  
  
 MONTAQUSETT REGIONAL TRANSIT AUTHORITY  
 AYER COMMUTER RAIL  
 PARKING FACILITY  
 AYER, MA

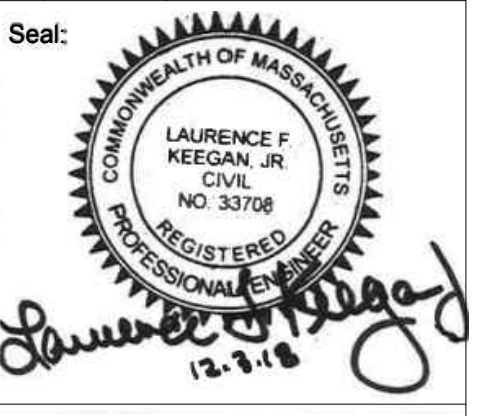
Weston & Sampson  
 100 Farnborough Boulevard Suite 200  
 Farnborough, MA 01434  
 (603) 688-3300 (978) 688-3300  
 www.westonandsampson.com

Consultants:  
  
 500 Townshill Lane Rd. Suite 100,  
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 http://www.timhaahs.com

North:  


Revisions:

Rev	Date	Description

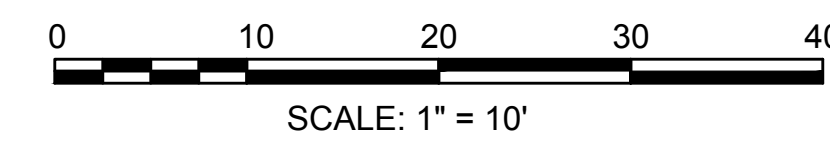
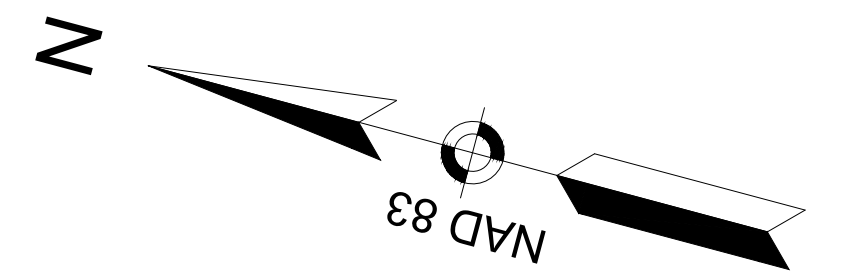


CONSTRUCTION DOCUMENTS

Date: 12/05/18  
 Scale: 1:10  
 Drawn By: NAP  
 Reviewed By: AKP  
 Checked By: LFK  
 Approved By: LFK


Drawing Title:  
**TRAFFIC PLANS**

Sheet Number:  
**C10.01**




**NOTES:**

1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS.
2. ERECT ALL SIGNS IN ACCORDANCE WITH THE LATEST "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AND "MASSDOT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS", DATED 1990.
3. ALL EXISTING SIGNS AND SIGN POSTS SHALL BE REMOVED AND RESET UNLESS OTHERWISE NOTED.
4. NO SIGN SHALL OVERHANG THE CURBLINE. SIGNS TO BE MOUNTED NEAR THE CURB LINE SHALL HAVE 1' MINIMUM LATERAL OFFSET FROM THE EDGE OF THE SIGN PANEL TO THE CURBLINE.
5. ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED PAVEMENT MARKING SHALL BE REMOVED.
6. PROPOSED PAVEMENT MARKINGS (LEGENDS, SYMBOLS & ARROWS) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND MASSDOT 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS.
7. ALL TRAFFIC RELATED LINEWORK AND EMBLEMS SHALL CONSIST OF THERMOPLASTIC. ALL PAVEMENT MARKINGS ARE 6" UNLESS OTHERWISE NOTED.

Project:  
  
 MONTAUCHSETT REGIONAL TRANSIT AUTHORITY  
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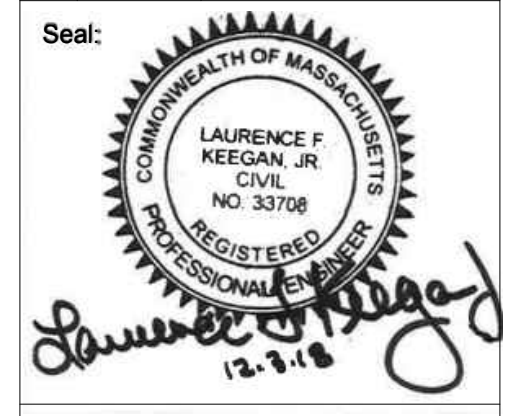
Consultants:  
  
 100 Falmouth Boulevard Suite 200  
 Falmouth, MA 02040  
 (508) 698-3300 (508) 698-3300  
 www.westonandsampson.com

Consultants:  
  
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 Westfield, MA 01085  
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 http://www.timhaahs.com

North:

Revisions:

Rev	Date	Description



CONSTRUCTION DOCUMENTS

Date: 12/05/18  
 Scale: 1:10  
 Drawn By: NAP  
 Reviewed By: AKP  
 Checked By: LFK  
 Approved By: LFK

Drawing Title:  
**TRAFFIC PLANS**  
 Sheet Number:  
**C10.02**

**1.0 - GENERAL**

- THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS. REFER TO CIVIL, ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR LOCATION, DIMENSIONS, AND DETAILS OF OPENINGS, SLEEVES, EMBEDMENTS, INSERTS, PADS, CURBS, DEPRESSIONS, ANCHOR BOLTS, AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR CHECKING, COORDINATING AND VERIFYING ALL DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY DISCREPANCY TO THE ARCHITECT AND ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IN THE FIELD THE EXISTENCE AND LOCATION OF OVERHEAD, BURIED AND/OR EMBEDDED UTILITIES, AND DETERMINING LOCATIONS OF ALL EMBEDDED MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS AFFECTED BY THE WORK OF THIS CONTRACT.
- ALL WORK IS TO CONFORM WITH THE FOLLOWING CODES AND STANDARDS:
  - (A) "780 CMR: MASSACHUSETTS AMENDMENTS" - 9TH EDITION (MSBC)
  - (B) INTERNATIONAL BUILDING CODE, (IBC 2015)
  - (C) "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" - AMERICAN CONCRETE INSTITUTE (ACI 318)
  - (D) "MANUAL OF STEEL CONSTRUCTION" - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC 360)
  - (E) "STRUCTURAL WELDING CODE - STEEL" - AMERICAN WELDING SOCIETY (AWS D1.1)
  - (F) "PCI DESIGN HANDBOOK" - PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)
  - (G) "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" - AMERICAN SOCIETY OF CIVIL ENGINEERS, (ASCE 7-10)

FOR ADDITIONAL CODES AND STANDARDS REFER TO SPECIFICATIONS.

- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF UNANTICIPATED CONDITIONS THAT MAY BE UNCOVERED DURING DEMOLITION AND CONSTRUCTION.
- PERMANENT STRUCTURAL ELEMENTS TO BE DESIGNED IN ACCORDANCE WITH PERFORMANCE SPECIFICATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
  - (A) MISC. ARCH COMPONENT SEISMIC SUPPORTS
  - (B) MISC. MECHANICAL AND ELECTRICAL COMPONENT AND SYSTEM SEISMIC SUPPORTS
- FOR PERFORMANCE DESIGN REQUIREMENTS OF ELEMENTS LISTED ABOVE, REFER TO ADDITIONAL NOTES ON THESE SHEETS AND IN THE TECHNICAL SPECIFICATIONS. ALL DESIGN SUBMITTAL DRAWINGS AND CALCULATIONS SHALL BE CERTIFIED, SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS.
- DETAILS AND NOTES SHOWN ON STRUCTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE BY CONTRACT DOCUMENTS. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR LIKE CONDITIONS AS DETERMINED BY THE ENGINEER.
- IN ACCORDANCE WITH SPECIFICATION SECTION 01 45 23, TESTING AND INSPECTION OF STRUCTURAL WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COSTS FOR TESTING AND INSPECTIONS WILL BE PAID BY THE OWNER. PROVIDE TEST RESULTS TO THE ENGINEER IN A TIMELY MANNER.
- THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL REQUIRED SHORING AND TEMPORARY BRACING TO RESIST FORCES ON THE STRUCTURE THROUGHOUT THE CONSTRUCTION PERIOD.

**2.0 - CAST IN PLACE CONCRETE**

- CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-05) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301-99).
- CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED AND PLACED IN THE PRESENCE OF A REPRESENTATIVE OF AN APPROVED TESTING AGENCY.
- UNLESS NOTED OTHERWISE, CONCRETE SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:
  - (A) ALL STRUCTURAL CONCRETE: 4500 PSI
  - (B) EXTERIOR WALKS AND SLABS: 5000 PSI
- ALL PERMANENTLY EXPOSED VERTICAL AND HORIZONTAL CONCRETE SURFACES SHALL BE TREATED OR SEALED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- CONCRETE WORK SHALL BE COORDINATED WITH ALL METAL BUILDINGS, ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL WORK, AND ALL EQUIPMENT. THE CONTRACTOR SHALL VERIFY INSTALLATION AND LOCATIONS OF ALL EMBEDDED ITEMS INCLUDING BUT NOT LIMITED TO INSERTS, ANCHOR BOLTS, DOWELS, BLOCKOUTS, SLEEVES, EMBEDDED PIPING, AND EMBEDDED CONDUIT PRIOR TO CONCRETE PLACEMENT.
- SEALANT FOR CONTROL/CONTRACTION JOINTS AND SAW CUT JOINTS SHALL BE SIKADUR 51 MANUFACTURED BY SIKA OR AN APPROVED EQUAL.
- CONCRETE EXPOSED TO WEATHER (FREEZE-THAW CONDITIONS) IN THE FINISHED PROJECT SHALL BE AIR ENTRAINED PER SPECIFICATIONS REQUIREMENTS.
- A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN ADJACENT CONCRETE PLACEMENTS.
- CONCRETE SLABS SHALL BE PLACED SO THAT THE SLAB THICKNESS IS AT NO POINT LESS THAN THAT INDICATED ON THE DRAWINGS.
- PROVIDE A 3/4" CHAMFER ON ALL VERTICAL AND HORIZONTAL CORNERS EXPOSED TO VIEW UNLESS NOTED OTHERWISE.
- ALL CONCRETE SHALL BE WATER CURED UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
- NON-SHRINK, NON-METALLIC, GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 7,500 PSI (ASTM C942) AND A MINIMUM BOND STRENGTH OF 2,000 PSI AT 28-DAYS (ASTM C882). GROUT MAY BE EXTENDED WITH COARSE AGGREGATE PER THE MANUFACTURER'S RECOMMENDATIONS.

**3.0 - CAST IN PLACE CONCRETE REINFORCEMENT**

- REINFORCEMENT DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO "ACI DETAILING MANUAL" - SP-66, "CRSI MANUAL OF STANDARD PRACTICE".
- STEEL REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL CONFORM TO THE FOLLOWING:
  - (A) BARS, TIES, AND STIRRUPS: ASTM A615 GRADE 60
  - (B) WELDED WIRE FABRIC: ASTM A185, FLAT SHEETS
- REINFORCING STEEL SHALL BE UNCOATED AND DEFORMED.
- MINIMUM CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT, UNLESS REQUIRED FOR FIRE PROTECTION OR NOTED OTHERWISE, SHALL BE AS FOLLOWS:
  - (A) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"
  - (B) CONCRETE EXPOSED TO EARTH OR WEATHER:
    - (1) NO. 6 THRU NO. 18 BARS: 2"
    - (2) NO. 5 BAR, W#1 OR D#1 WIRE AND SMALLER: 2"
  - (C) SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
    - (1) SLABS, WALLS, JOISTS:
      - (a) NO. 14 AND NO. 18 BARS: 2"
      - (b) NO. 11 BARS AND SMALLER: 2"
    - (2) BEAMS, COLUMNS:
      - (a) PRIMARY REINFORCEMENT: 2-1/2"
      - (b) TIES, STIRRUPS, SPIRALS: 2"
- REINFORCING STEEL SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS, CORNERS, AND INTERSECTIONS UNLESS OTHERWISE NOTED. REINFORCING SHALL BE LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS, UNLESS OTHERWISE NOTED.
- FOR REINFORCING STEEL SPLICE LAP LENGTHS REFER TO THE TABLE PROVIDED UNLESS OTHERWISE INDICATED.
- MECHANICAL SPLICES SHALL BE PERMITTED SUBJECT TO APPROVAL BY THE ENGINEER. MECHANICAL SPLICES SHALL DEVELOP AT LEAST 12% PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR. NO WELDED CONNECTIONS ARE PERMITTED.
- WELDED WIRE FABRIC SHALL BE LAPPED (1) SQUARE PLUS (2) INCHES WHERE REQUIRED AND SHALL BE WIRED TOGETHER AT ALL LAPS. WWF SHALL BE SUPPORTED BY CHAIRS AND/OR CARRYING BARS PRIOR TO CONCRETE PLACEMENT.
- REINFORCEMENT SHALL NOT BE TACK WELDED.
- NOTIFY THE TESTING LAB AND ENGINEER A MINIMUM OF 48 HOURS PRIOR TO SCHEDULED CONCRETE PLACEMENT IN ORDER TO ACCOMMODATE INSPECTION OF REINFORCEMENT AND CONCRETE TESTING. NO CONCRETE SHALL BE PLACED WITHIN 48 HOURS OF SUCH NOTIFICATION.
- WHERE REINFORCEMENT IS NOT SHOWN ON DRAWINGS, PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE DETAILS AS DETERMINED BY THE ARCHITECT AND ENGINEER. IN NO CASE SHALL REINFORCEMENT BE LESS THAN THE MINIMUM REINFORCEMENT PERMITTED BY THE CODES, NOR LESS THAN THE FOLLOWING:
  - (A) BEAM STIRRUPS: #3 @ 12"
  - (B) BEAM STIRRUP SUPPORTS: #5 AT EACH STIRRUP BEND
  - (C) FACE REINFORCEMENT IN BEAMS OR PORTIONS OF BEAMS #4 @ 12" EF.
  - (D) STRUCTURAL SLABS: .0020 GROSS CONCRETE AREA IN EACH DIRECTION
  - (E) CONCRETE WALLS: .0025 x GROSS CONCRETE AREA IN EACH DIRECTION
- WHERE REINFORCEMENT IS REQUIRED IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTIONS APPLIES.
- WHERE THERE IS CONFLICT BETWEEN LOCATIONS OF COLUMN VERTICAL BARS AND BEAM HORIZONTAL BARS, THE COLUMN BARS SHALL REMAIN IN THEIR DESIGNATED POSITIONS AND BEAM BAR LOCATIONS SHALL BE ADJUSTED.
- DOWELS SHALL MATCH BAR SIZE, NUMBER AND SPACING, UNLESS NOTED OTHERWISE.

**4.0 - PRECAST CONCRETE**

- THE PRECAST CONCRETE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN OF PRECAST/PRESTRESSED CONCRETE MEMBERS, COMPONENTS, CONNECTIONS, AND ASSEMBLIES. DESIGN SHALL INCLUDE THE DEAD LOADS, LIVE LOADS, SNOW LOADS, WIND LOADS, AND SEISMIC LOADS AS INDICATED IN CONTRACT DOCUMENTS OR AS REQUIRED BY THE MASSACHUSETTS STATE BUILDING CODE, WHICHEVER IS MORE STRINGENT. DESIGN SHALL ALSO CONSIDER VOLUME CHANGES ANTICIPATED DURING THE LIFE OF THE STRUCTURE.
- FABRICATION, TRANSPORTATION, AND ERECTION OF THE PRECAST/PRESTRESSED MEMBERS SHALL BE IN CONFORMANCE WITH THE LATEST PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI) STANDARDS.
- FABRICATION SHALL BE PERFORMED BY A PCI CERTIFIED FABRICATOR.
- ERECTION SHALL BE PERFORMED BY A PCI CERTIFIED ERECTOR.
- PRECAST CONCRETE SHALL HAVE A MAXIMUM WATER-CEMENT RATIO OF 0.45, AND BE AIR ENTRAINED TO 6% +/- 1.5% FOR 3/8" AGGREGATE. PRECAST CONCRETE SHALL HAVE THE FOLLOWING MINIMUM 28-DAY COMPRESSIVE STRENGTHS:
  - (A) DOUBLE TEES AND BEAMS: 5,000 PSI
  - (B) COLUMNS AND WALLS: 6,000 PSI

**5.0 - POST INSTALLED CONCRETE ANCHORS AND REINFORCING DOWELS**

- ADHESIVE ANCHORS AND REINFORCING DOWELS SHALL BE HILTI HIT-HY-200 ADHESIVE ANCHORING SYSTEM OR APPROVED EQUAL.
- EXPANSION ANCHORS SHALL BE HILTI KWIK BOLT TZ EXPANSION ANCHORS OR APPROVED EQUAL.
- INSTALL ANCHORS IN STRICT CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS.
- HOLES SHALL BE THOROUGHLY CLEANED AND DRY PRIOR TO INSTALLING ANCHORS.
- DO NOT DAMAGE EXISTING REINFORCING. LOCATE REINFORCING WITH PROFOMETER OR OTHER MEANS PRIOR TO DRILLING CONCRETE.
- DO NOT INSTALL ANCHORS IN PRESTRESSED PRECAST CONCRETE FRAMING UNLESS APPROVED BY THE ENGINEER IN WRITING.
- ANCHORS INSTALLED OVERHEAD SHALL BE PROOF TESTED BY THE MANUFACTURER'S FIELD ENGINEER OR OTHER APPROVED AGENCY. PROOF TEST A MINIMUM OF 25% OF THE ANCHORS OR (2) TOTAL, WHICHEVER IS GREATER.

**7.0 DESIGN LOADS**

LOADS, LOADING CONDITIONS AND COMBINATIONS SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE 9TH EDITION, IBC 2015 AND ASCE 7-10 AS APPLICABLE. LOADS DESIGNATED BY "PSF" ARE UNIFORM LOADS, THOSE DESIGNATED BY "LB" ARE CONCENTRATED LOADINGS AND SHALL BE APPLIED AS REQUIRED BY THE MSBC.

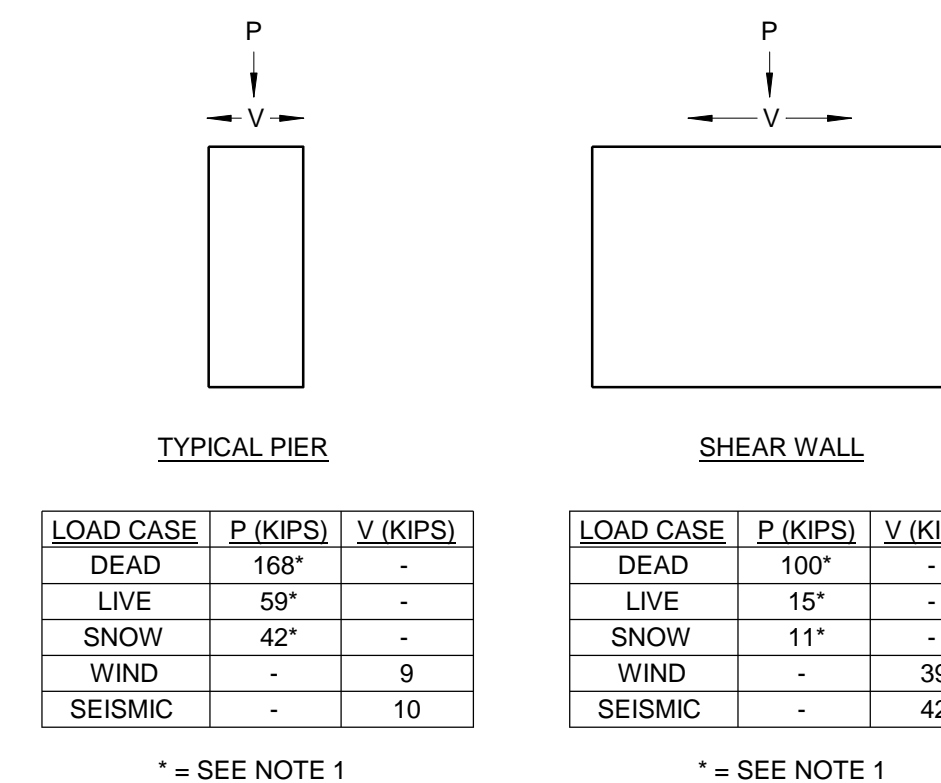
BUILDING OCCUPANCY CATEGORY: II

- DEAD LOADS
  - (A) SELF-WEIGHT OF ALL ATTACHED AND SUSPENDED ELEMENTS, CONSULT APPLICABLE DRAWINGS AND TRADES FOR FURTHER INFORMATION
- LIVE LOADS
  - (A) FLOOR LIVE LOADS
    - (1) GARAGES - PASSENGER VEHICLES: 50 PSF
    - (a) CONCENTRATED LOAD: 3,000 LBS ON 4.5 IN. BY 4.5 IN. AREA
    - (2) STAIRS AND EXITS: 100 PSF
      - (a) CONCENTRATED LOAD ON STAIR TREAD: 300 LBS ON 2 IN. BY 2 IN. AREA
  - (B) ROOF LIVE LOADS
    - (1) CONSTRUCTION: 20 PSF, 300 LB
- ROOF SNOW LOAD
  - (A) GROUND SNOW LOAD, PG: 50 PSF
  - (B) MIN. FLAT ROOF SNOW LOAD, PF: 42 PSF + DRIFT
  - (C) SNOW EXPOSURE FACTOR, CE: 1.0
  - (D) SNOW LOAD IMPORTANCE FACTOR, I: 1.0, II
  - (E) THERMAL FACTOR, CT: 1.2
- WIND DESIGN DATA
  - (A) BASIC WIND SPEED, V: 122 MPH
  - (B) WIND EXPOSURE: B
- EARTHQUAKE DESIGN DATA
  - (A) SEISMIC IMPORTANCE FACTOR, I: 1.0, II
  - (B) MAPPED SPECTRAL RESPONSE ACCELERATIONS, SS, S1: 0.212G, 0.071G
  - (C) SITE CLASS: D
- GEOTECHNICAL INFORMATION
  - (A) REFER TO WESTON & SAMPSON GEOTECHNICAL REPORT DATED 11/21/2017 FOR RECOMMENDATIONS. THE ENGINEER SHALL VERIFY CONDITIONS OF EXISTING SUBGRADE PRIOR TO PLACING CONCRETE.

TENSION DEVELOPMENT & SPLICE LENGTHS FOR BARS, F<sub>c</sub> = 4,000 PSI (PER ACI 12.2.2)

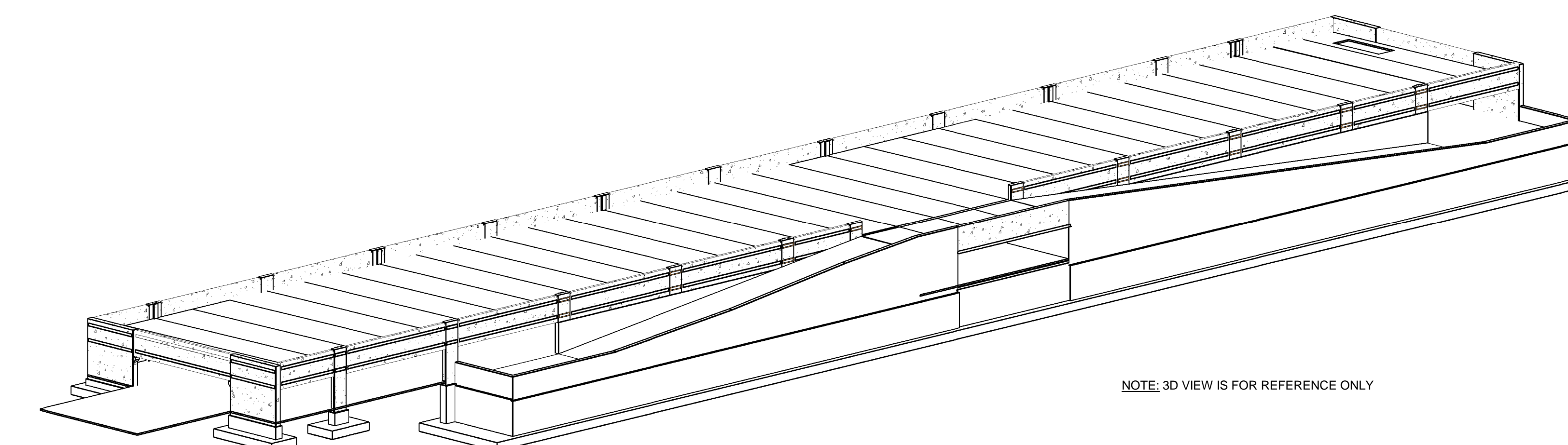
BAR	TOP BARS	OTHER BARS
#3	24	19
#4	32	25
#5	40	31
#6	48	37
#7	70	54
#8	80	62
#9	91	70
#10	102	79
#11	113	87

**1 MINIMUM SPLICE DEVELOPMENT LENGTHS**  
SCALE: 1/2" = 1'-0"



- NOTES:**
- PRECAST CONCRETE DESIGN ENGINEER SHALL VERIFY GRAVITY LOAD MAGNITUDES AND APPLICATION LOCATIONS.
  - SHEAR LOADS (V) ARE ASSUMED TO BE APPLIED AT TOP OF DECK.
  - LOADS SHOWN ARE NOT FACTORED.
  - BASES OF PIERS AND SHEAR WALLS SHALL BE DESIGNED AS FIXED.

**2 LATERAL LOAD DIAGRAM**  
SCALE: 1/8" = 1'-0"



NOTE: 3D VIEW IS FOR REFERENCE ONLY

**3 3D STRUCTURAL VIEW**  
SCALE:

**Project:**

AYER COMMUTER RAIL  
PARKING FACILITY

AYER, MA

**Weston & Sampson**

100 Foxborough Boulevard Suite 250  
Foxborough, MA 02005  
(508) 698-3034 (800) 544-5228  
www.westonandsampson.com

**Consultants:**

550 Township Line Rd. Suite 100  
Blue Bell, PA 19027  
T: 484.882.0200 F: 484.882.0222  
http://www.timhaahs.com

North:

**Revisions:**

Rev	Date	Description

**Seal:**

**CONSTRUCTION DOCUMENTS**

Date: **12/05/18**

Scale: AS NOTED

Drawn By: KMC

Reviewed By: RAC

Checked By: RAC

Approved By: NMS

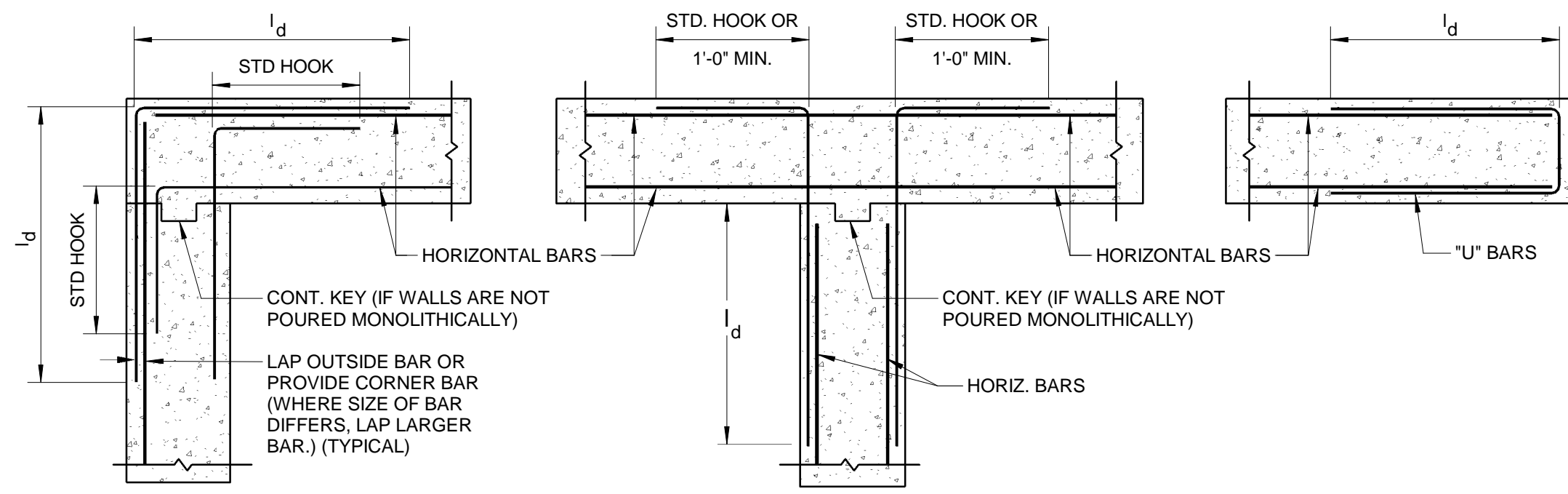
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GENERAL NOTES

Sheet Number:

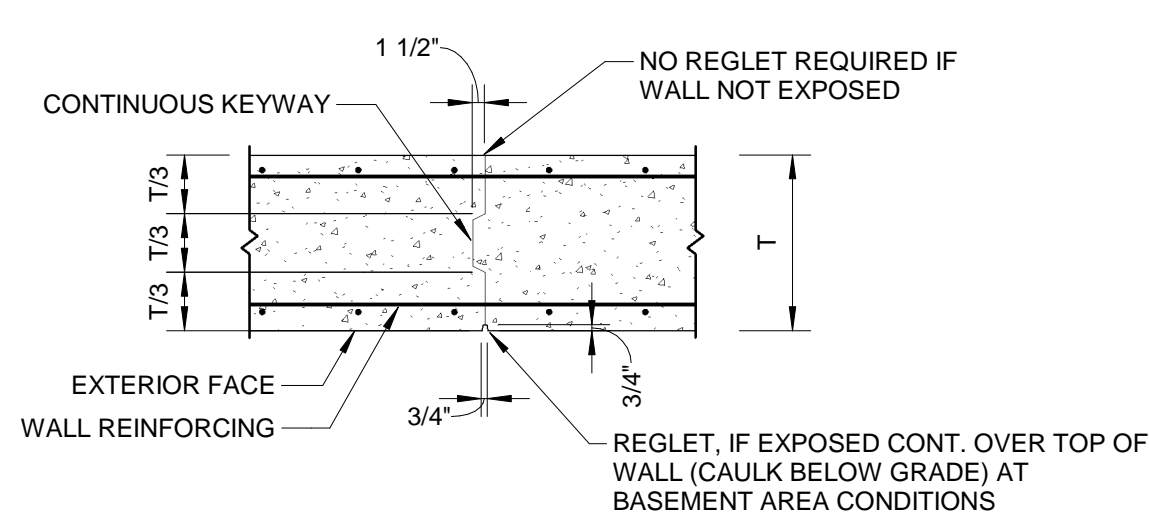
**S0.01**

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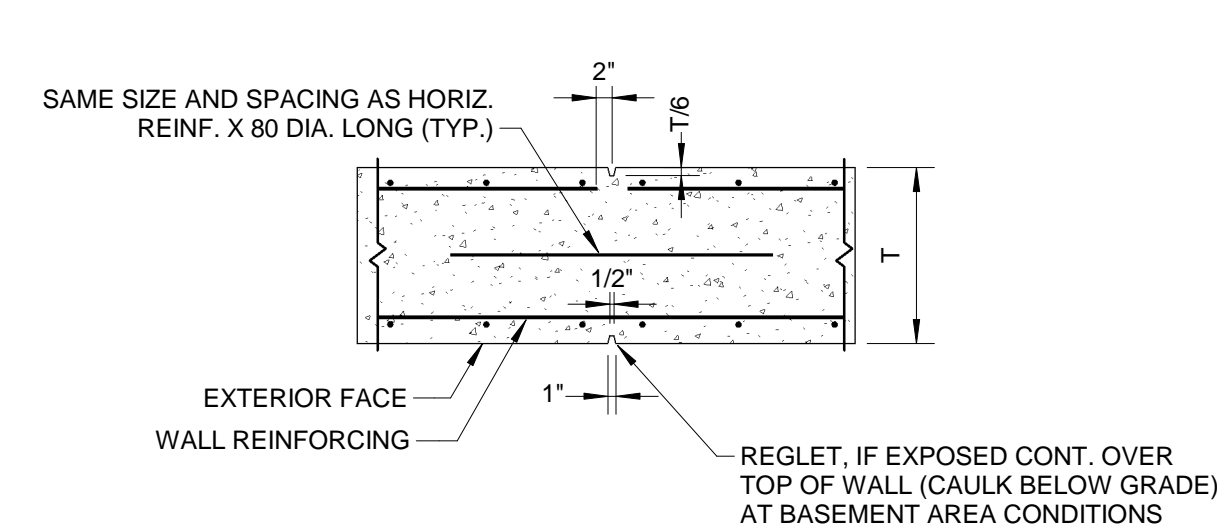
NOTE(S):  
1. VERTICAL BARS NOT SHOWN FOR CLARITY. (TYP.)

1 HORIZONTAL WALL REINFORCING PLAN  
SCALE: 1/2" = 1'-0"



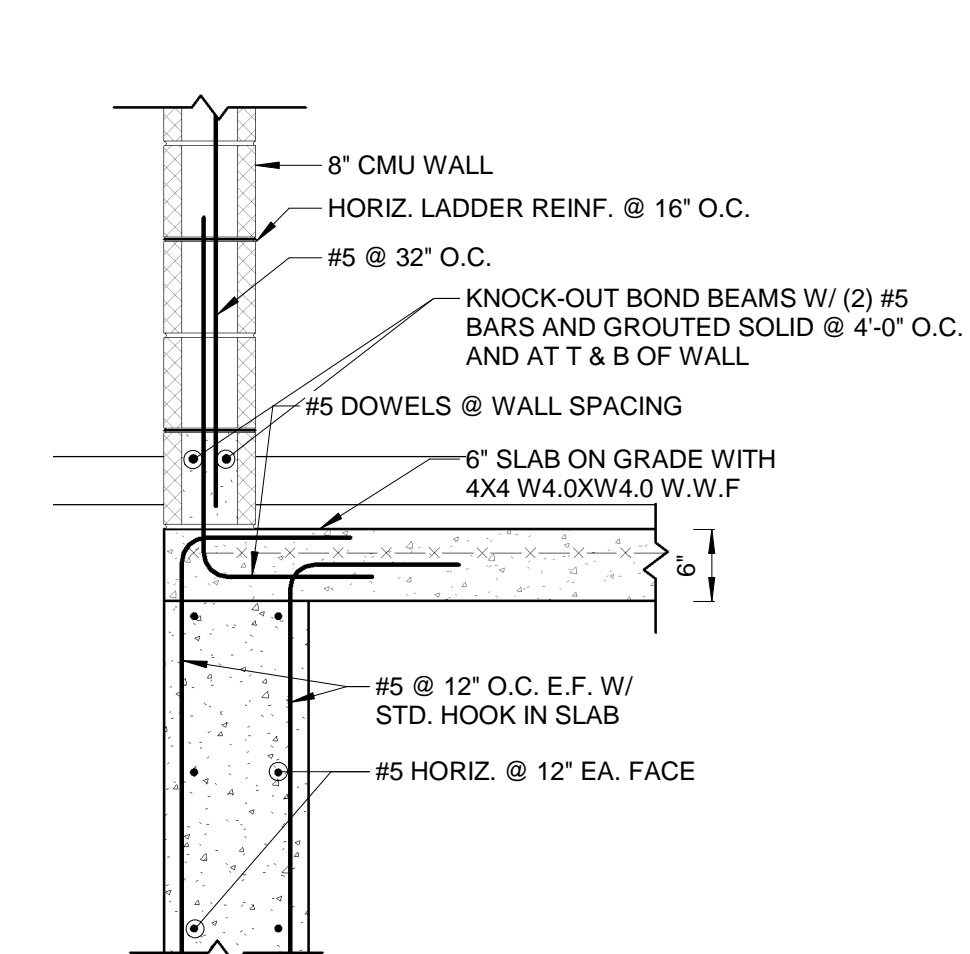
NOTE(S):  
1. CONSTRUCTION JOINTS SHALL HAVE A 60'-0" MAXIMUM SPACING.  
2. DO NOT PLACE A CONSTRUCTION JOINT BELOW A PRECAST SHEAR WALL.

2 TYPICAL VERTICAL CONSTRUCTION JOINT  
SCALE: 1/2" = 1'-0"



NOTE(S):  
1. CONTRACTION/CONTROL JOINT SHALL BE PROVIDED AT MAXIMUM 30'-0" SPACING

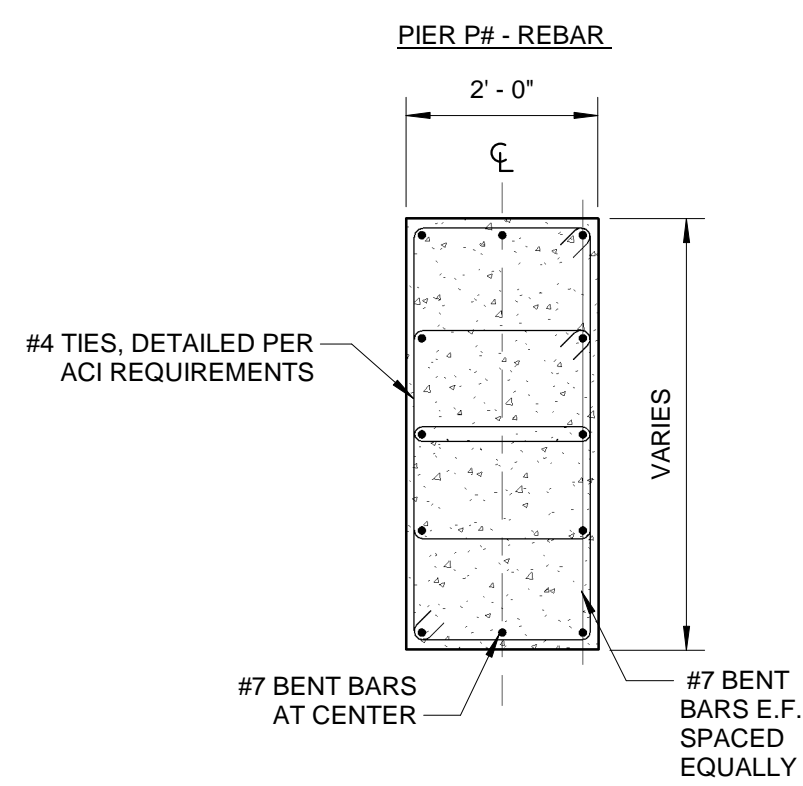
3 TYPICAL WALL CONTROL JOINT  
SCALE: 1/2" = 1'-0"



11 CMU WALL SECTION  
SCALE: 3/4" = 1'-0"

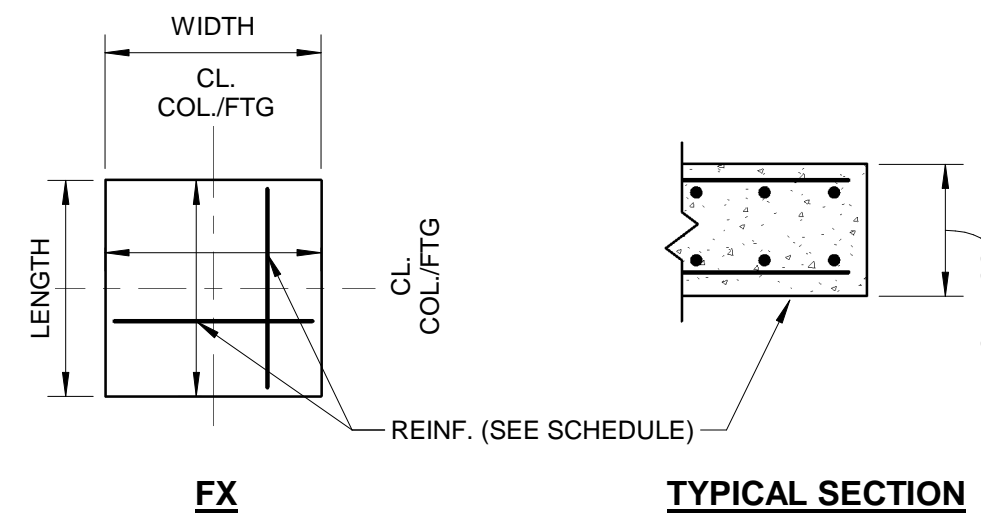
PIER SCHEDULE					
MARK	DIMENSIONS		T.O. PIER ELEVATION	REINFORCEMENT	
	LENGTH	WIDTH		VERTICAL	TIES
P1	4' - 6"	2' - 0"	-1' - 0"	(12) - #8 BENT BARS	(3) - #4 IN TOP 5' BALANCE @ 9' O.C.
P2	15' - 6"	2' - 0"	-1' - 0"	(32) - #8 BENT BARS	(3) - #4 IN TOP 5' BALANCE @ 9' O.C.

FOOTING SCHEDULE						
MARK	DIMENSIONS			REINFORCEMENT		COMMENTS
	WIDTH	LENGTH	THICKNESS	LONG WAY	SHORT WAY	
F12x8	8' - 0"	12' - 0"	24"	(12) #8 EQ. SPACED	(8) #8 EQ. SPACED	#5 @ 12" E.W. TOP
F19x8	8' - 0"	19' - 0"	24"	(19) #8 EQ. SPACED	(8) #8 EQ. SPACED	#5 @ 12" E.W. TOP



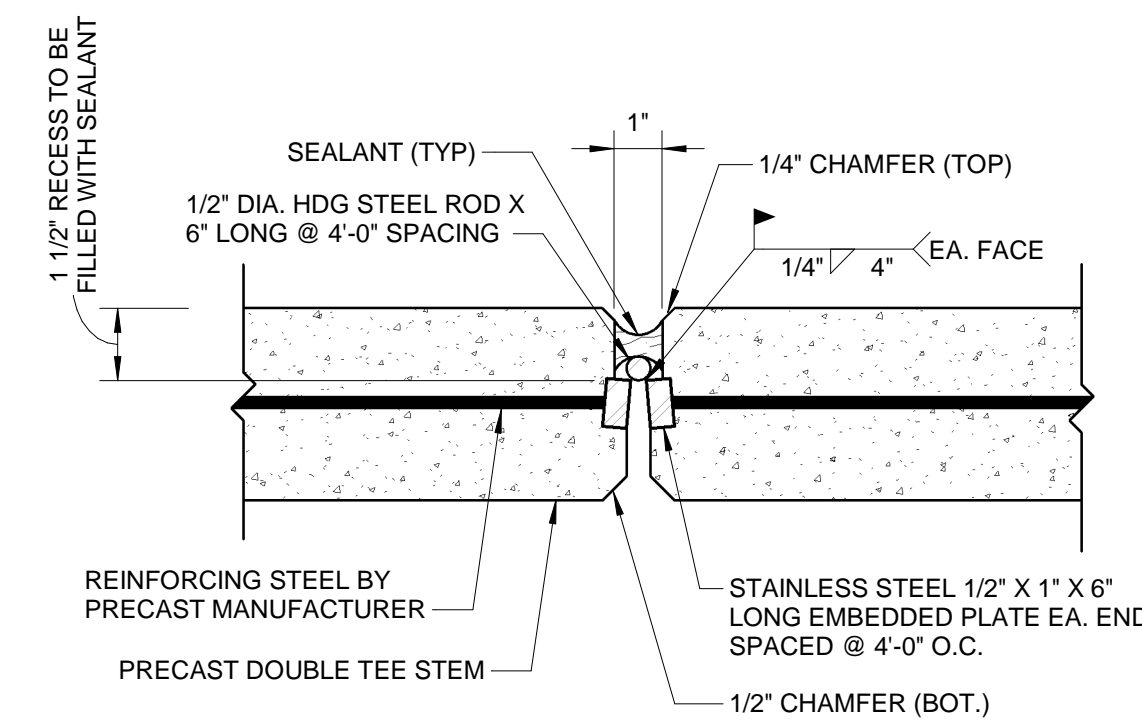
PIER NOTE(S):  
1. FINAL LOCATIONS OF PIERS SHALL BE COORDINATED WITH APPROVED PRECAST CONCRETE SHOP DRAWINGS. PIERS SHALL BE CENTERED BELOW WALL SECTION AT THE TOP OF PIER LEVEL.  
2. PROVIDE WALL DOWELS IN ADDITION TO THE VERTICAL PIER REINFORCING. PIER REINFORCING SHALL BE HOOKED AT THE TOP AND BOTTOM (TYP.)

4 PIER DETAILS  
SCALE: 1/2" = 1'-0"

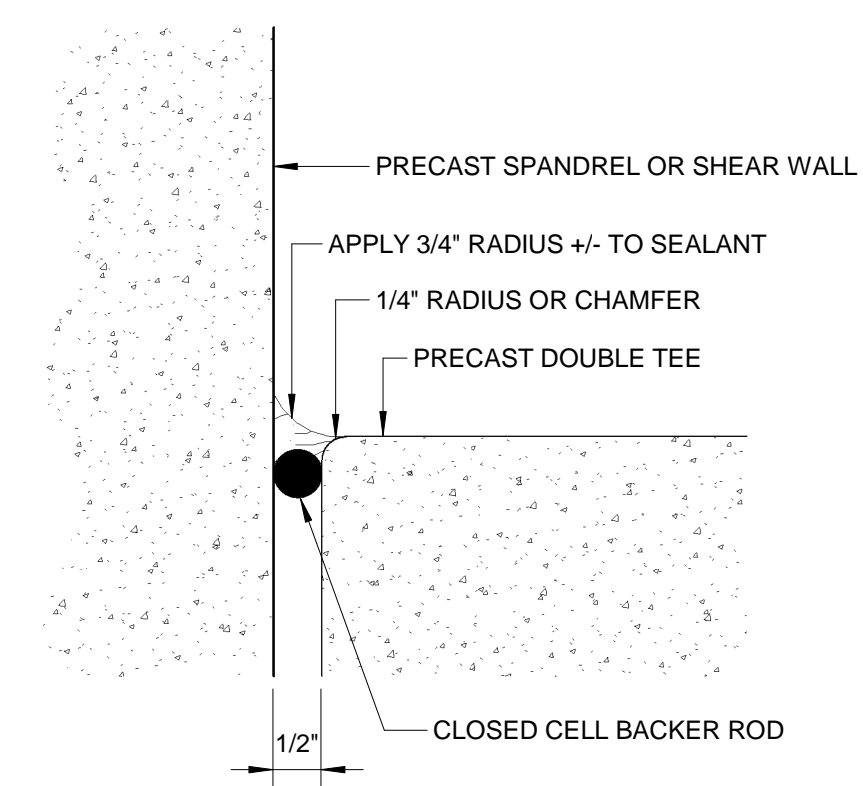


NOTE(S):  
1. SQUARE FOOTINGS SHALL BE CENTERED BELOW COLUMNS U.N.O  
2. WHERE FOOTINGS INTERSECT IN PLAN, FOOTINGS SHALL BE CAST INTEGRAL WITH THE REINFORCING AS SPECIFIED IN THE TABLE ABOVE.  
3. REINFORCING SHALL BE SPACED EQUALLY.

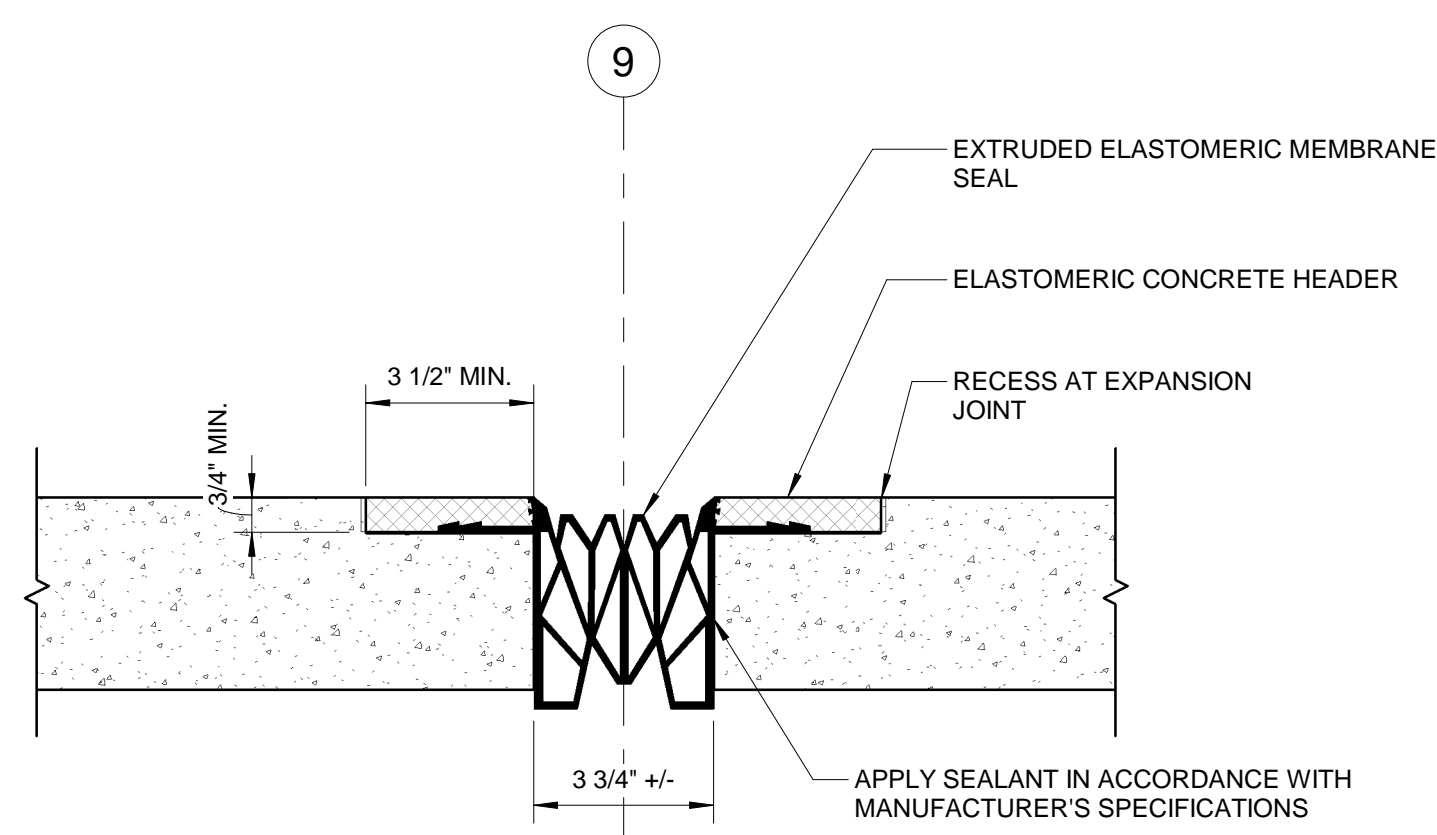
5 FOOTING SCHEDULE (CONVENTIONAL)  
SCALE: 1" = 1'-0"



6 TYPICAL TEE TO TEE FLANGE CONNECTION @ CONNECTOR PLATE  
SCALE: 3" = 1'-0"

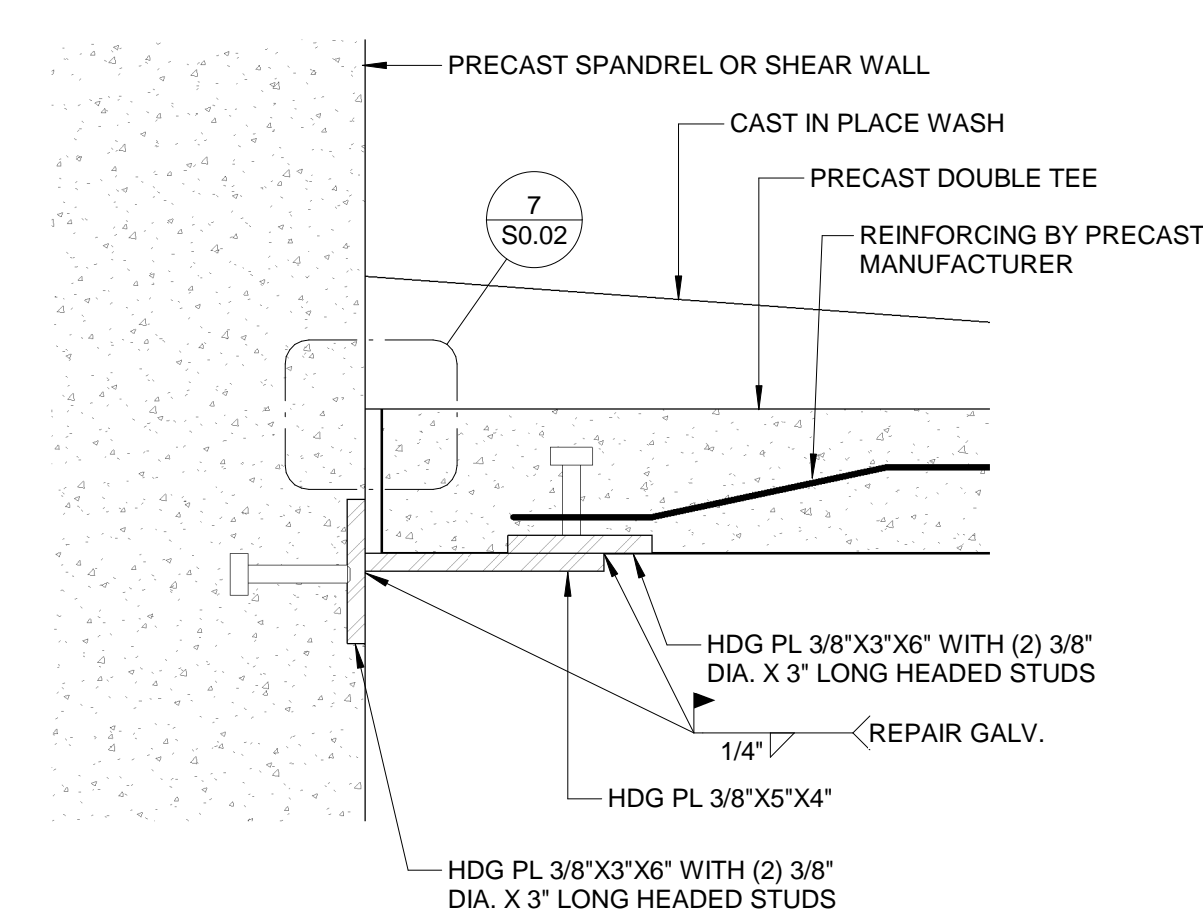


7 TYPICAL BACKER ROD AND SEALANT  
SCALE: 6" = 1'-0"



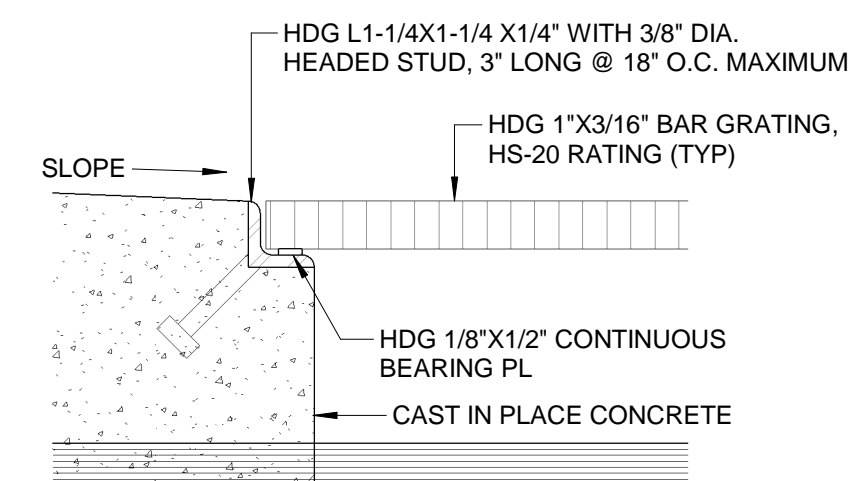
NOTE: SUBMIT EXPANSION JOINT SYSTEM FOR APPROVAL. COORDINATE WITH PRECAST CONCRETE FABRICATION.

8 TYPICAL EXPANSION JOINT DETAIL  
SCALE: 3" = 1'-0"

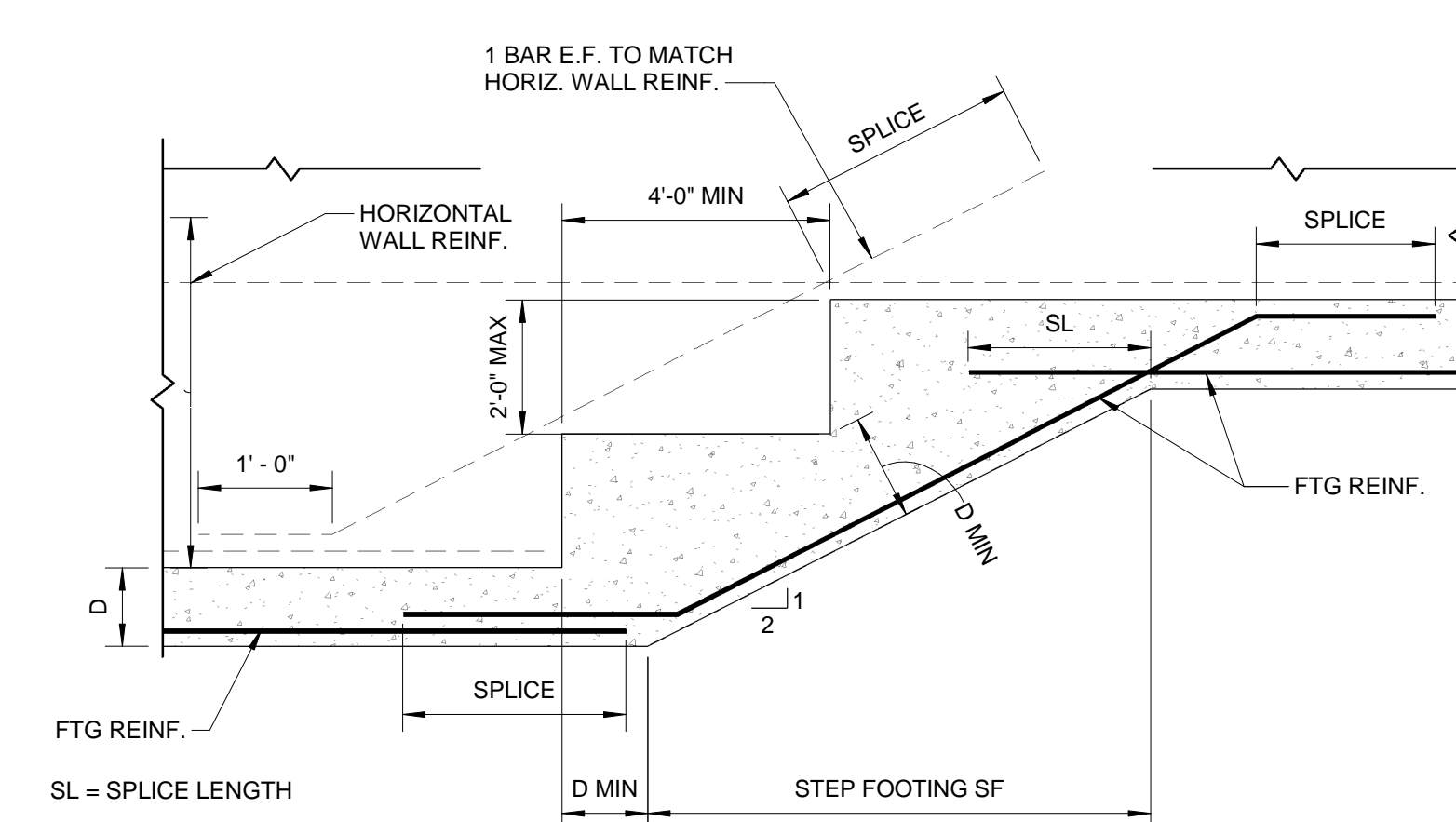


NOTE: SPACE CONNECTORS AT 4'-0" O.C. MAXIMUM, UNLESS OTHERWISE NOTED

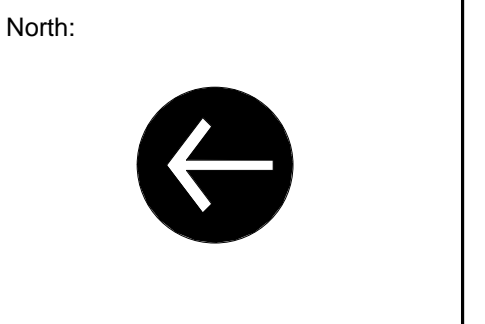
9 TYPICAL TEE FLANGE TO SPANDREL OR WALL CONNECTION  
SCALE: 3" = 1'-0"



10 ENLARGED TRENCH DRAIN DETAIL  
SCALE: 3" = 1'-0"

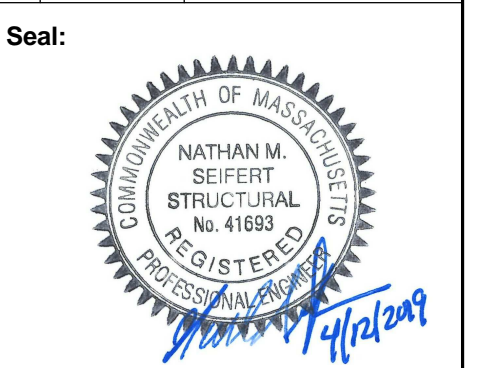


12 STEP FOOTING DETAIL  
SCALE: 3/4" = 1'-0"



Revisions:

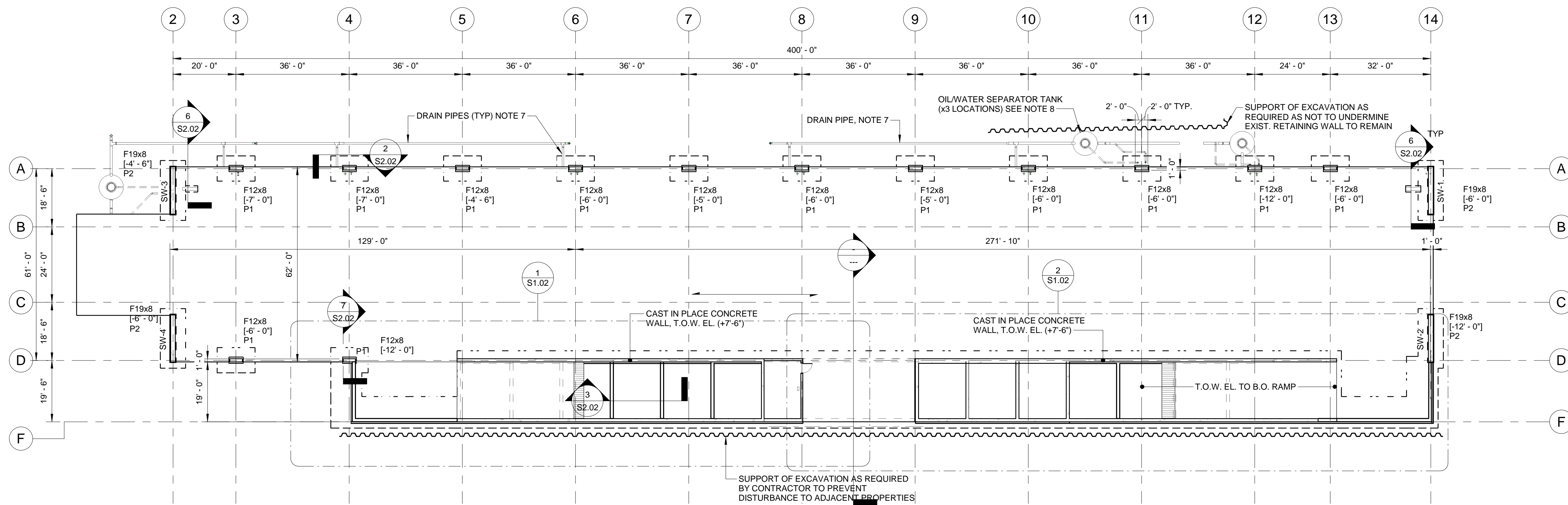
Rev	Date	Description



CONSTRUCTION DOCUMENTS

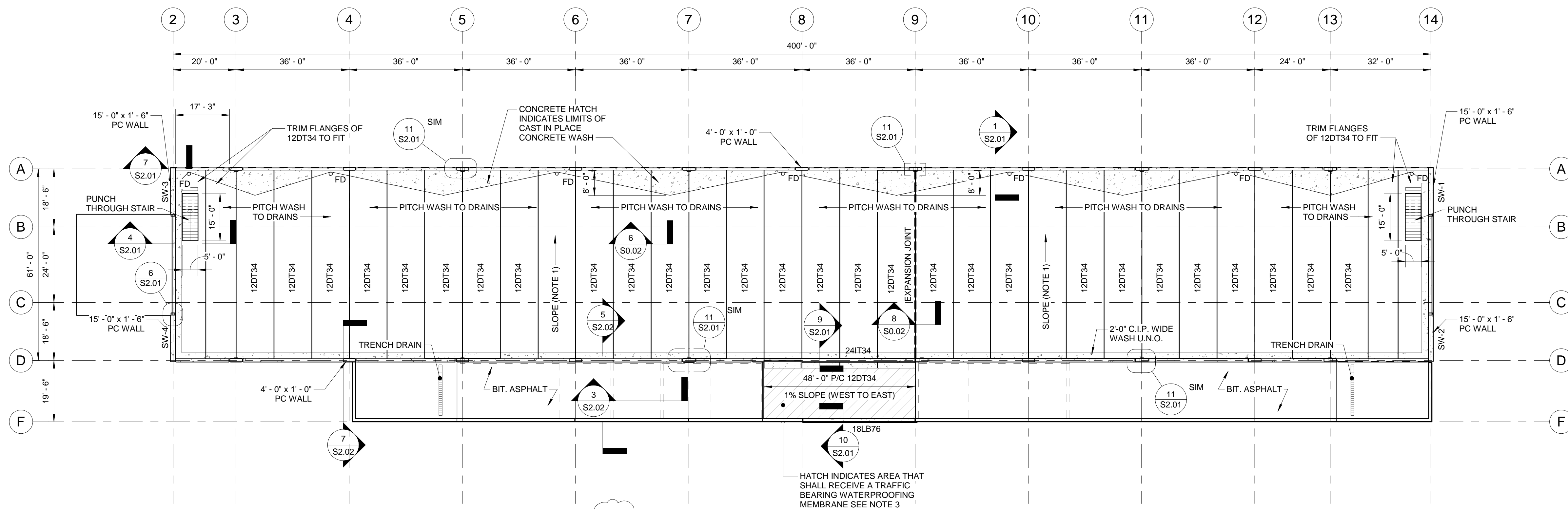
Date: **12/05/18**  
Scale: AS NOTED  
Drawn By: KMC  
Reviewed By: RAC  
Checked By: RAC  
Approved By: NMS

Drawing Title:  
**TYPICAL DETAILS**  
  
Sheet Number:  
**S0.02**  
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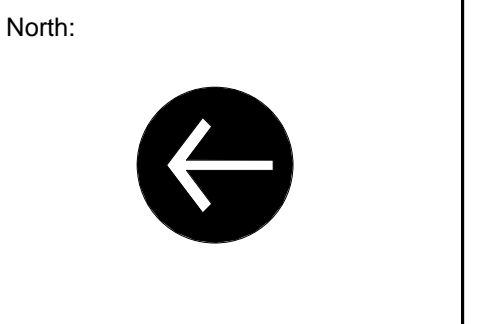
- NOTES:**
1. RELATIVE ELEVATION 0' - 0" CORRESPONDS WITH SITE ELEVATION 240.0'.
  2. F# INDICATES FOOTING DESIGNATION. REFER TO THE FOOTING SCHEDULE ON S0.02 FOOTING DIMENSIONS AND REINFORCING.
  3. [XX'-XX"] INDICATES BOTTOM OF FOOTING ELEVATION.
  4. P# INDICATES PIER DESIGNATION. REFER TO PIER DETAILS AND SCHEDULE OF S0.02.
  5. ALL T.O. PIER ELEVATIONS SHALL BE ASSUMED TO BE EL. (-1'-0") UNLESS NOTED OTHERWISE.
  6. SW-# INDICATES PRECAST SHEAR WALLS. 15'-0" LENGTH X 1'-6" WIDTH, U.N.O.
  7. CONTRACTOR TO COORDINATE PIPE INVERTS WITH PLUMBING AND SITE DRAWINGS. PIPES SHALL NOT PENETRATE THROUGH OR UNDERMINE BUILDING PIERS AND/OR FOOTINGS. DROP FOOTINGS AS REQUIRED.
  8. CONTRACTOR TO VERIFY OIL/WATER SEPARATORS DO NOT INTERFERE WITH THE ZONE OF INFLUENCE LINE OF THE BUILDING FOOTINGS (HORIZ. 2 FT. FROM TOE, DOWN AT 1V:1H SLOPE). DROP FOOTINGS AS REQUIRED.

**1 FOUNDATION PLAN**  
SCALE: 1" = 20'-0"



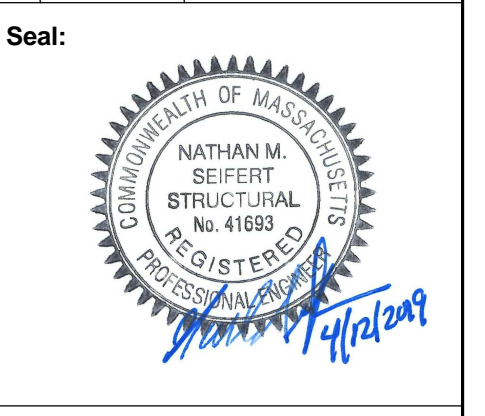
- NOTES:**
1. ALL PRECAST DOUBLE TEES SHALL BE TYPE 12DT34 UNLESS OTHERWISE NOTED. THE DOUBLE TEES SHALL HAVE A 1% SLOPE FROM WEST TO EAST WITH THE HIGH POINT ELEVATION AT 10' 5-1/4" AND THE LOW POINT ELEVATION AT 9'-10".
  2. FD INDICATES 4" DIAMETER FLOOR DRAIN LOCATIONS. COORDINATE LOCATIONS WITH PLUMBING DRAWINGS.
  3. THE TRAFFIC BEARING WATERPROOFING MEMBRANE SHALL BE PERFORMED BY THE WATERPROOFING CONTRACTOR. THE TRAFFIC BEARING WATERPROOFING MEMBRANE SHALL BE A TWO-COMPONENT, AROMATIC, CHEMICALLY CURED, ELASTOMERIC POLYURETHANE COATING INTENDED FOR USE AS THE WATERPROOFING BASE COAT ALONG WITH A POLYURETHENE OR EPOXY WEARING SURFACE FOR VEHICULAR TRAFFIC BEARING APPLICATIONS. PRODUCT SHALL BE SIKALASTIC 720/22 LO-MOD TRAFFIC SYSTEM MANUFACTURED BY SIKKA CORP. OR APPROVED EQUAL.

**2 DECK PLAN**  
SCALE: 1" = 20'-0"



Revisions:

Rev	Date	Description
1	01.03.2019	Addendum 3



CONSTRUCTION DOCUMENTS

Date: **12/05/18**

Scale: AS NOTED

Drawn By: KMC

Reviewed By: RAC

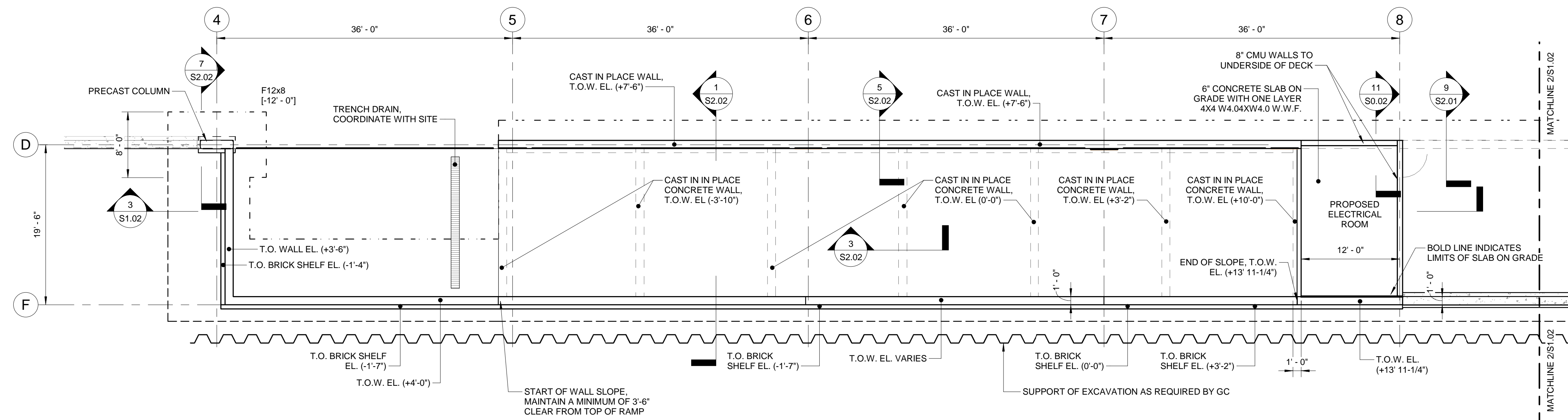
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Approved By: NMS

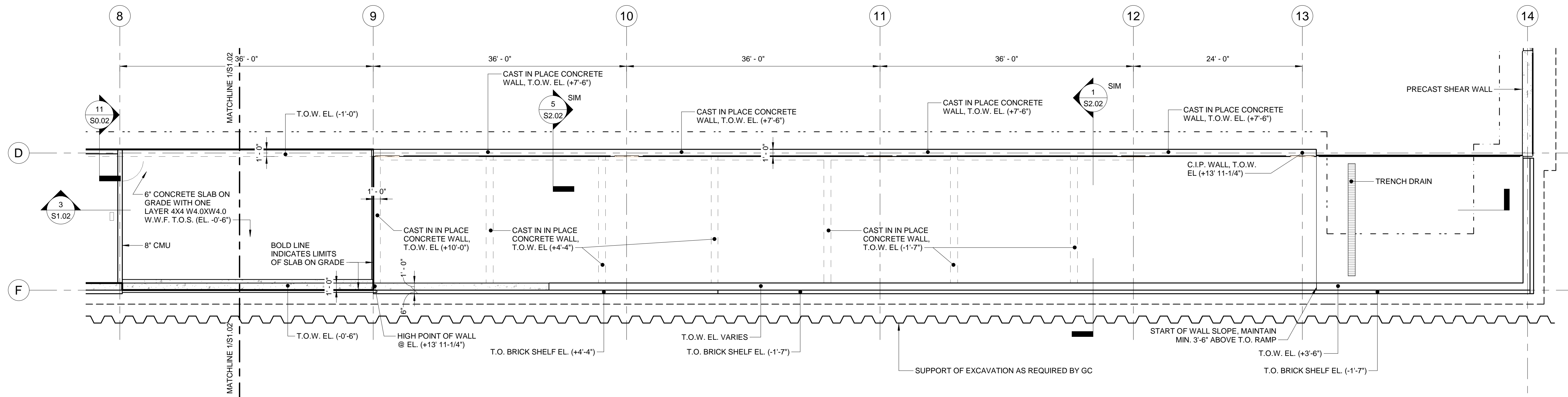
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**FOUNDATION AND DECK PLANS**

Sheet Number:  
**S1.01**

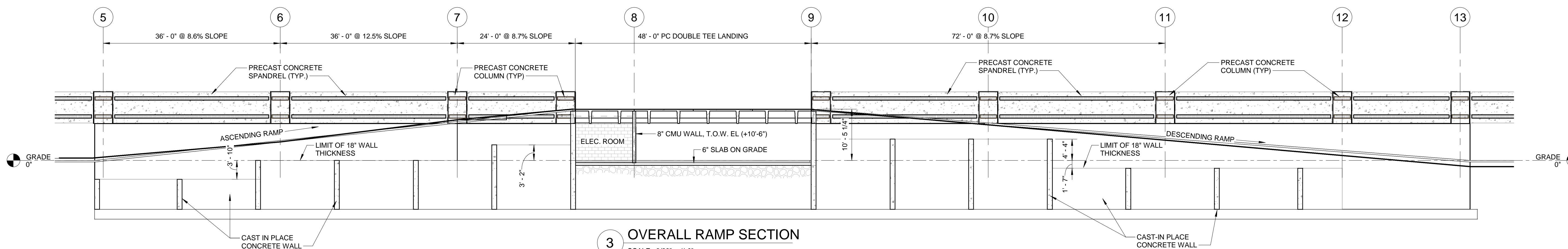
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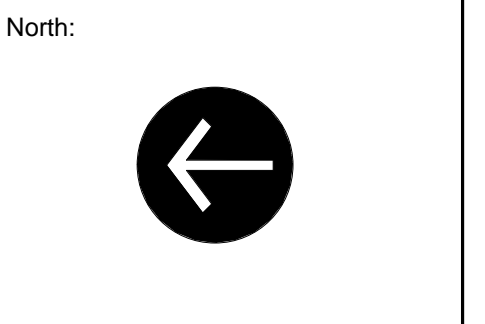
**1 ENLARGED PLAN - (ASCENDING RAMP)**  
SCALE: 1/8" = 1'-0"



**2 ENLARGED PLAN - (DESCENDING RAMP)**  
SCALE: 1/8" = 1'-0"

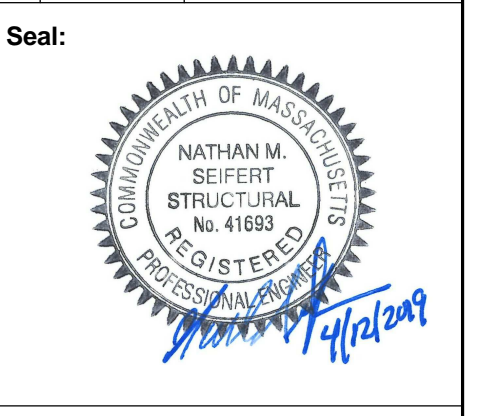


**3 OVERALL RAMP SECTION**  
SCALE: 3/32" = 1'-0"



Revisions:

Rev	Date	Description

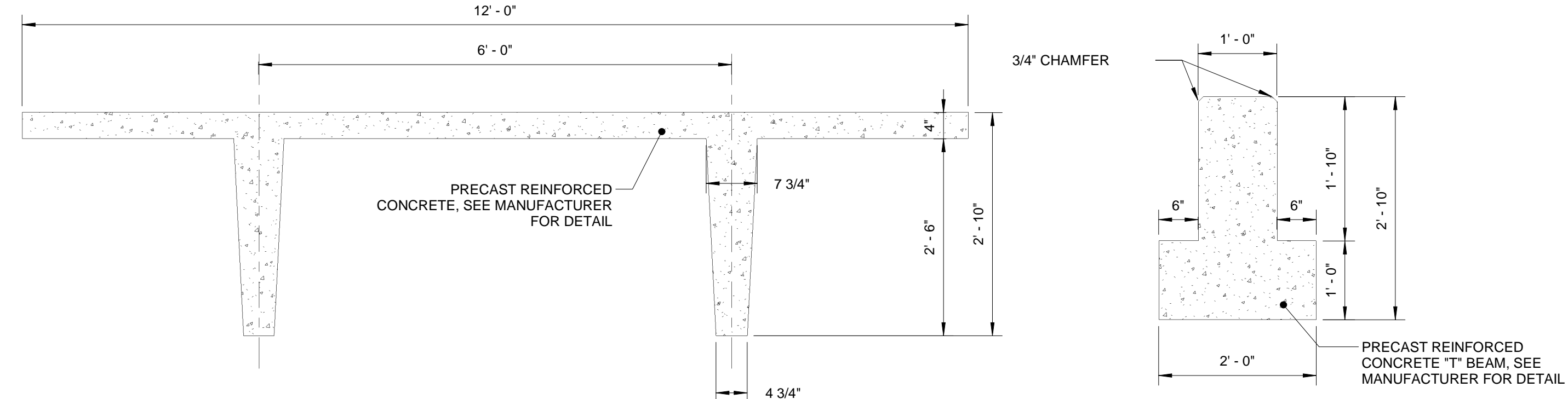
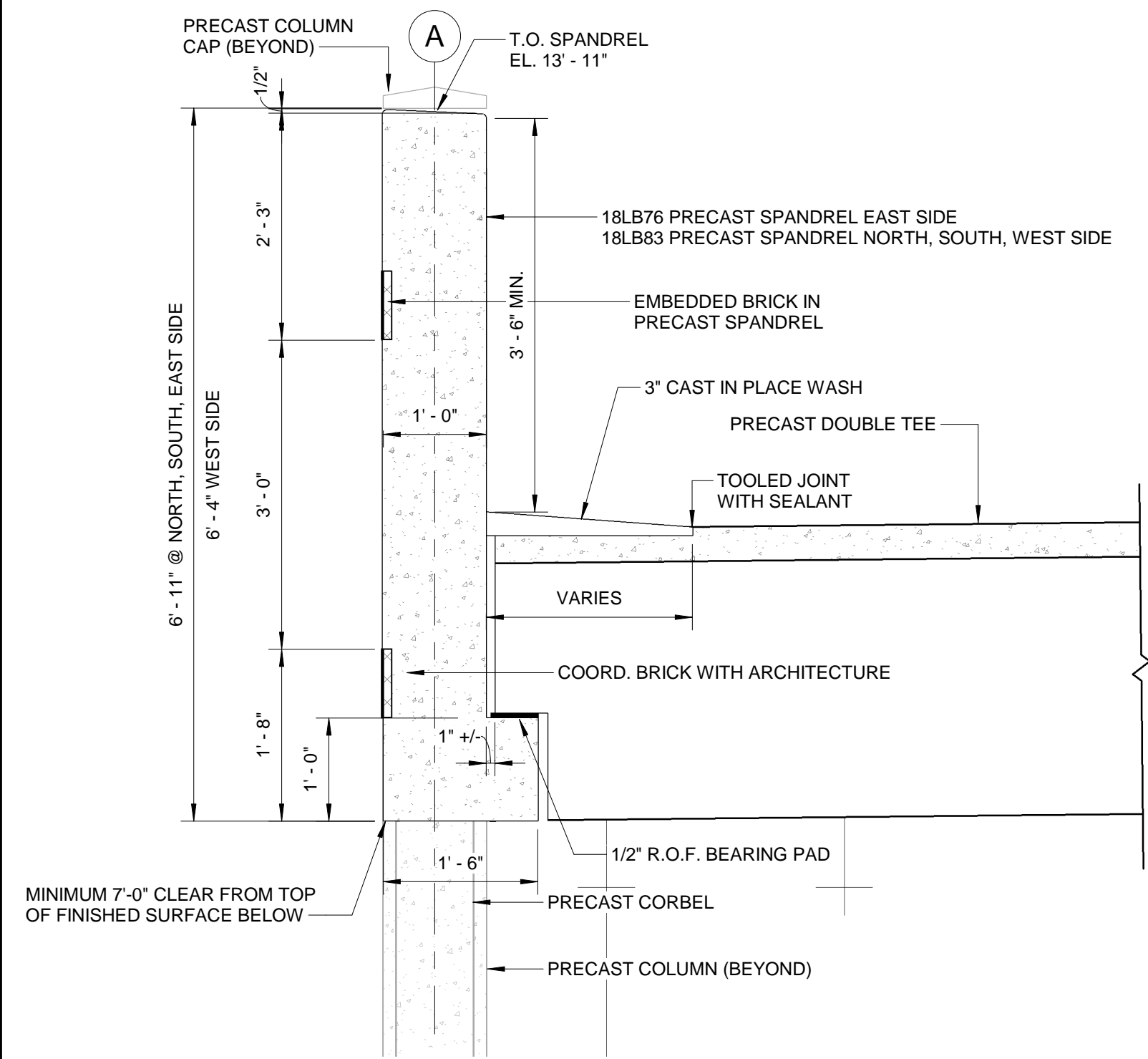


CONSTRUCTION DOCUMENTS

Date: **12/05/18**  
 Scale: AS NOTED  
 Drawn By: KMC  
 Reviewed By: RAC  
 Checked By: RAC  
 Approved By: NMS

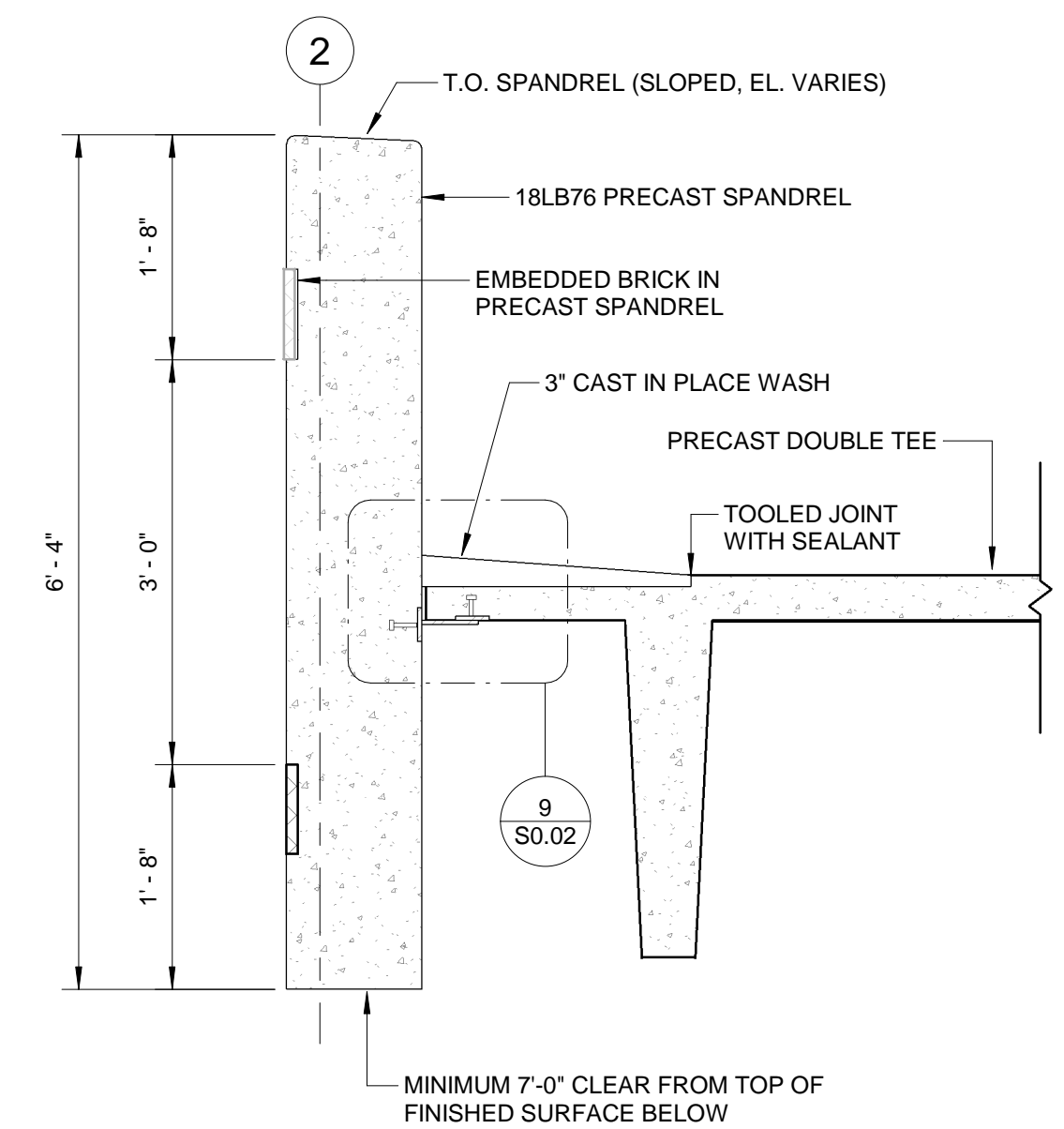
Drawing Title:  
**ENLARGED RAMP  
 PLANS AND  
 SECTION**

Sheet Number:  
**S1.02**

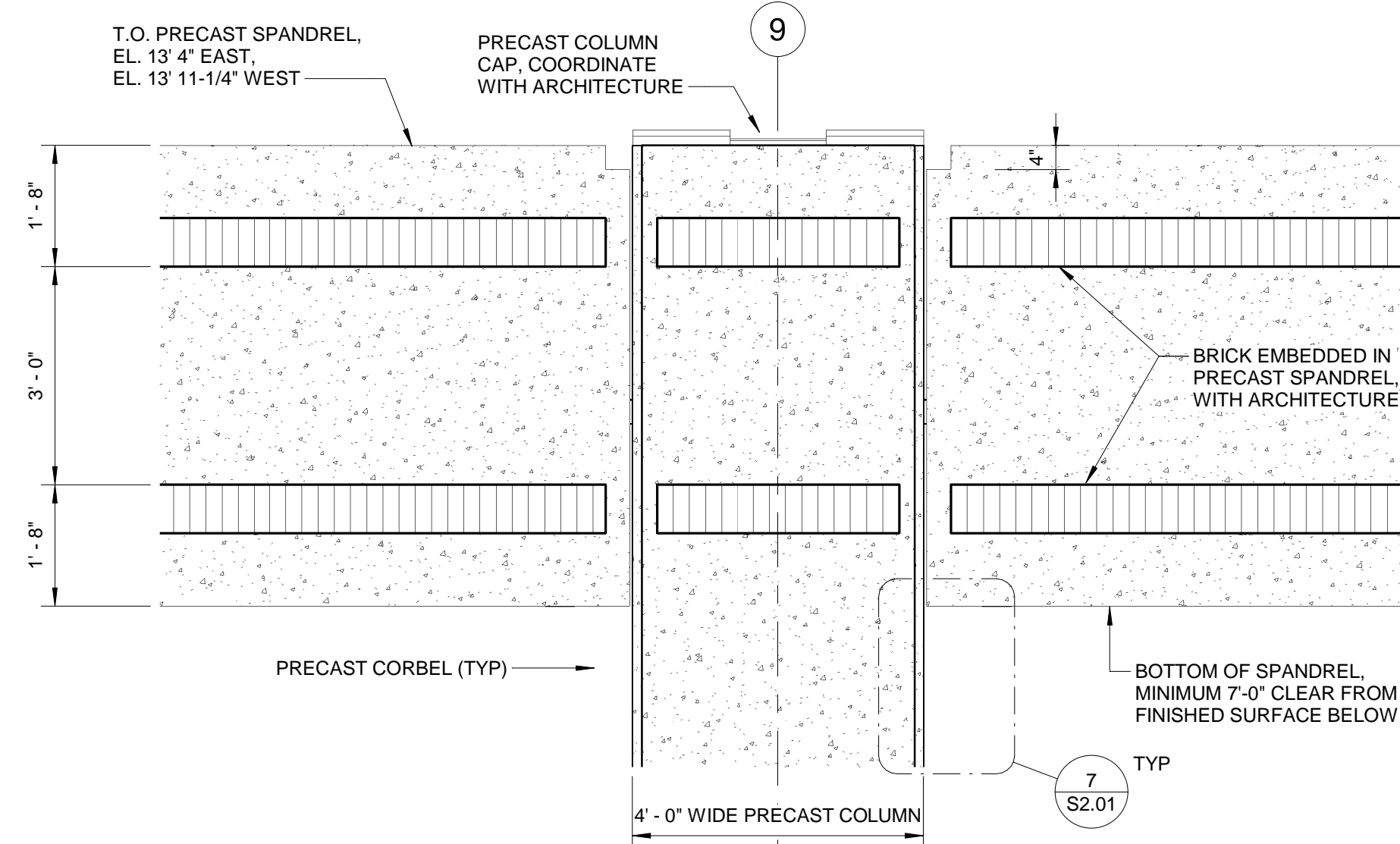


NOTE(S):  
1. PROVIDE 1/4" TOOLED RADIUS AT ALL PRECAST EDGES AND POUR STRIPS AS REQUIRED BY JOINT SEALANT MANUFACTURER.

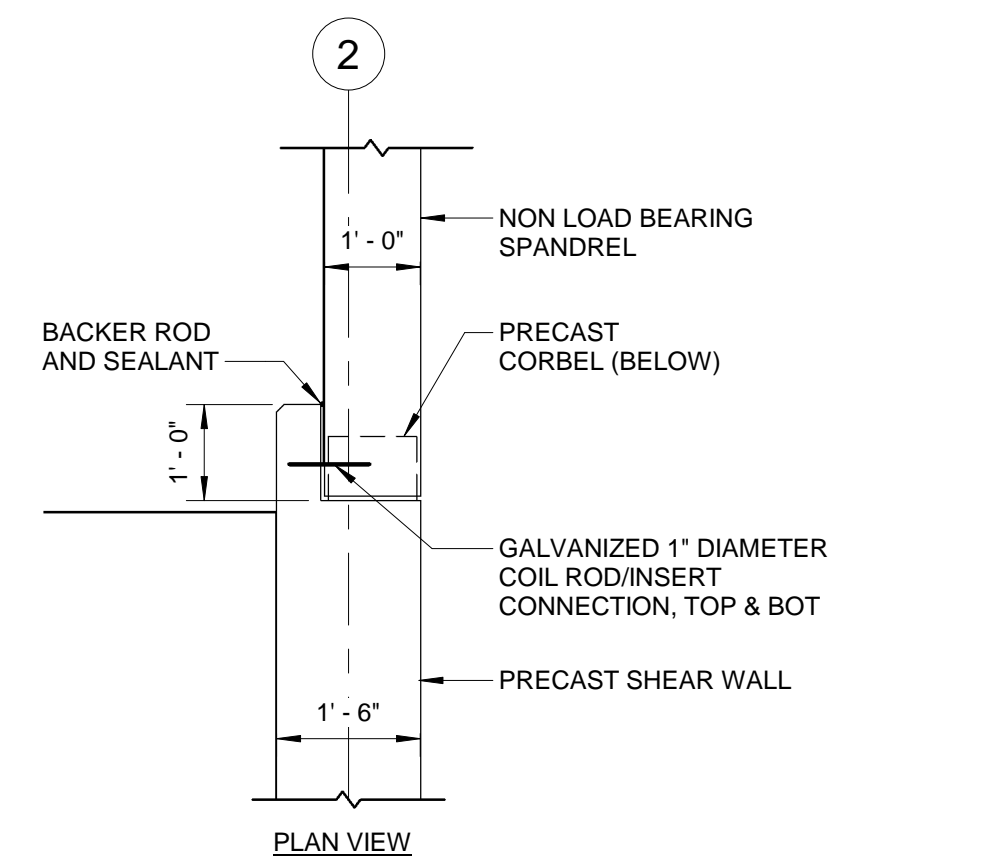
3 24IT34 BEAM SECTION  
SCALE: 3/4" = 1'-0"



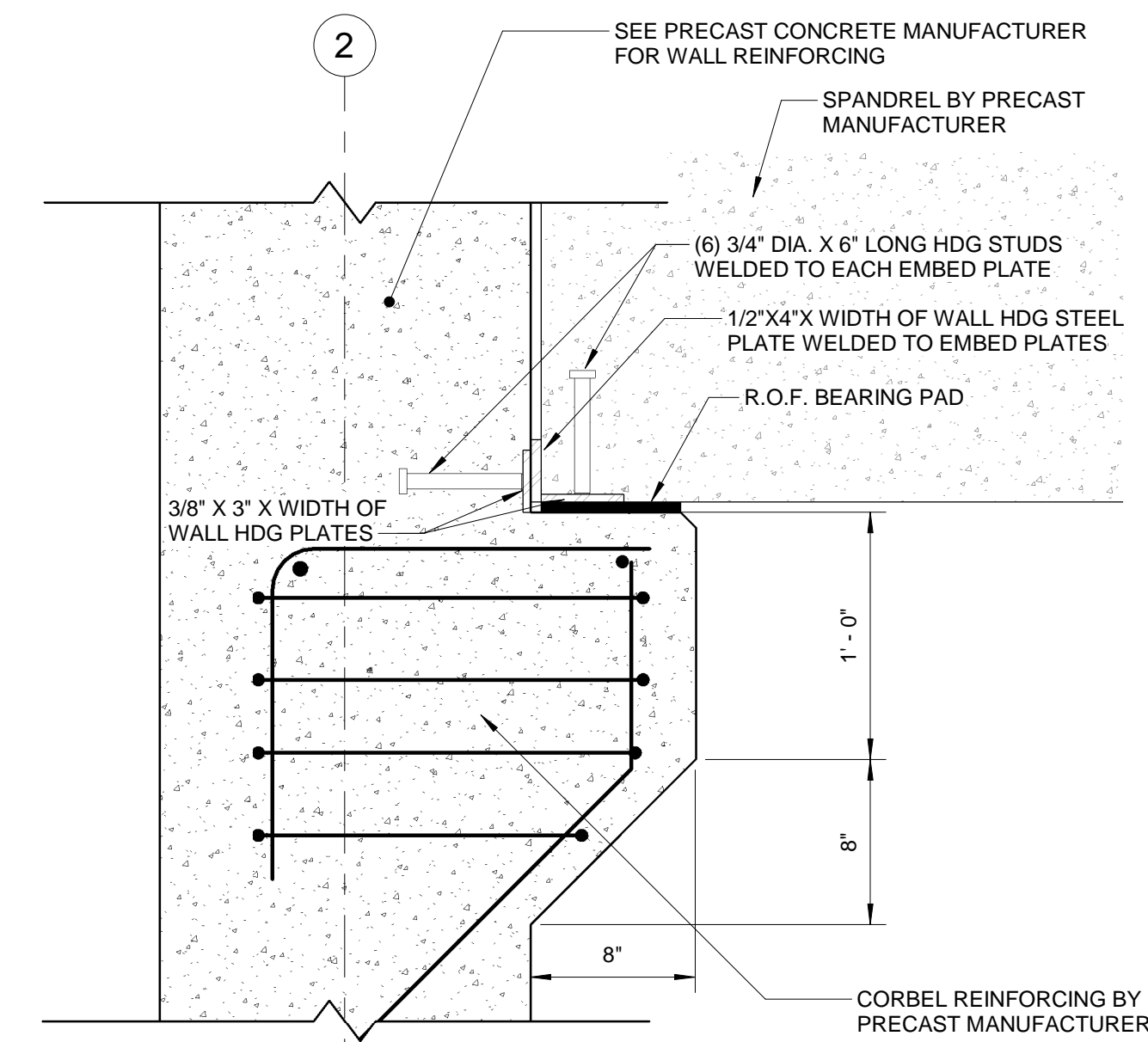
4 NON LOAD BEARING SPANDREL SECTION  
SCALE: 3/4" = 1'-0"



5 PRECAST COLUMN ELEVATION  
SCALE: 1/2" = 1'-0"

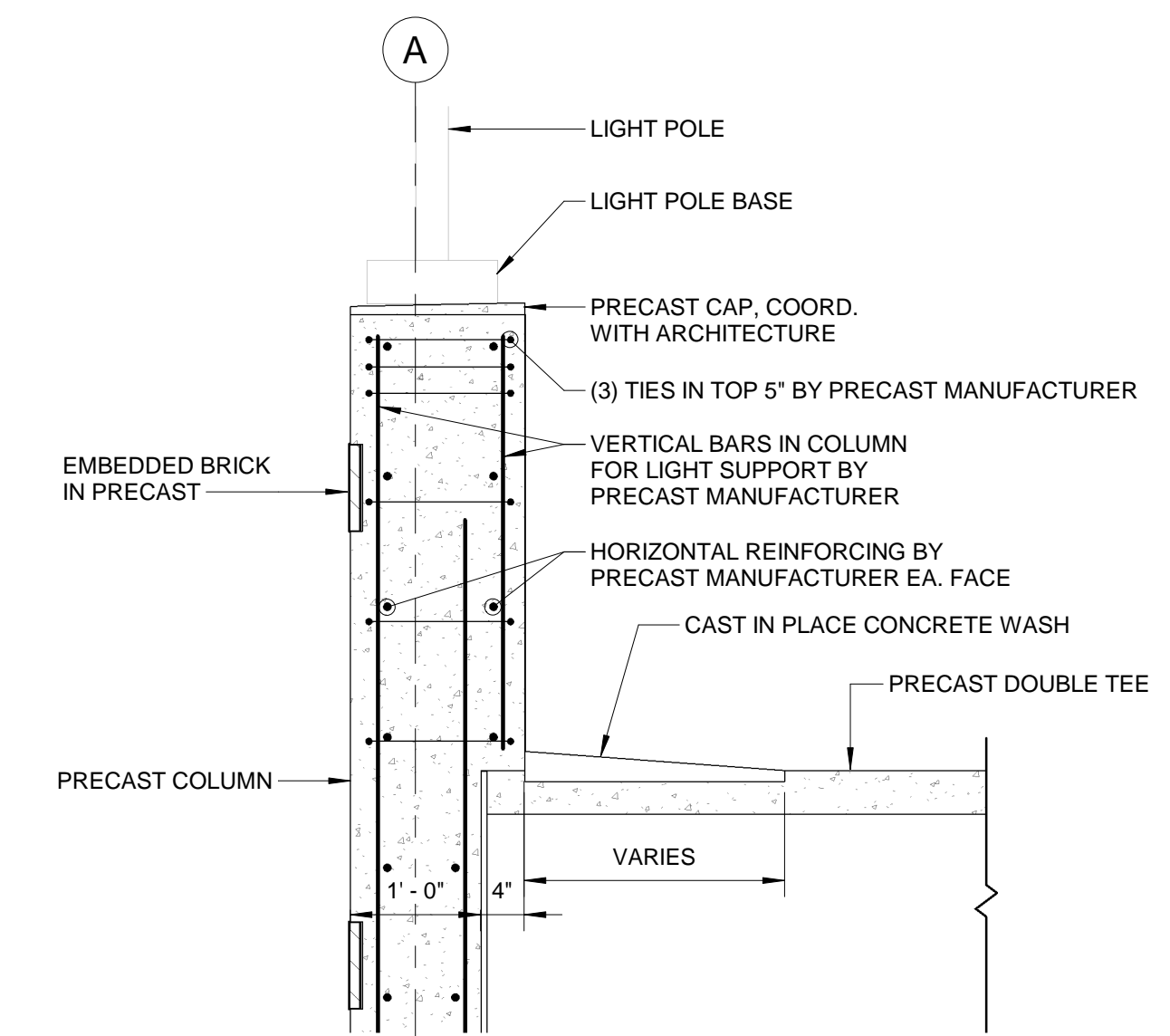


6 SPANDREL TO SHEAR WALL CONNECTION  
SCALE: 1/2" = 1'-0"

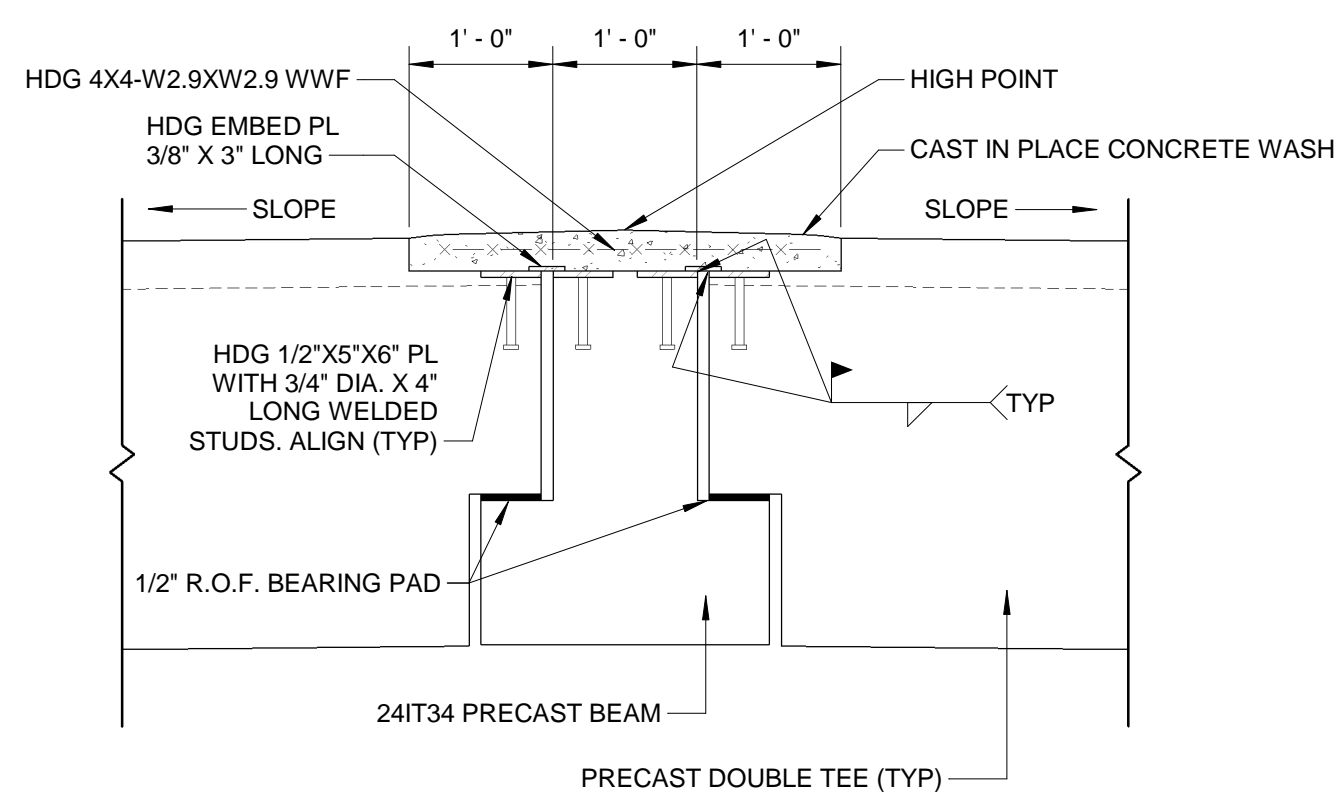


NOTE(S):  
1. REINFORCING SHALL BE HOT DIPPED GALVANIZED.  
2. SEE PLAN, SECTIONS, AND SCHEDULE FOR COLUMN SIZE, LOCATION, REINFORCING, ETC., TYP.  
3. REINFORCING TYPICAL FOR ADDITIONAL CORBEL PERPENDICULAR TO CORBEL SHOWN.

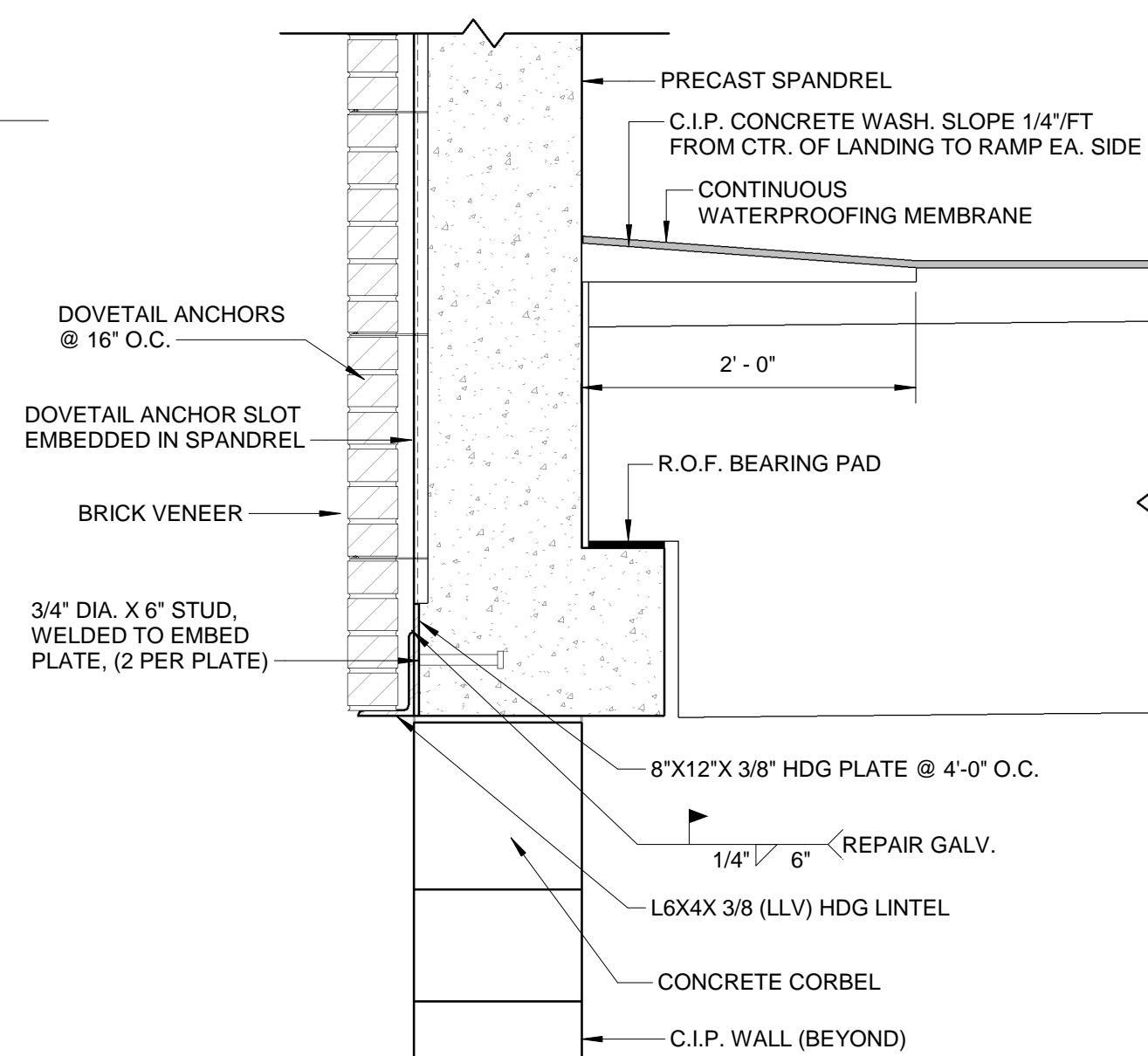
7 PRECAST CORBEL DETAIL  
SCALE: 1 1/2" = 1'-0"



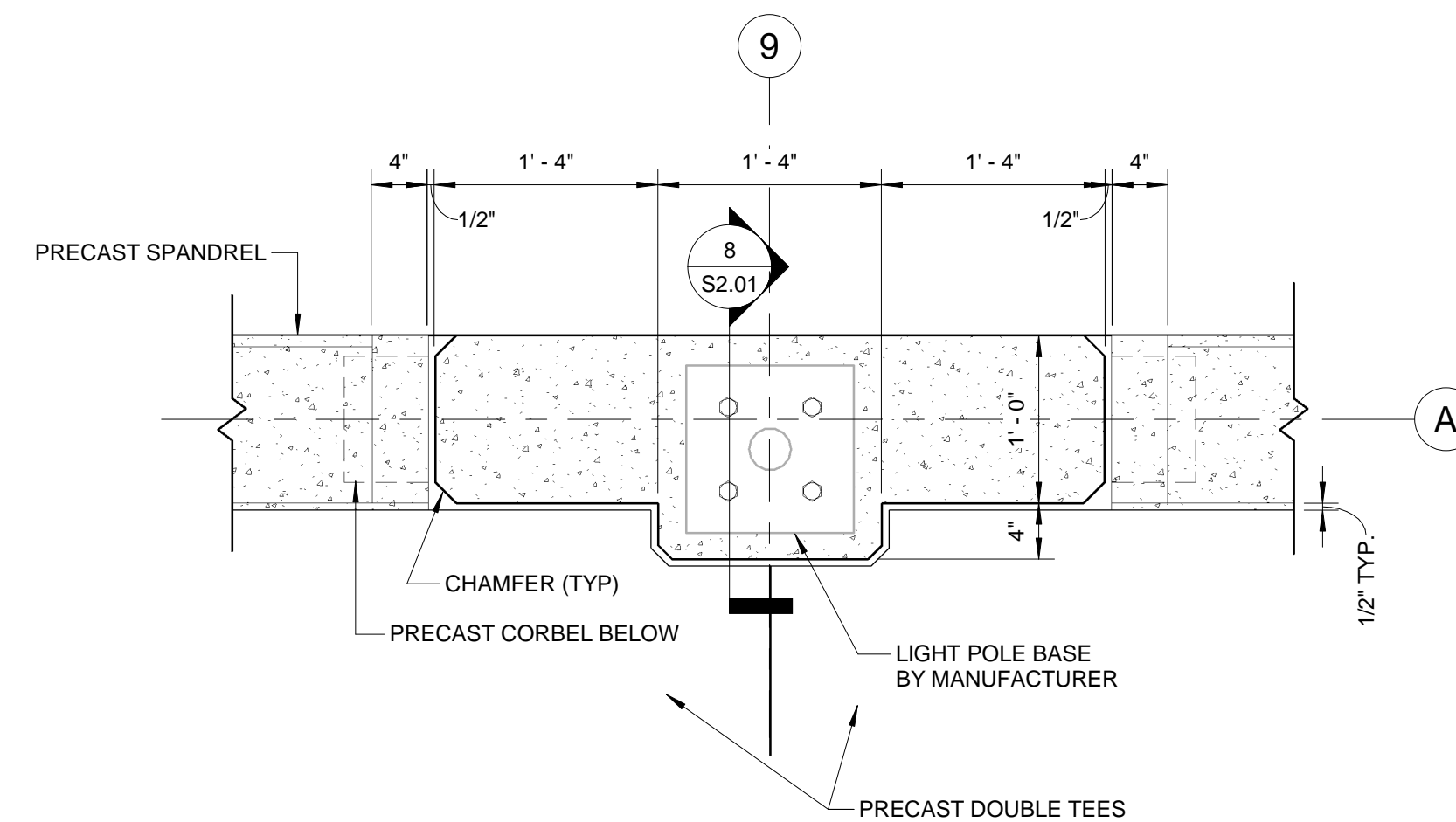
8 COLUMN SECTION WITH LIGHT POLE  
SCALE: 3/4" = 1'-0"



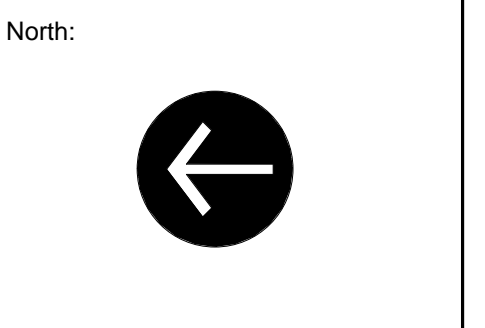
9 RAMP LANDING SECTION  
SCALE: 3/4" = 1'-0"



10 EXTERIOR SECTION @ RAMP LANDING  
SCALE: 1" = 1'-0"

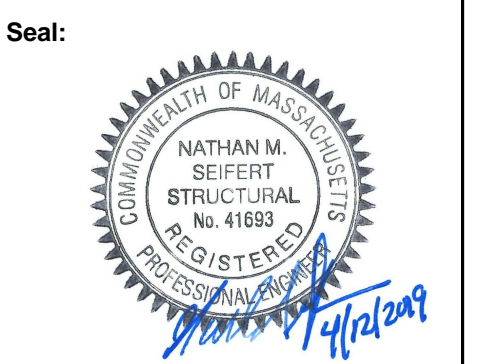


11 TYPICAL ENLARGED COLUMN PLAN  
SCALE: 1" = 1'-0"



Revisions:

Rev	Date	Description

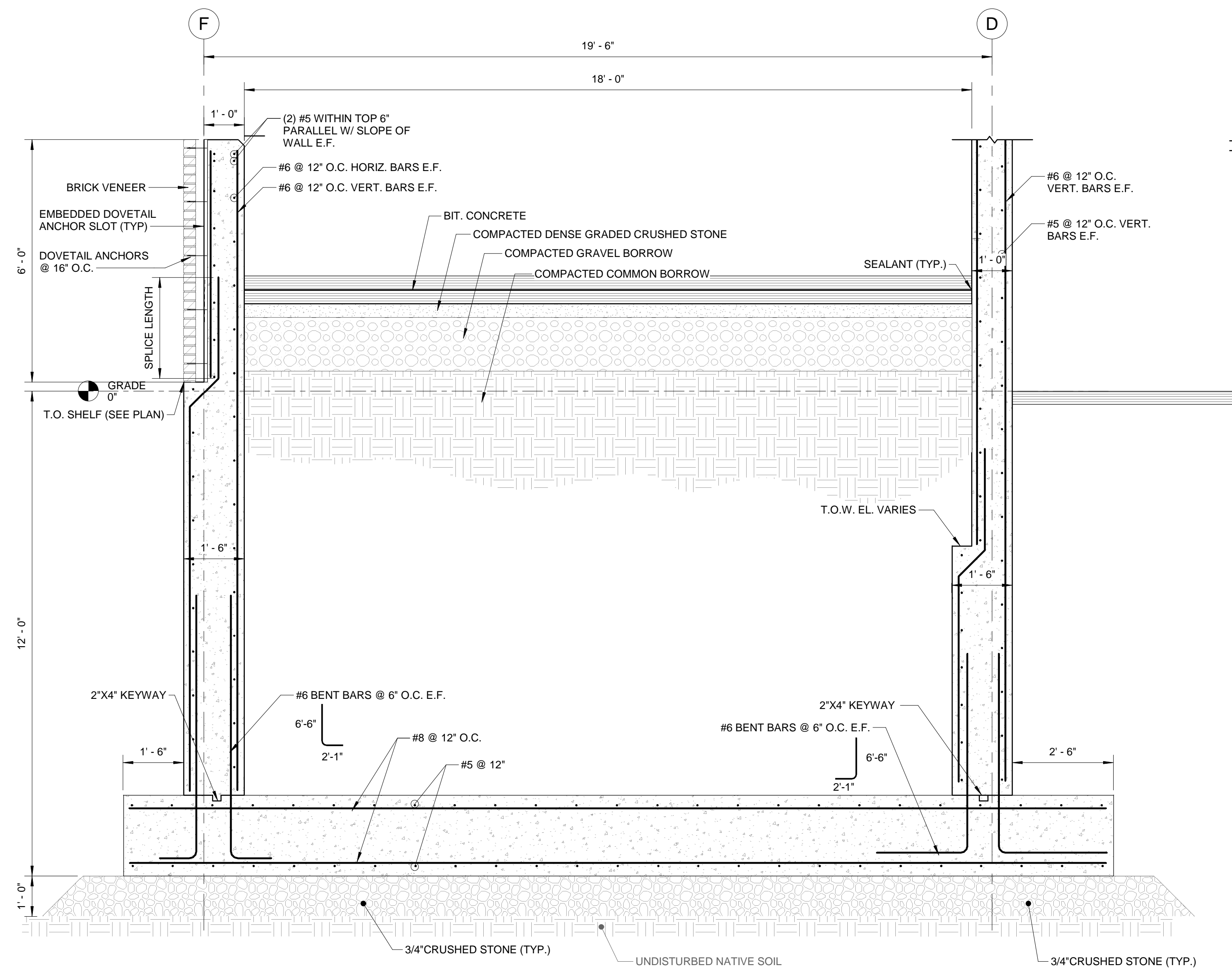


CONSTRUCTION DOCUMENTS

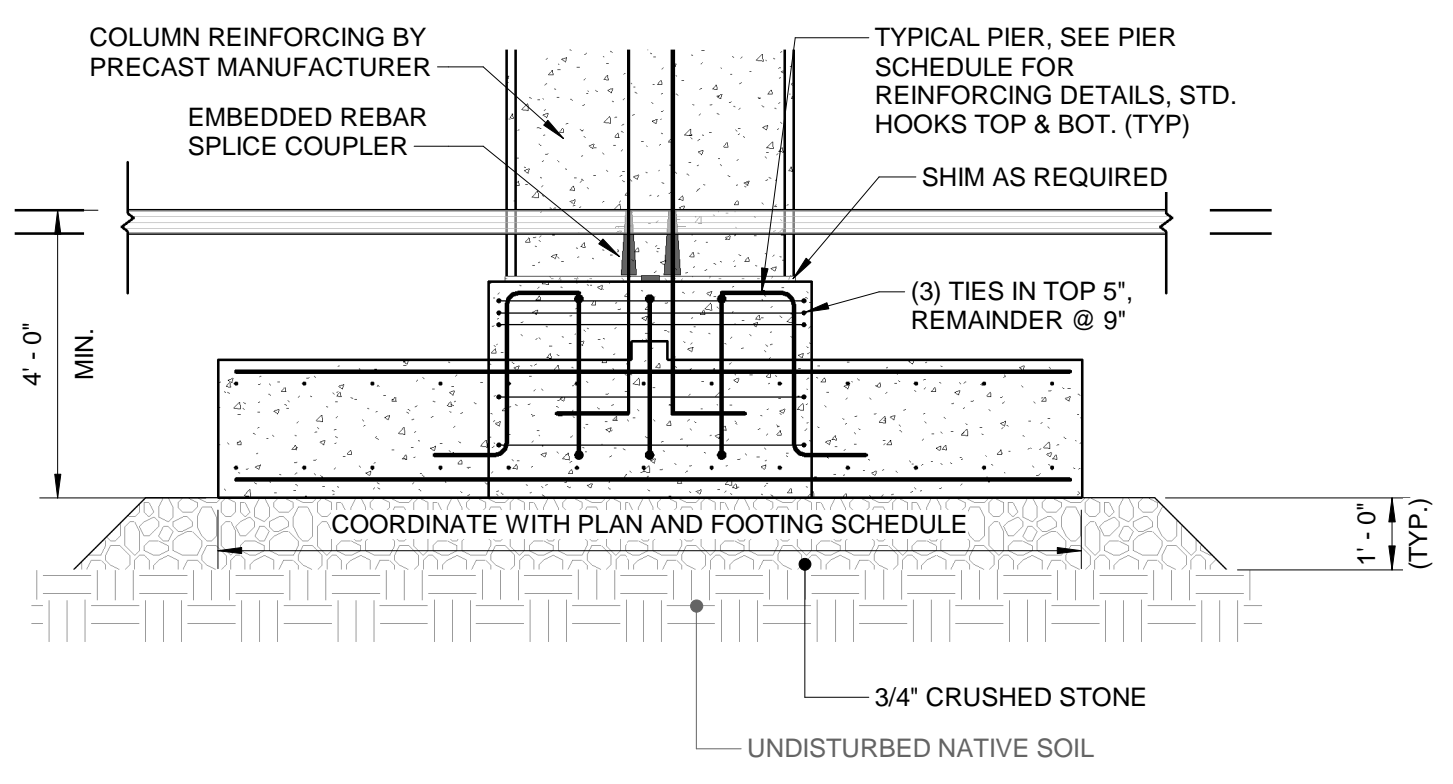
Date: **12/05/18**  
Scale: AS NOTED  
Drawn By: KMC  
Reviewed By: RAC  
Checked By: RAC  
Approved By: NMS

Drawing Title:  
**PRECAST CONCRETE SECTIONS AND DETAILS**

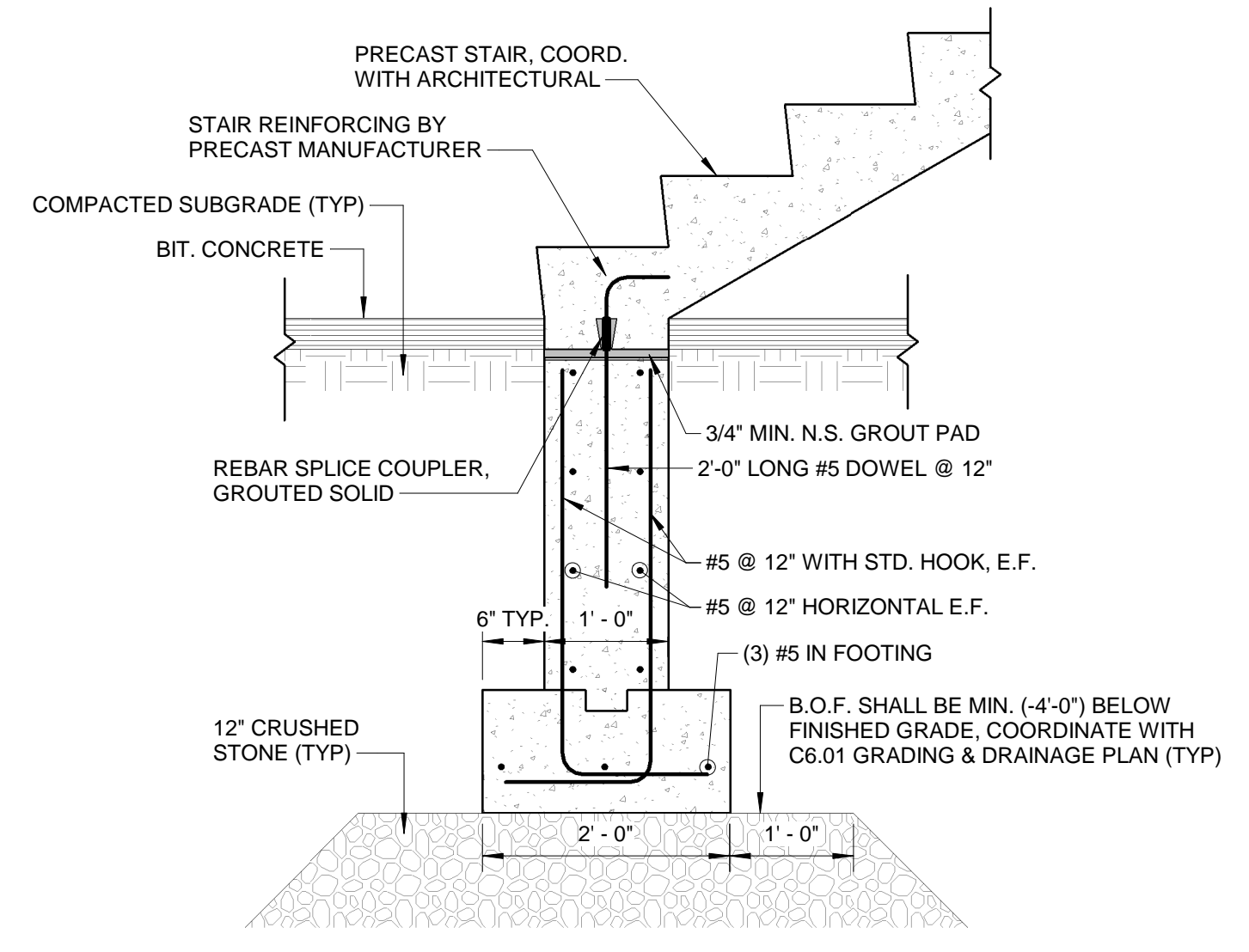
Sheet Number:  
**S2.01**



**1 CAST IN PLACE RAMP SECTION**  
SCALE: 1/2" = 1'-0"

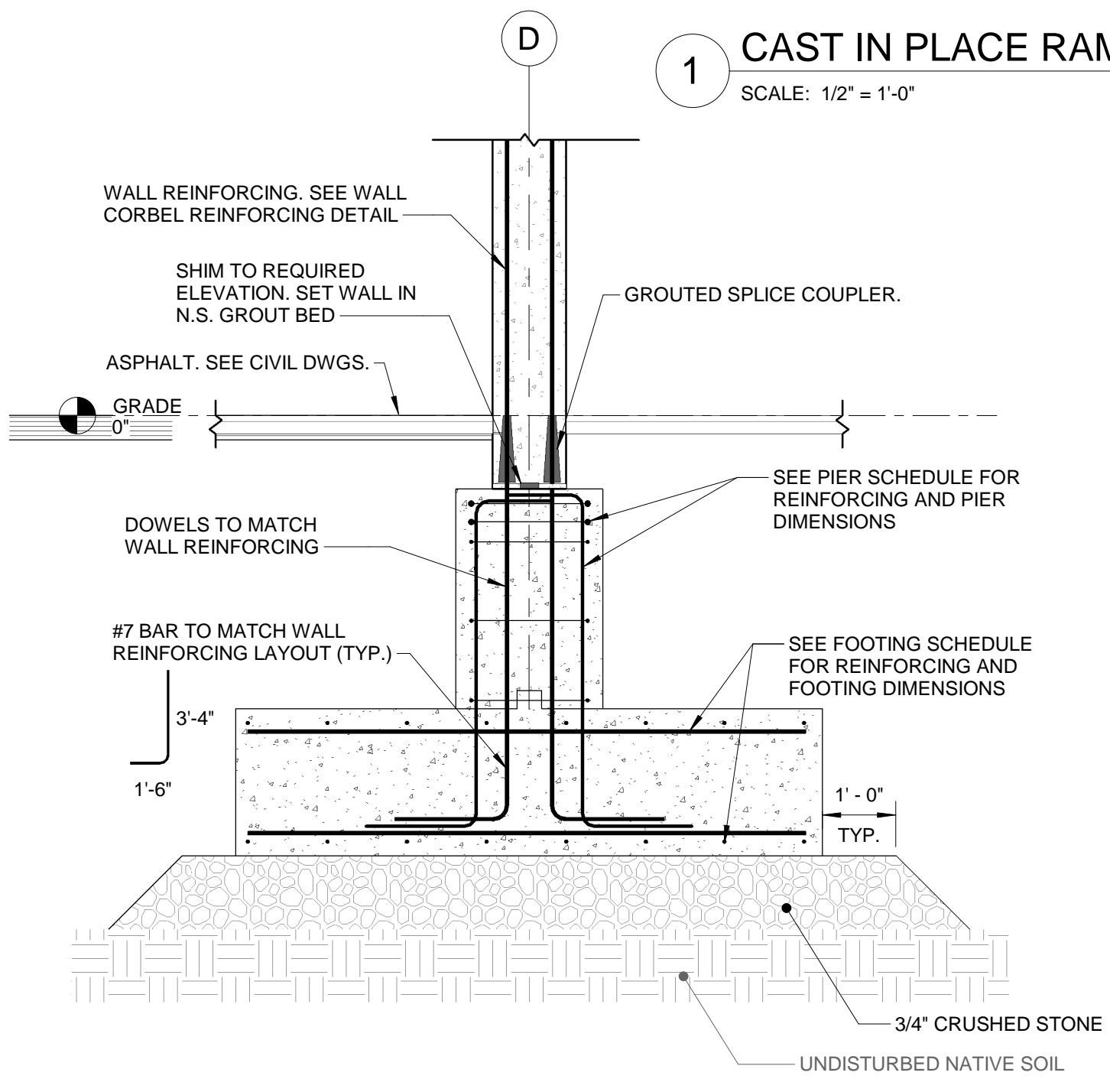
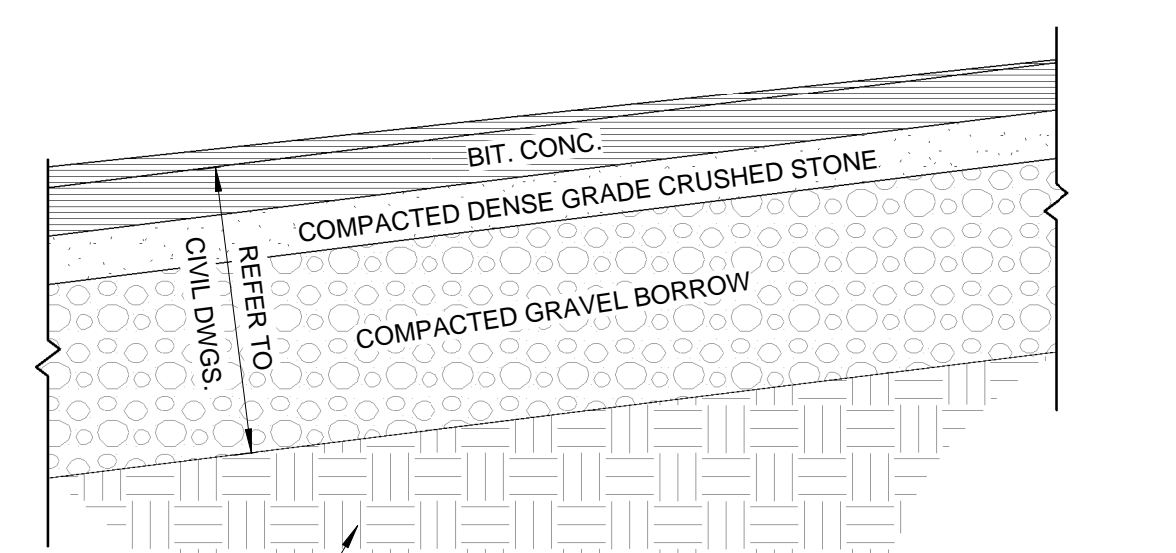


**2 TYPICAL COLUMN BASE**  
SCALE: 3/8" = 1'-0"

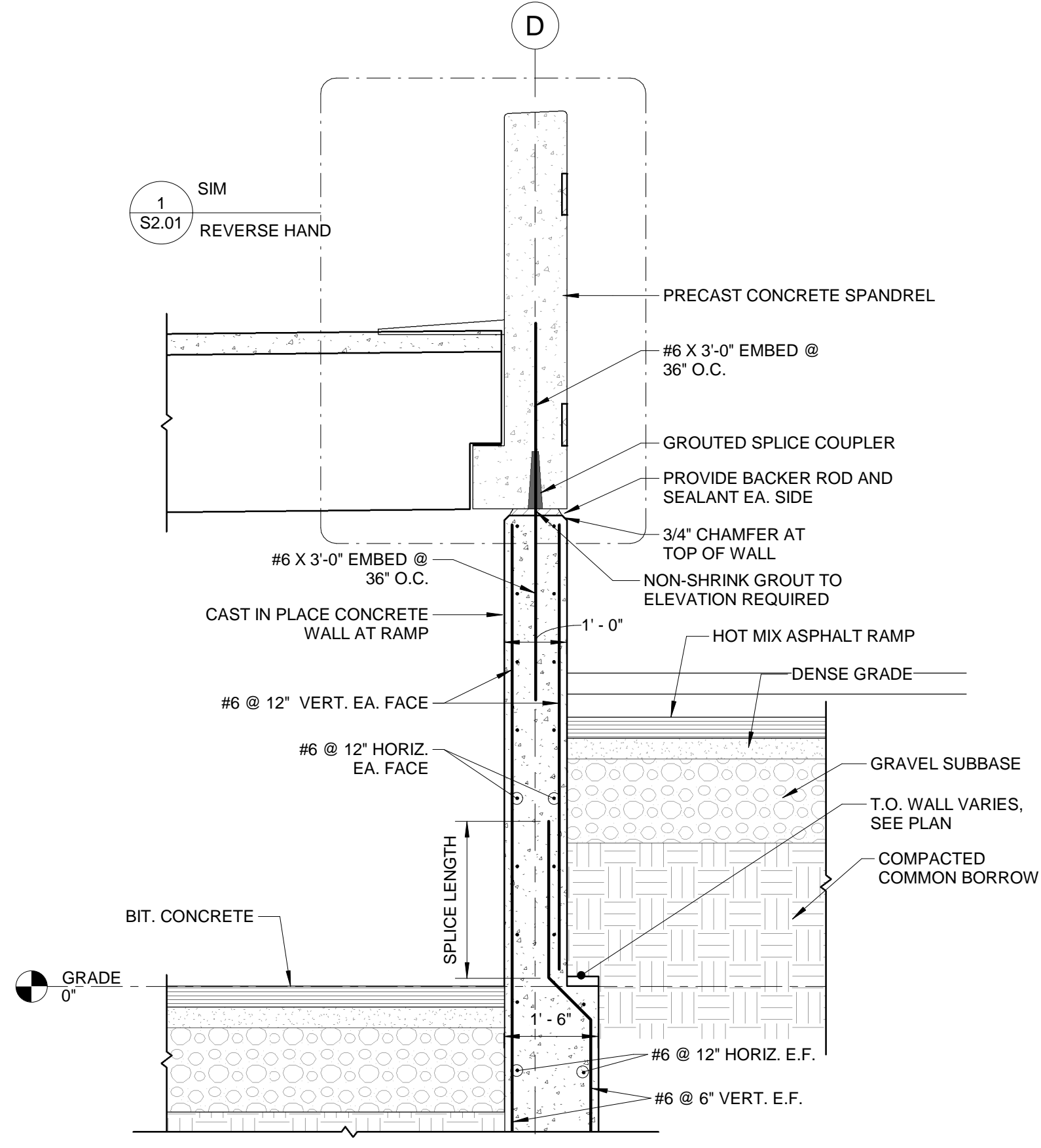


**6 TYPICAL PRECAST STAIR FOUNDATION**  
SCALE: 3/4" = 1'-0"

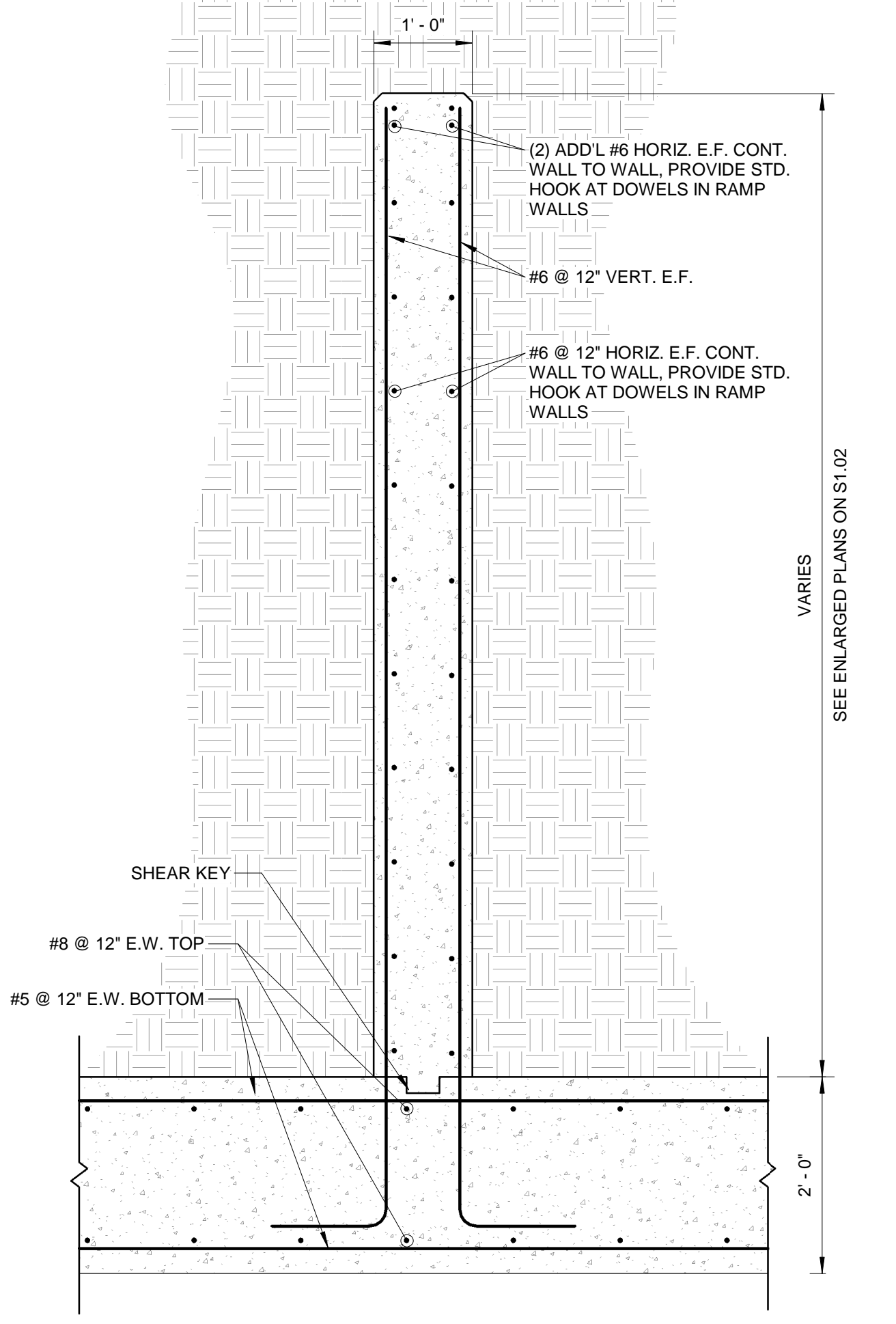
**GENERAL REINFORCING NOTE:**  
1. ALL REINFORCING IN CAST-IN-PLACE CONCRETE WALLS BETWEEN GRID LINES D & F (WITHIN THE WALLS OF THE INCLINE AND DECLINE RAMP) SHALL BE HOT DIPPED GALVANIZED. LIMITS OF GALVANIZING EXTEND FROM TOP OF FOOTING TO TOP OF WALL, INCLUDING VERTICAL WALL DOWELS IN FOOTINGS. ALL OTHER REINFORCING SHALL BE UNCOATED.



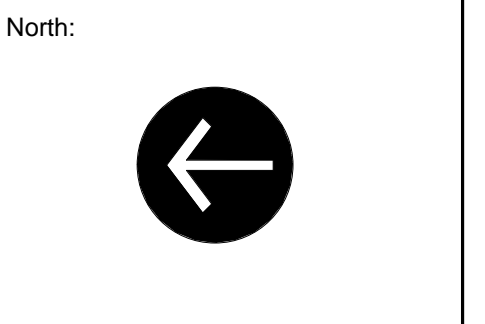
**7 PRECAST ELEMENT CONNECTION DETAIL**  
SCALE: 1/2" = 1'-0"



**5 SECTION @ RAMP WALL**  
SCALE: 1/2" = 1'-0"

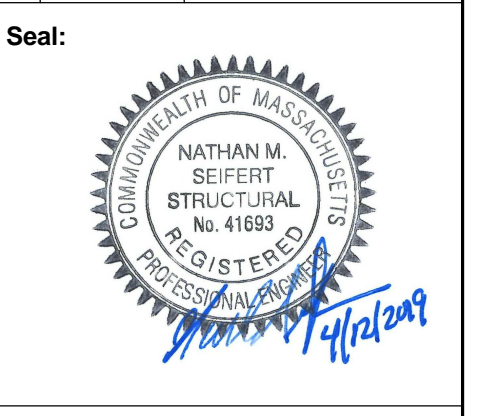


**3 SECTION THROUGH CROSSWALL UNDER RAMP**  
SCALE: 3/4" = 1'-0"



Revisions:

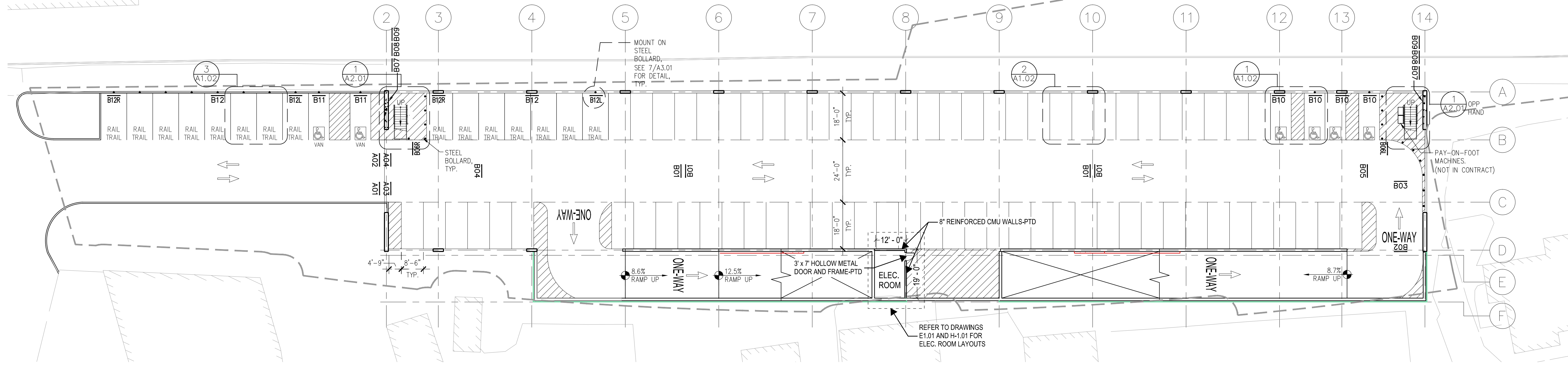
Rev	Date	Description
2	01.18.2019	Addendum 6



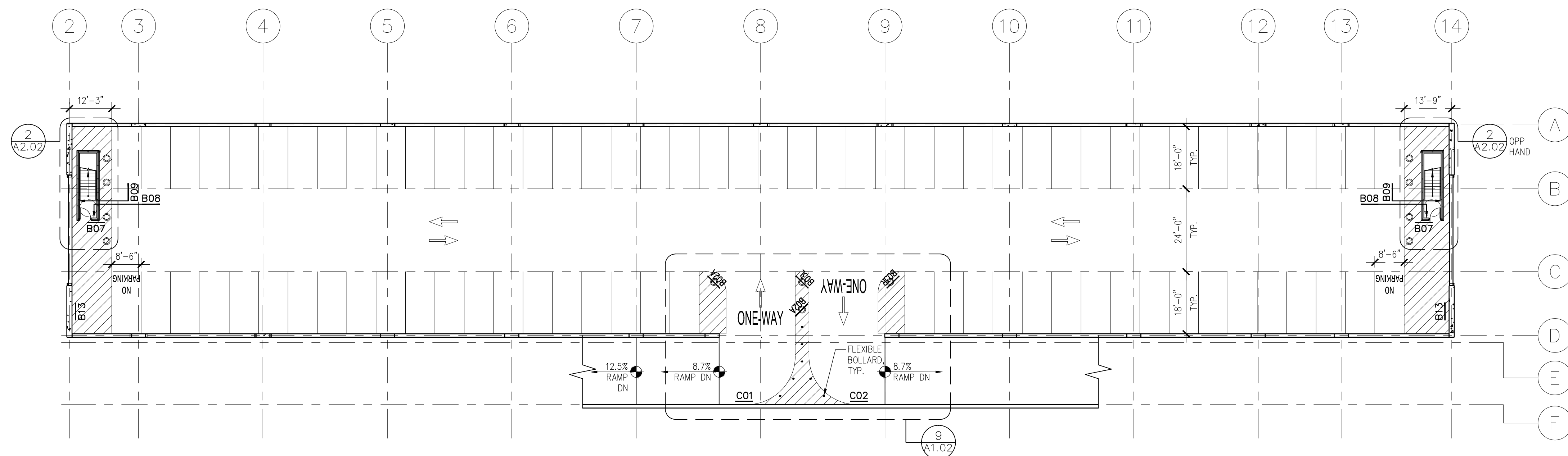
CONSTRUCTION DOCUMENTS  
Date: **12/05/18**  
Scale: AS NOTED  
Drawn By: KMC  
Reviewed By: RAC  
Checked By: RAC  
Approved By: NMS

Drawing Title:  
**CAST IN PLACE SECTIONS AND DETAILS**  
Sheet Number:  
**S2.02**  
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1  
A1.01  
SCALE: 1" = 20'



2  
A1.01  
SCALE: 1" = 20'

GENERAL NOTES

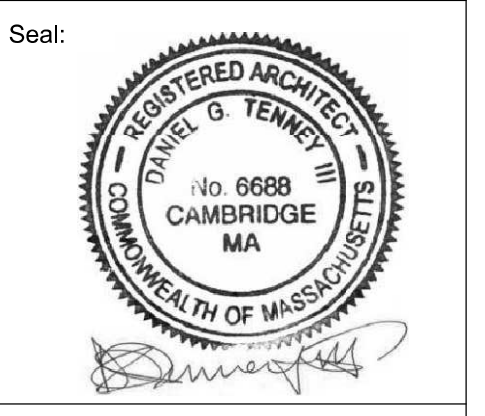
- STALL SIZE:  
 STANDARD PARKING = 8'-6" X 18'-0", TYP.  
 ADA PARKING = 8'-0" X 18'-0", TYP.  
 RAIL TRAIL PARKING = 10'-0" X 18'-0", TYP.

LEVEL	CAR TABULATION				TOTAL
	STANDARD	DCR	VAN ACCESSIBLE	ACCESSIBLE	
SURFACE	0	8	2	0	10
GROUND	70	7	0	4	81
TOP	79	0	0	0	79
TOTAL	149	15	2	4	170

PLAN LEGEND	
•	STEEL BOLLARD (GROUND TIER), SEE 5/A1.02.
•	FLEXIBLE BOLLARD (TOP TIER), SEE 6/A1.02.
○	PRECAST CONCRETE BOLLARD, SEE 4/A1.02.
▨	4" WIDE PAINTED FLOOR STRIPES @ 1'-6" O.C.
→	PAINTED FLOOR ARROW, SEE 8/A1.02.

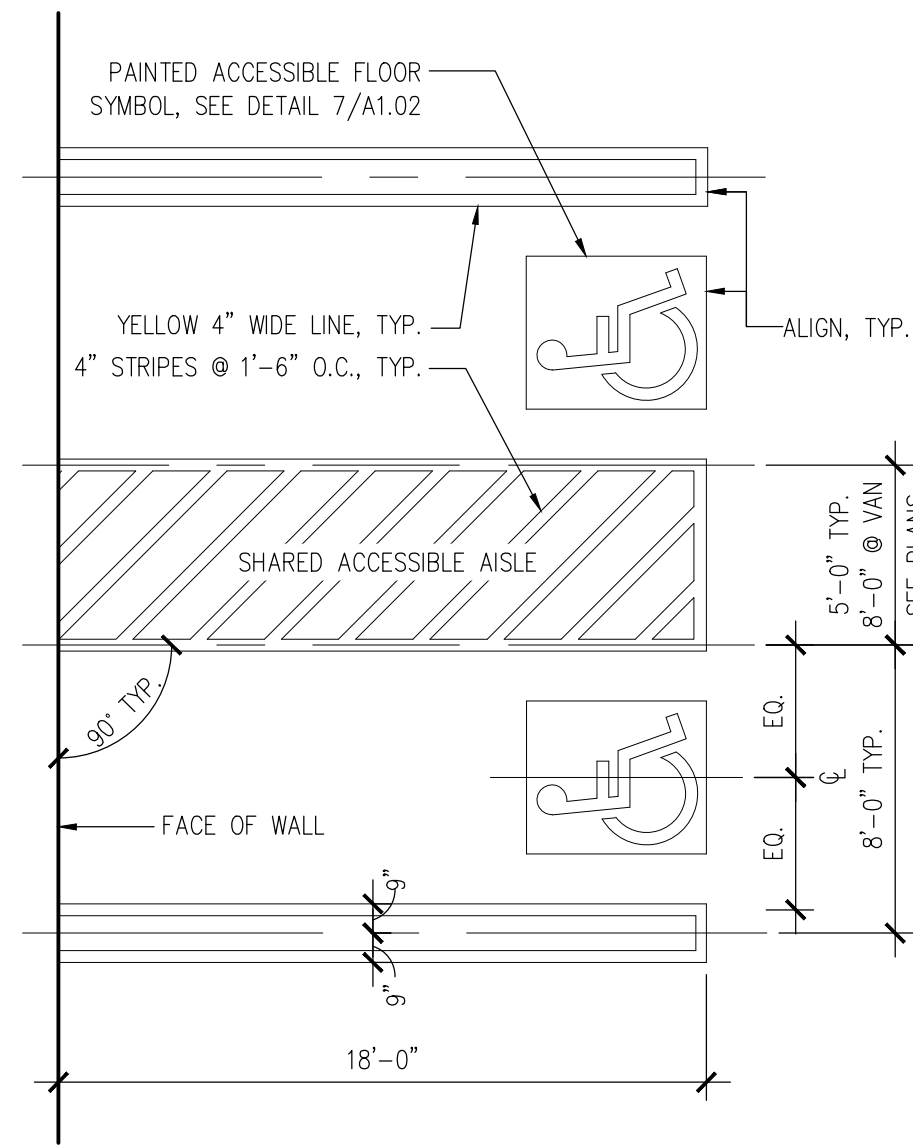
Revisions:

Rev	Date	Description

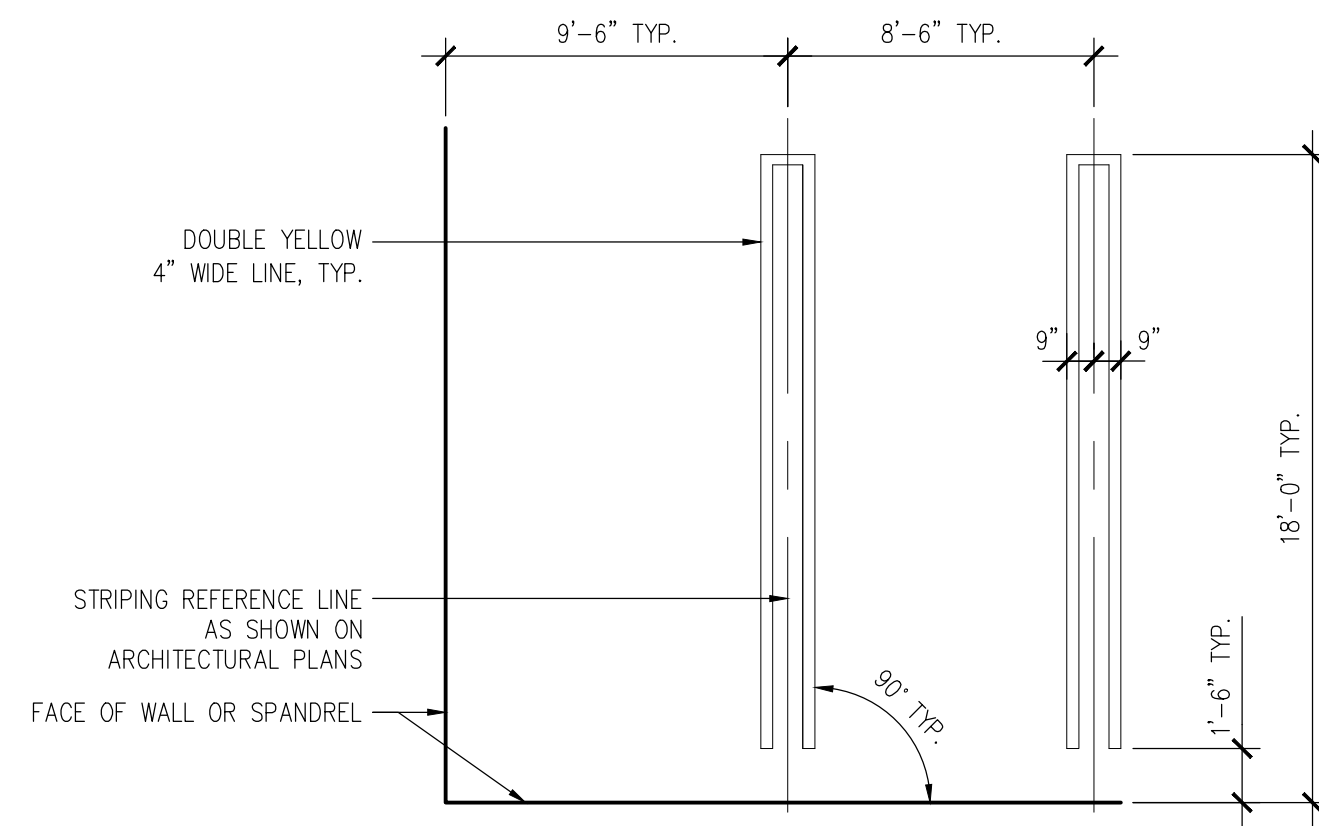


CONSTRUCTION DOCUMENTS

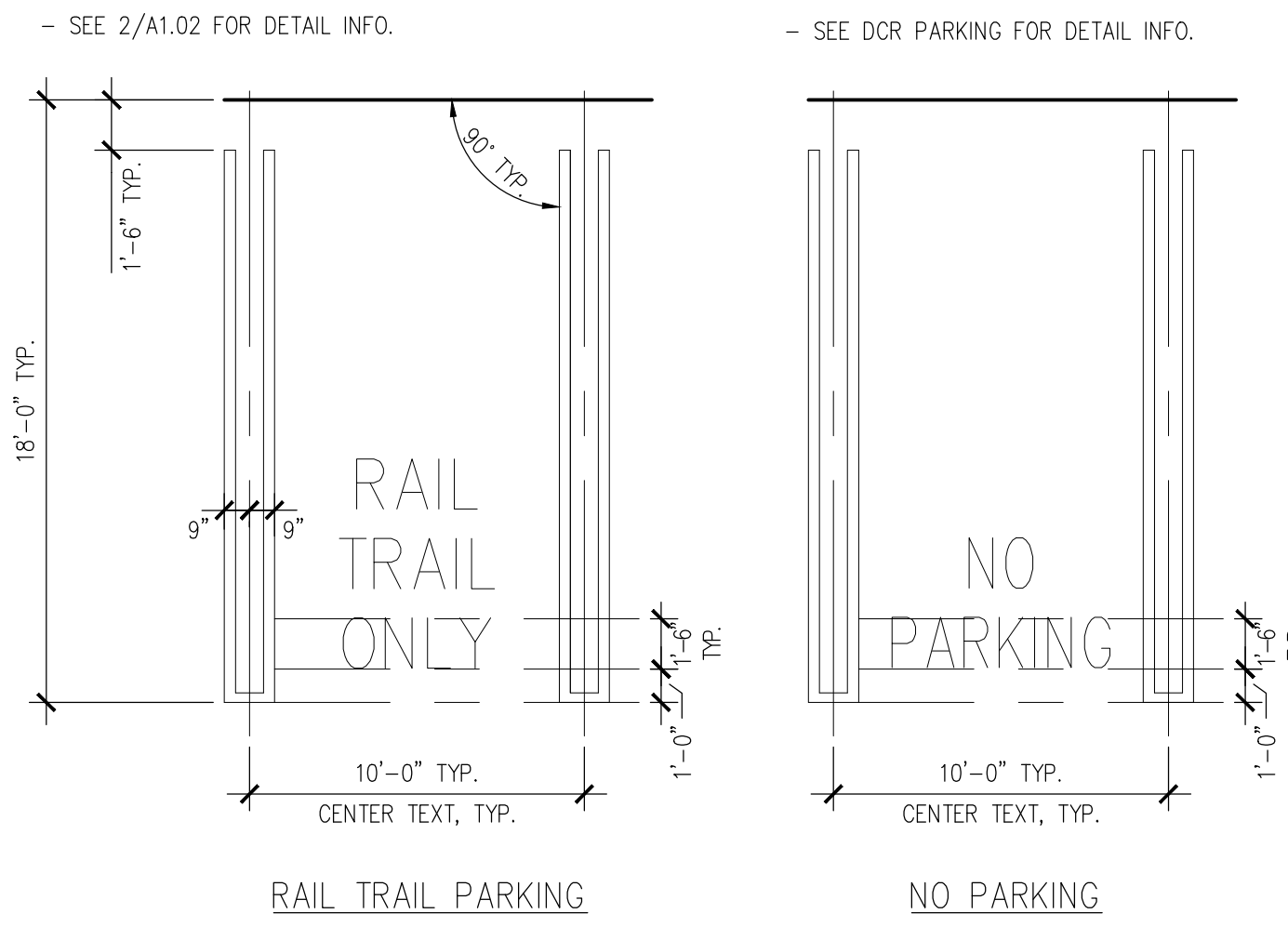
Date: 12/05/18  
 Scale: AS NOTED  
 Drawn By: LHJ  
 Reviewed By: MTA  
 Checked By: MTA  
 Approved By: MTA



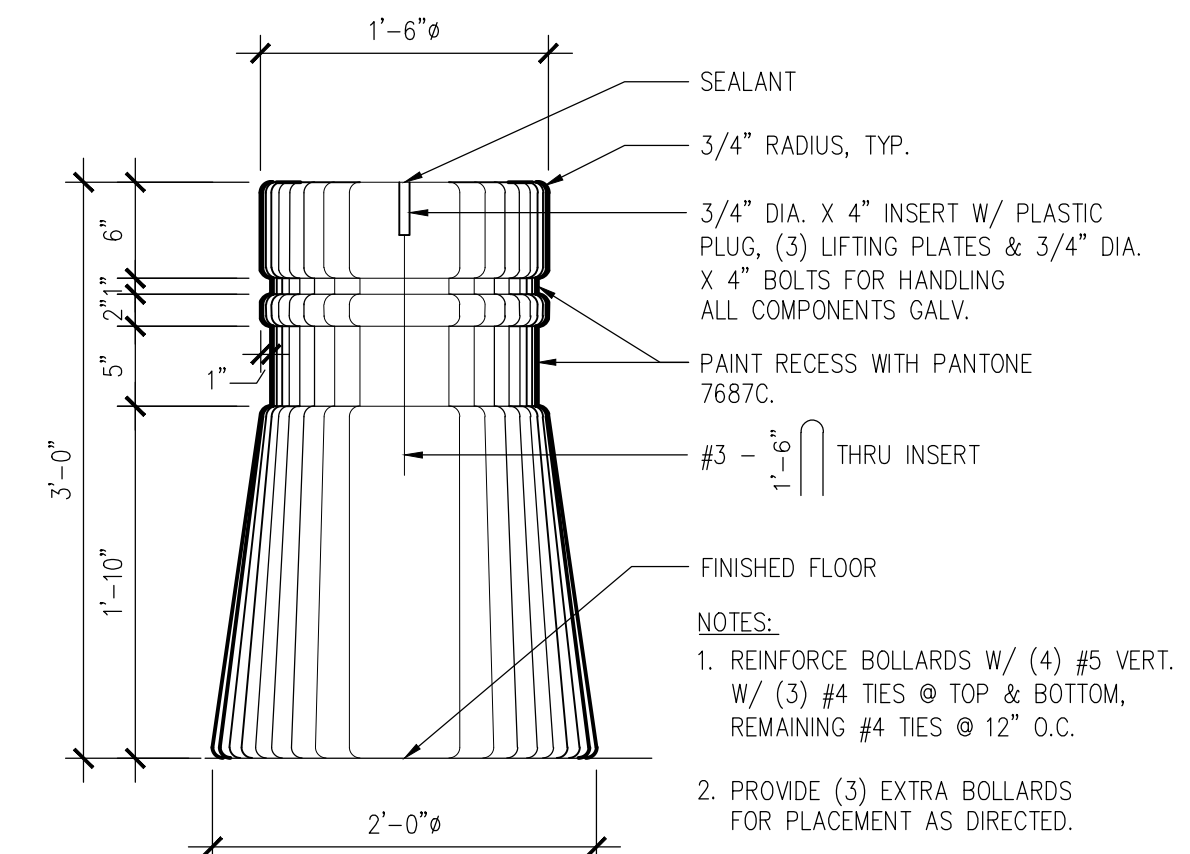
**1** ACCESSIBLE PARKING STRIPING DETAIL  
A1.02 SCALE: 3/16" = 1'-0"



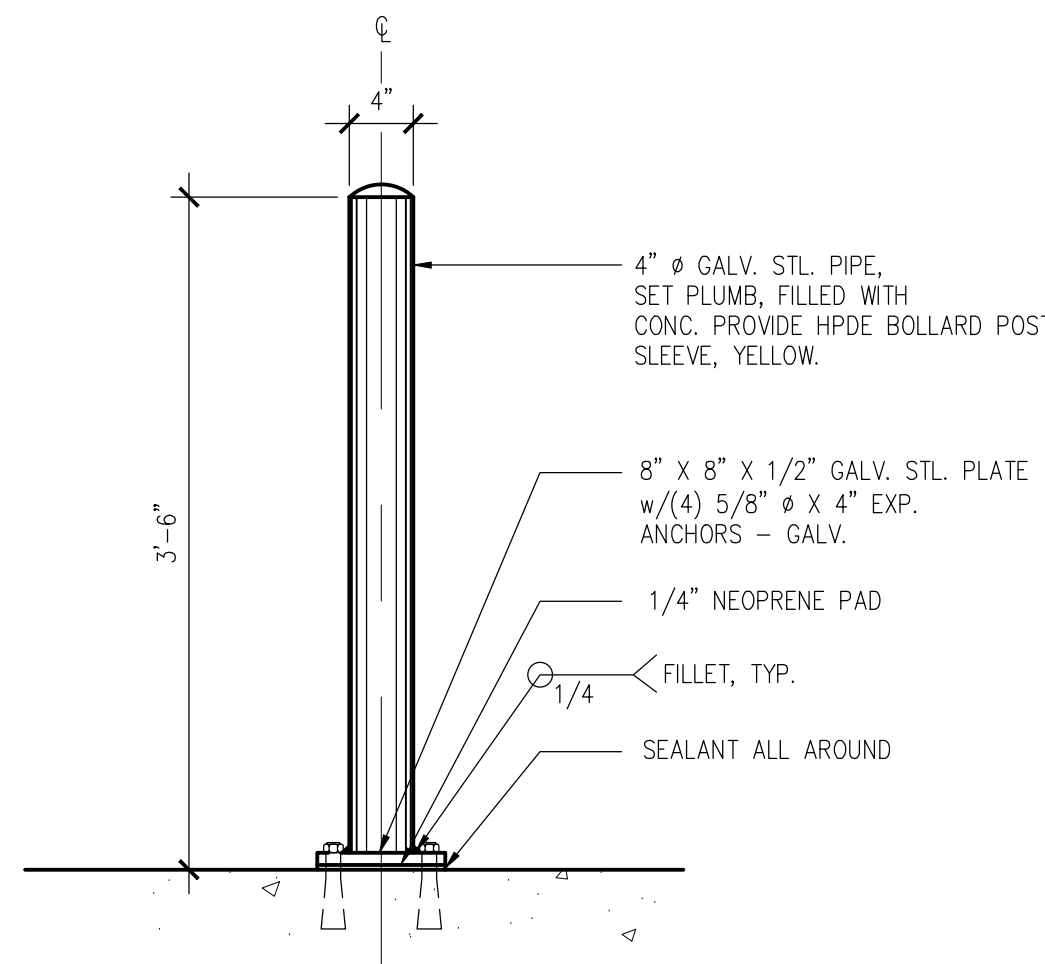
**2** TYPICAL PARKING STRIPING DETAIL  
A1.02 SCALE: 3/16" = 1'-0"



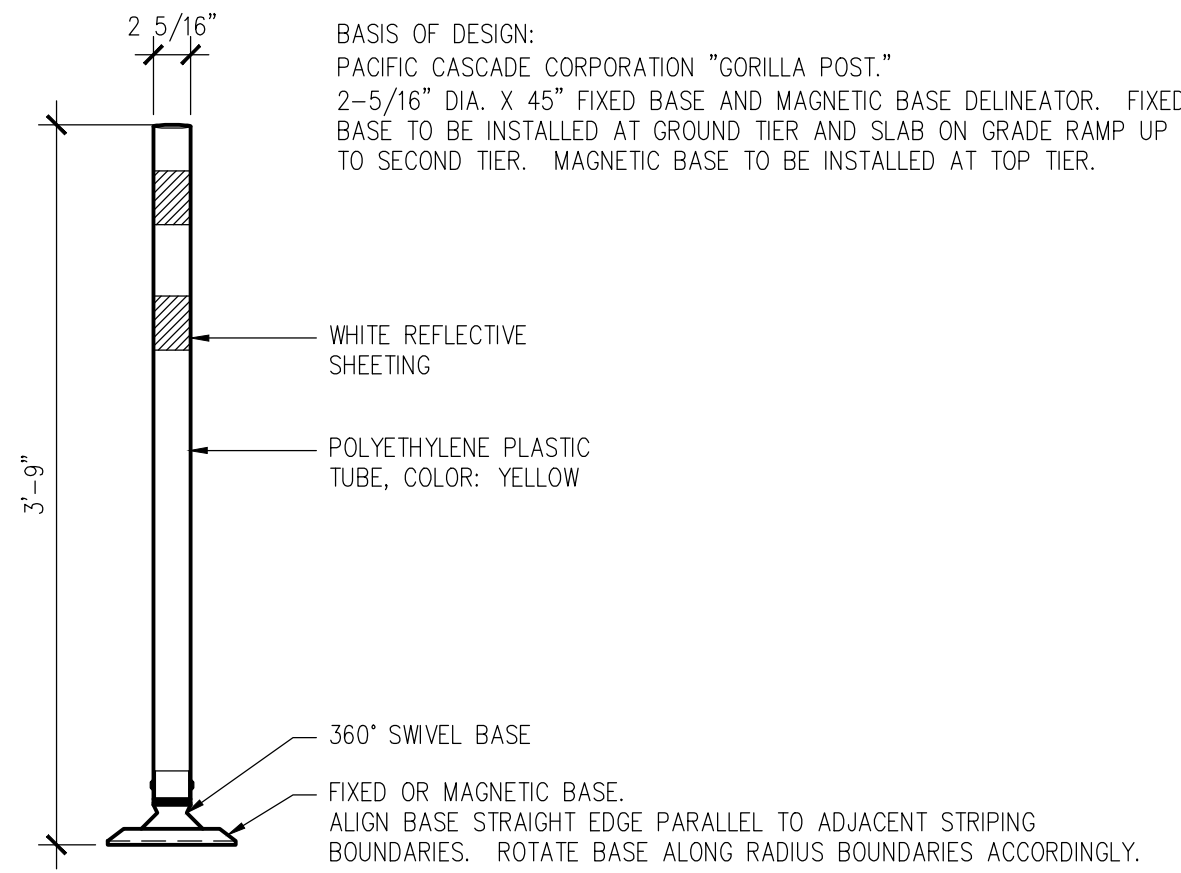
**3** RAIL TRAIL PARKING AND DO NOT PARKING STRIPING DETAIL  
A1.02 SCALE: 3/16" = 1'-0"



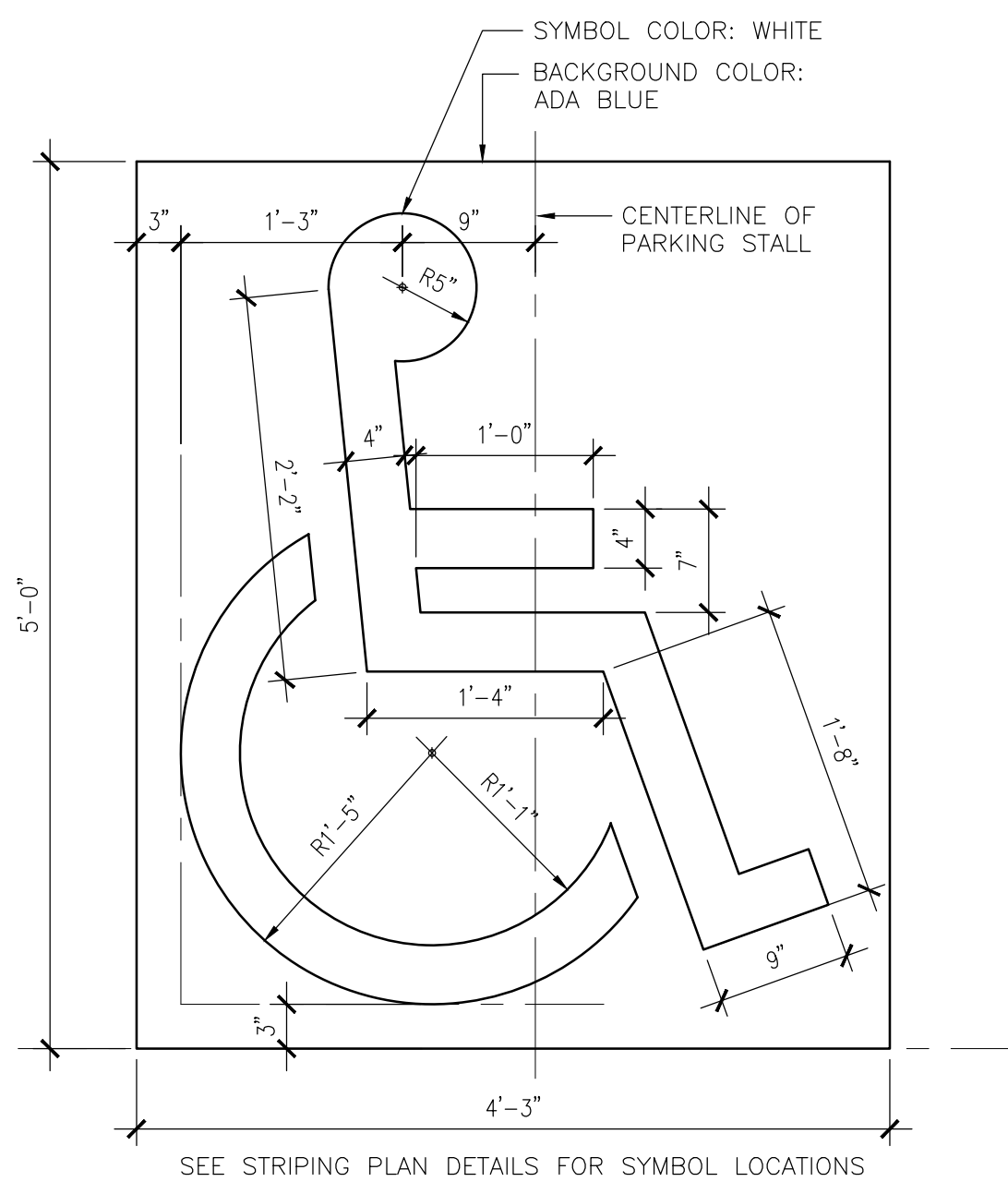
**4** PRECAST BOLLARD DETAIL  
A1.02 SCALE: 1" = 1'-0"



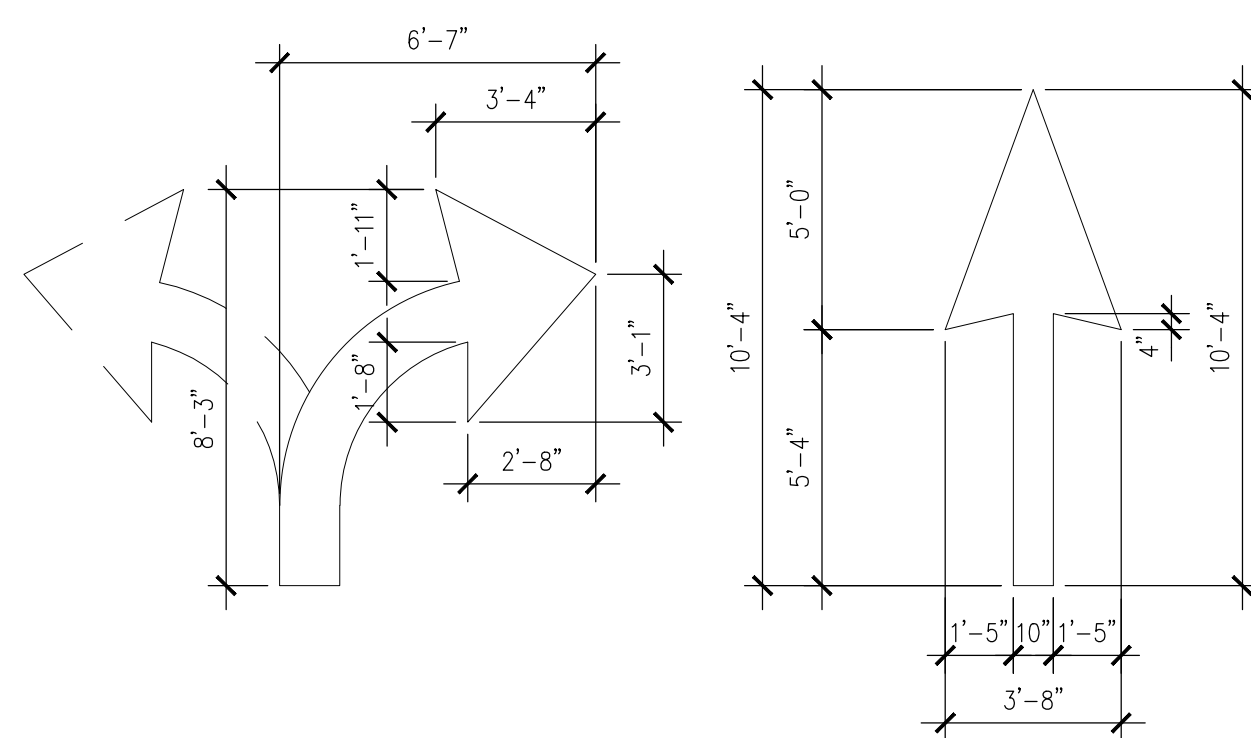
**5** STEEL BOLLARD DETAIL  
A1.02 SCALE: 1" = 1'-0"



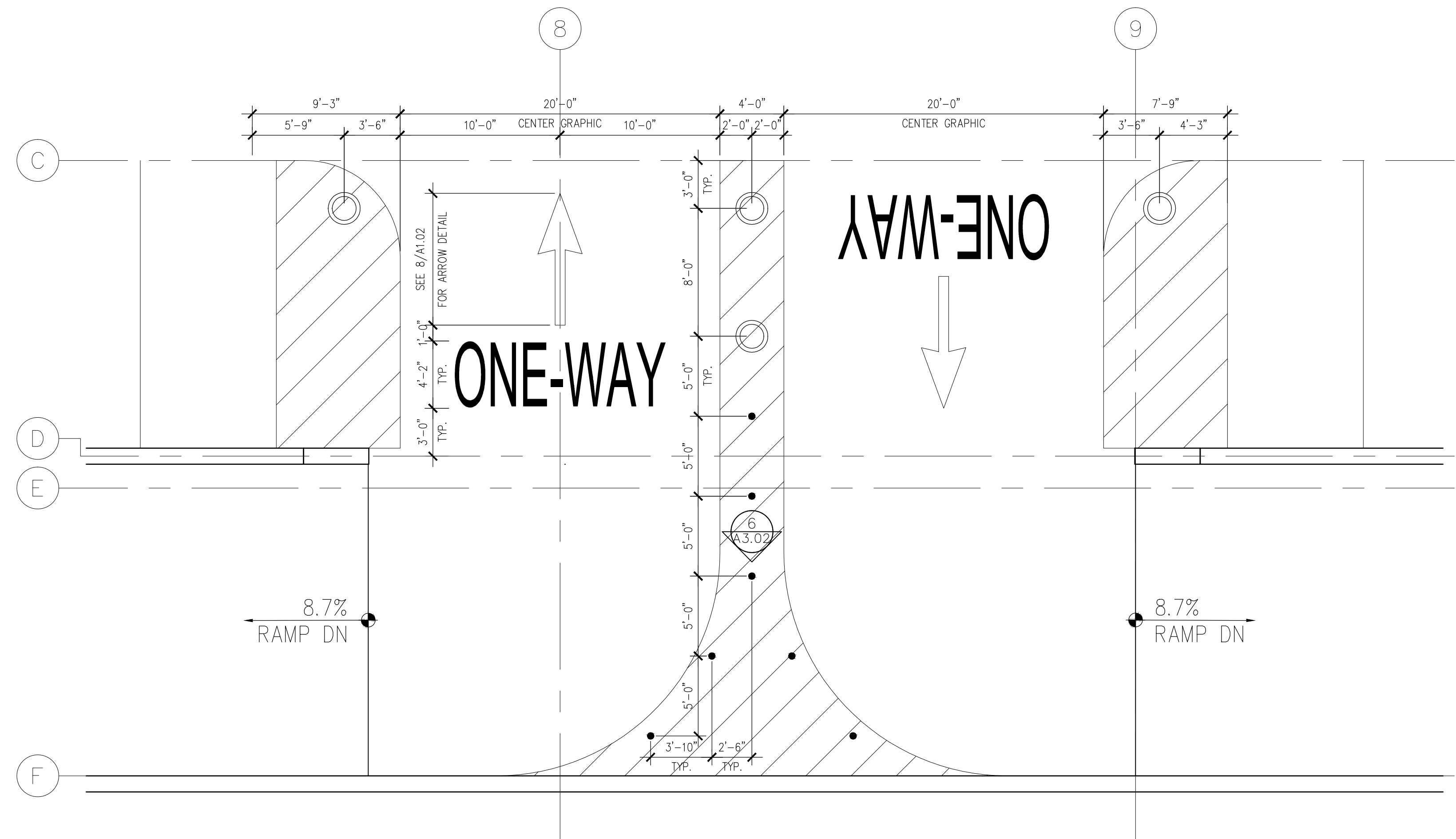
**6** FLEXIBLE BOLLARD DETAIL  
A1.02 SCALE: 1" = 1'-0"



**7** ACCESSIBLE FLOOR SYMBOL DETAIL  
A1.02 SCALE: 3/16" = 1'-0"



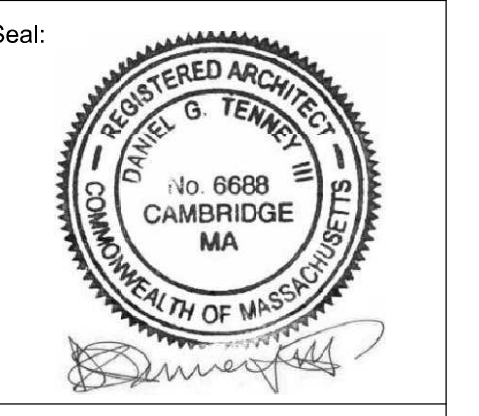
**8** PAINTED FLOOR ARROW DETAIL  
A1.02 SCALE: 1/4" = 1'-0"



**9** PAINTED FLOOR ARROW DETAIL  
A1.02 SCALE: 3/16" = 1'-0"

Revisions:

Rev	Date	Description



CONSTRUCTION DOCUMENTS

Date: 12/05/18  
Scale: AS NOTED  
Drawn By: LHJ  
Reviewed By: MTA  
Checked By: MTA  
Approved By: MTA

Revisions:

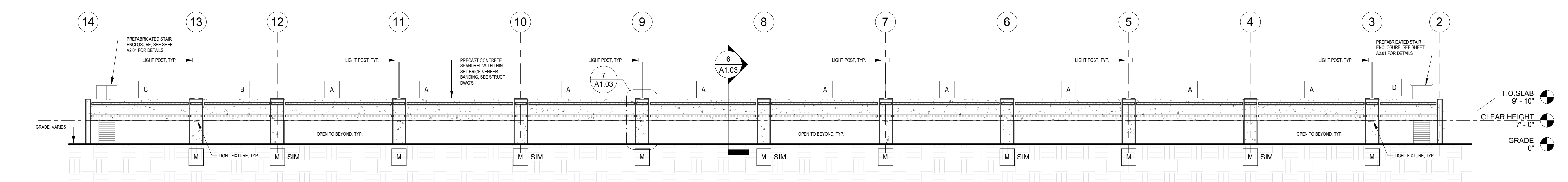
Rev	Date	Description



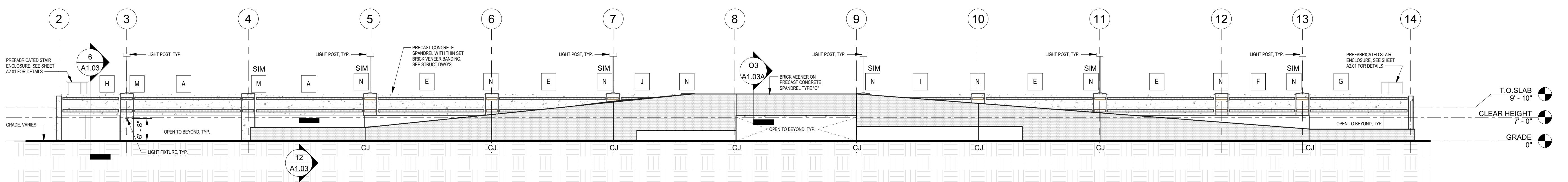
CONSTRUCTION DOCUMENTS

Date: **12/05/18**  
 Scale: AS NOTED  
 Drawn By: MMS  
 Reviewed By: JRC  
 Checked By: JRC  
 Approved By: DT

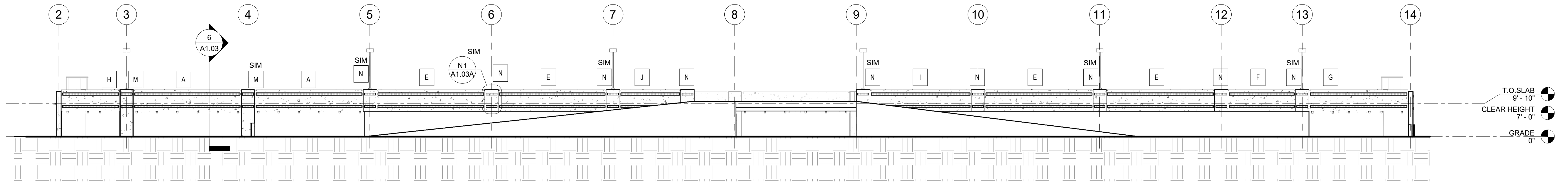
Drawing Title:  
**EXTERIOR ELEVATIONS & DETAILS**  
 Sheet Number:  
**A1.03**  
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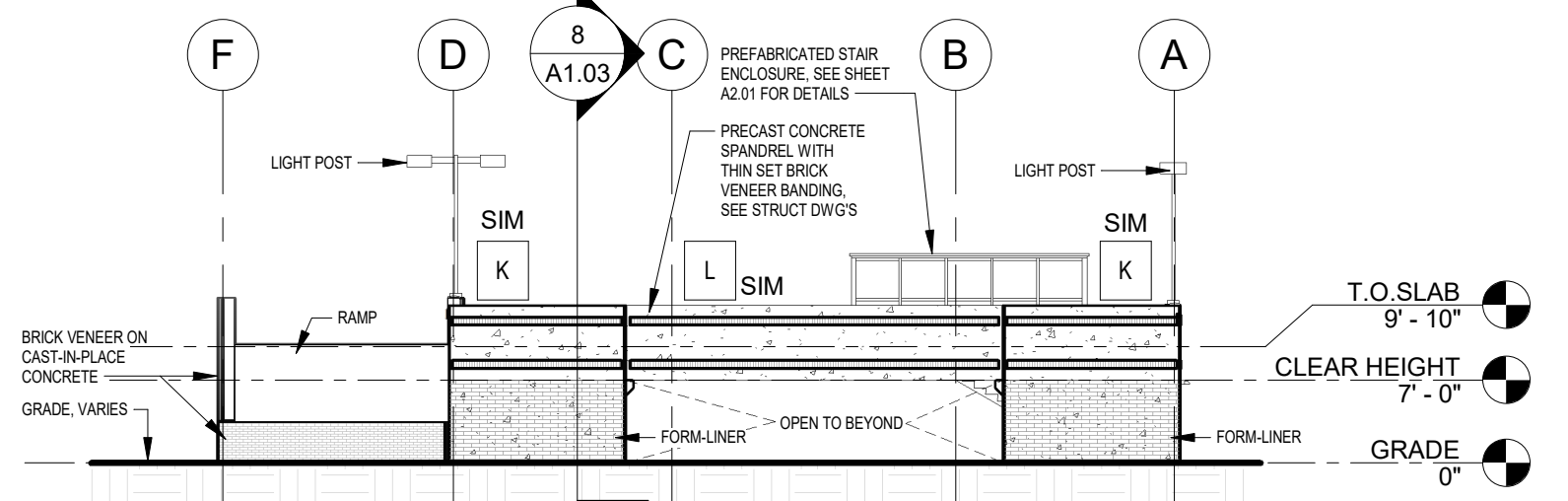
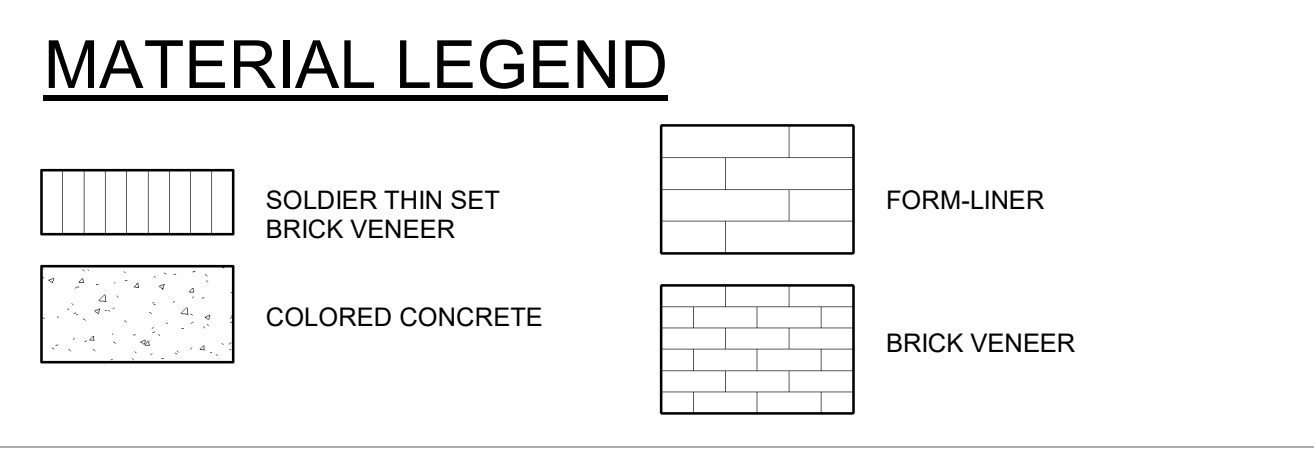
1 EAST ELEVATION  
 1/16" = 1'-0"



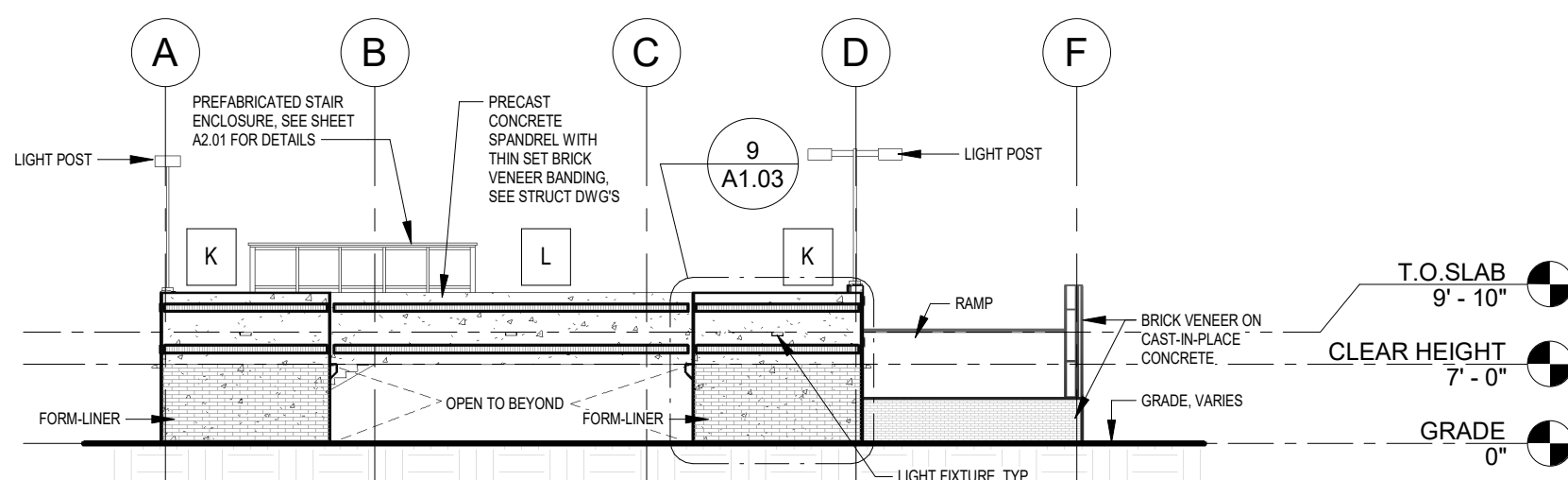
2 WEST ELEVATION  
 1/16" = 1'-0"



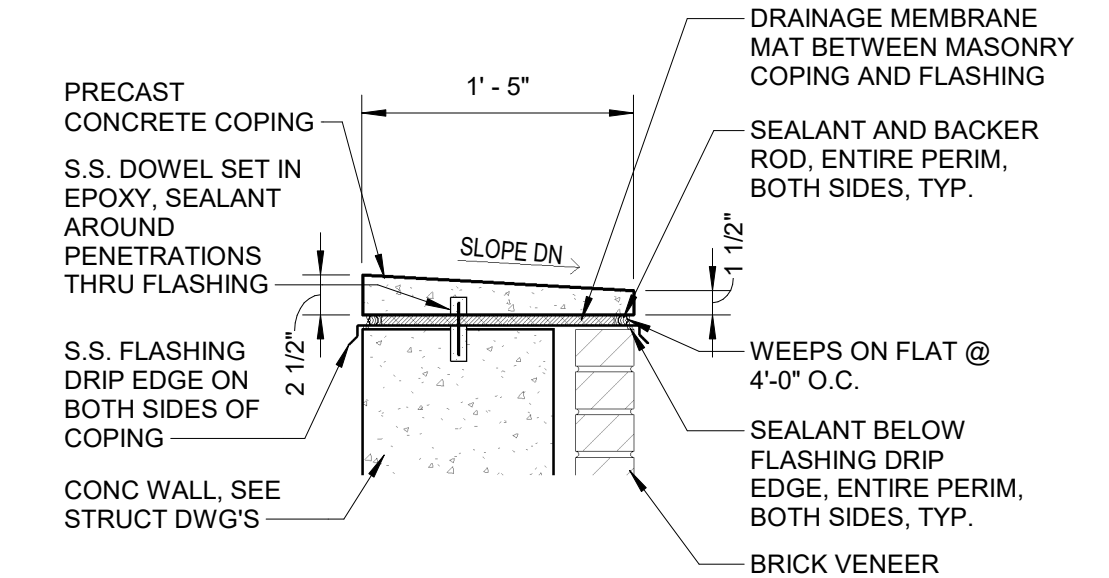
3 WEST ELEVATION - BEYOND  
 1/16" = 1'-0"



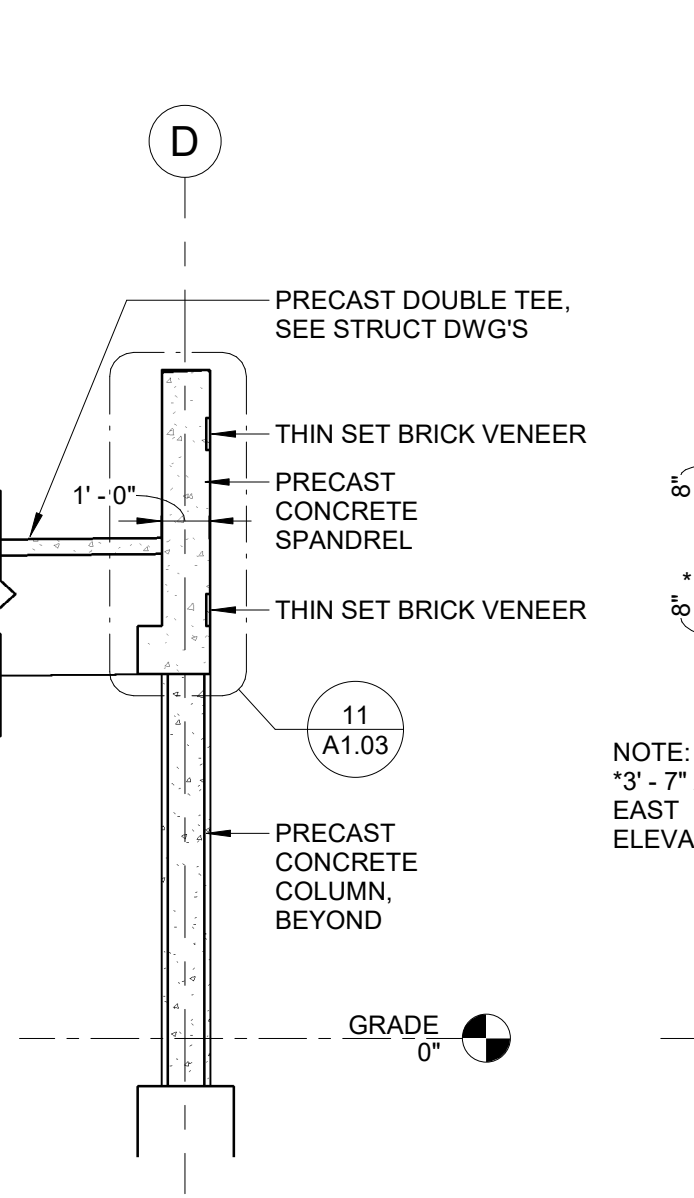
4 SOUTH ELEVATION  
 1/16" = 1'-0"



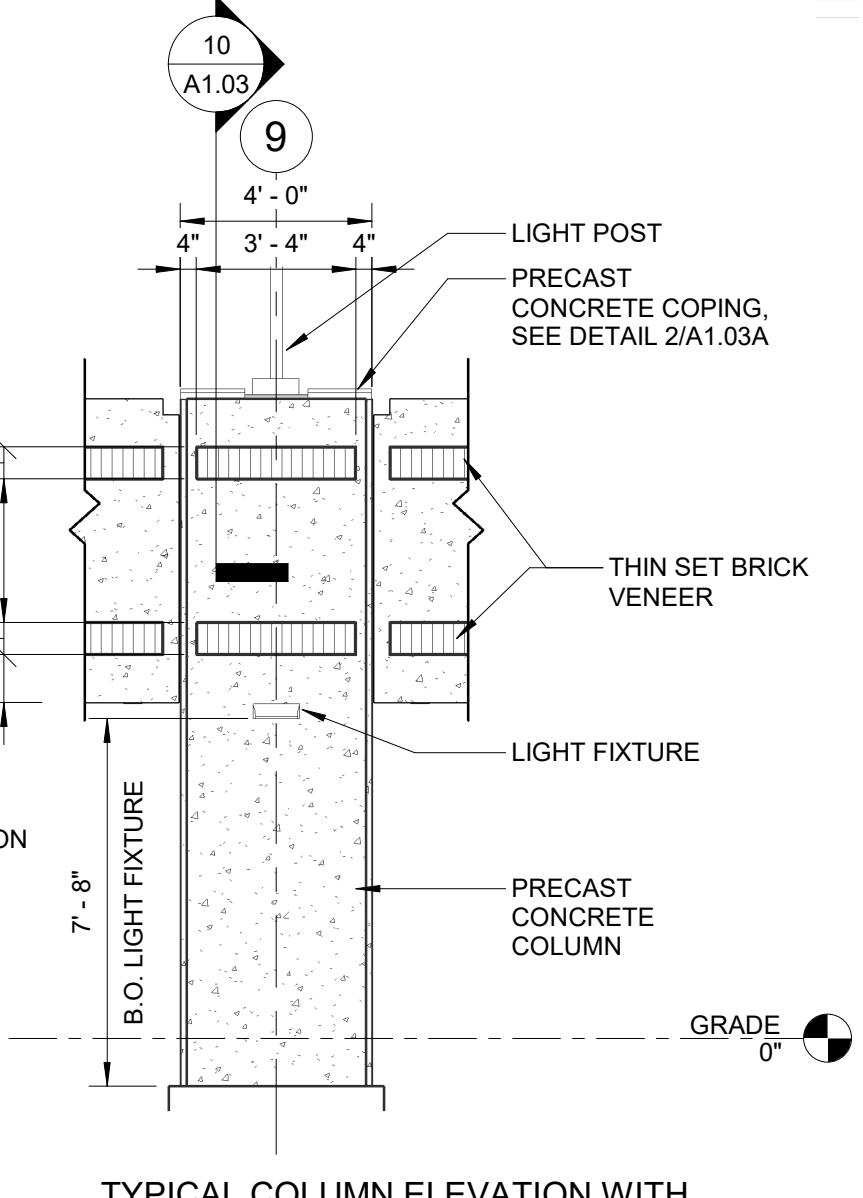
5 NORTH ELEVATION  
 1/16" = 1'-0"



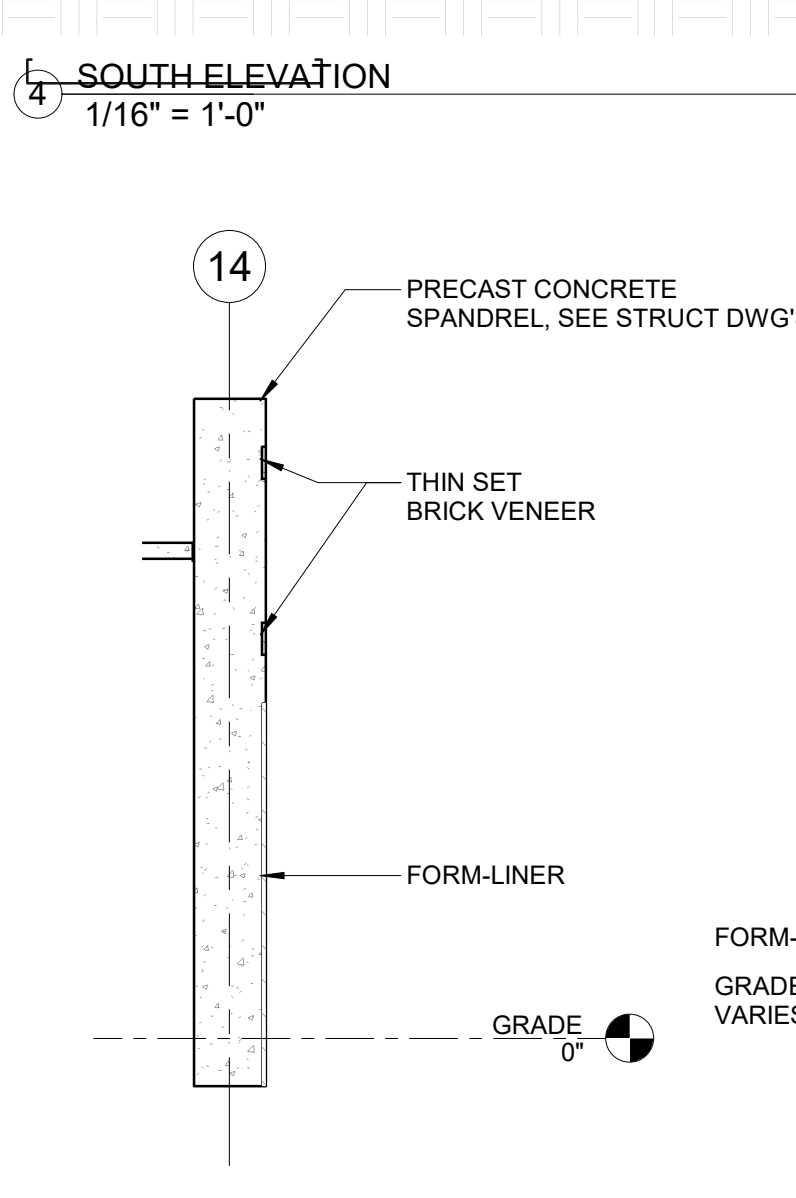
13 PRE-CAST COPING AT BRICK VENEER  
 1" = 1'-0"



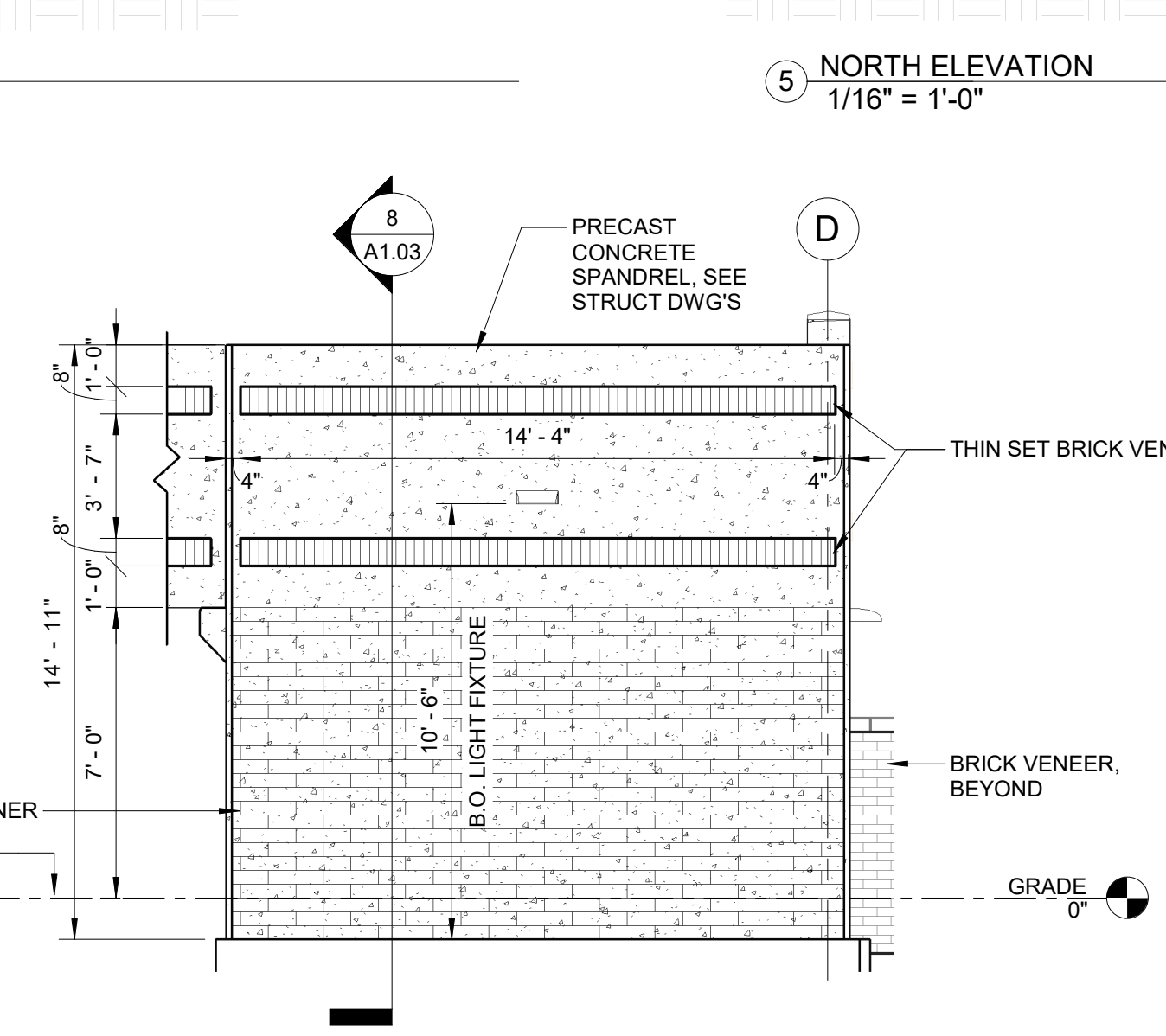
6 TYPICAL SPANDREL SECTION  
 1/4" = 1'-0"



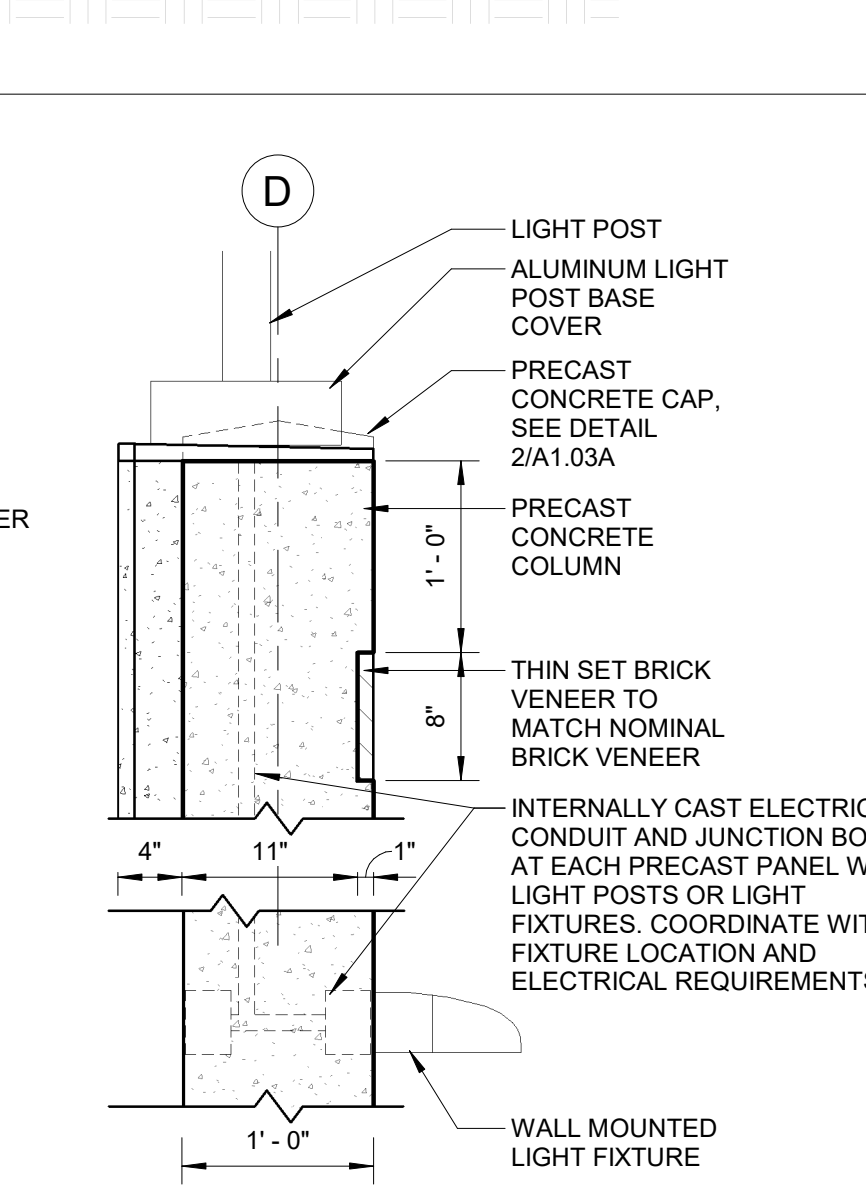
7 TYPICAL COLUMN ELEVATION WITH LIGHT POST AND WALL MOUNTED FIXTURE  
 1/4" = 1'-0"



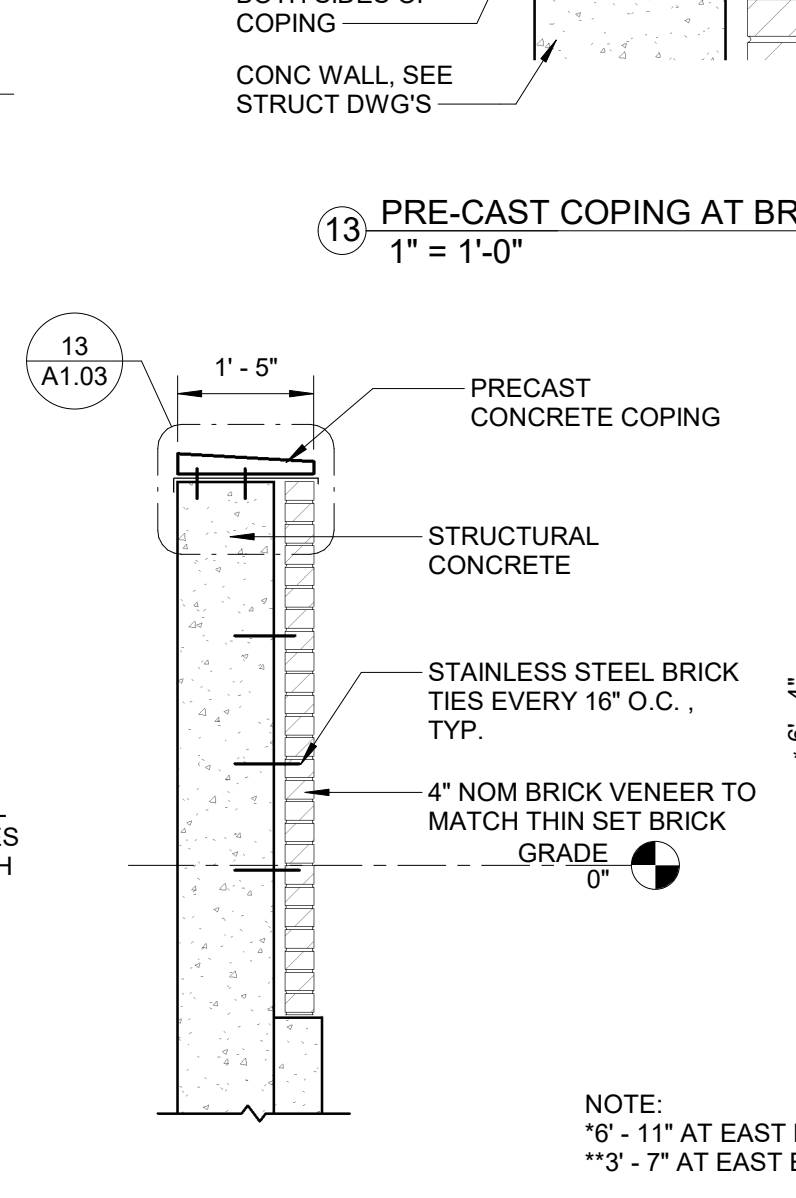
8 TYPICAL SECTION AT END WALL w/ FORM-LINER  
 1/4" = 1'-0"



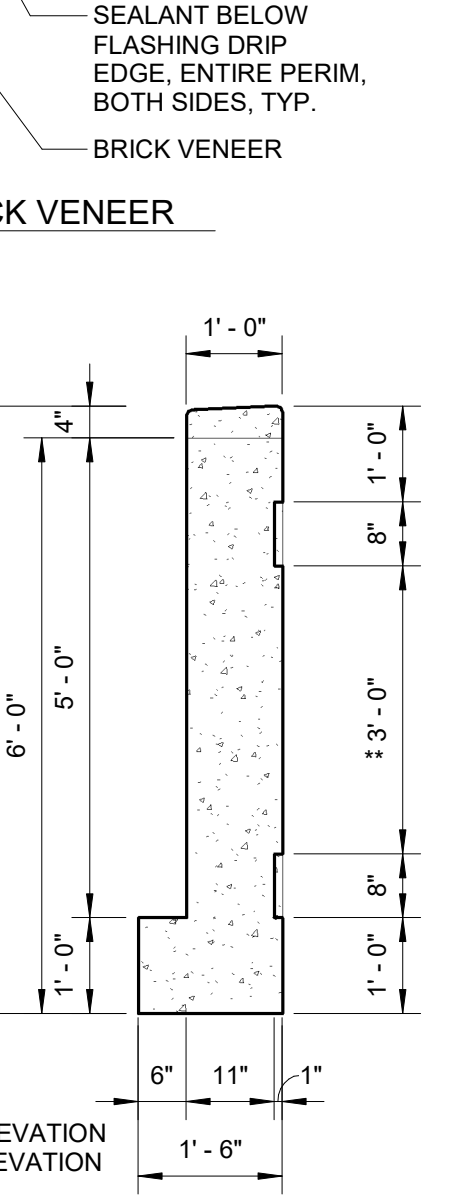
9 TYPICAL END WALL w/ FORM-LINER  
 1/4" = 1'-0"



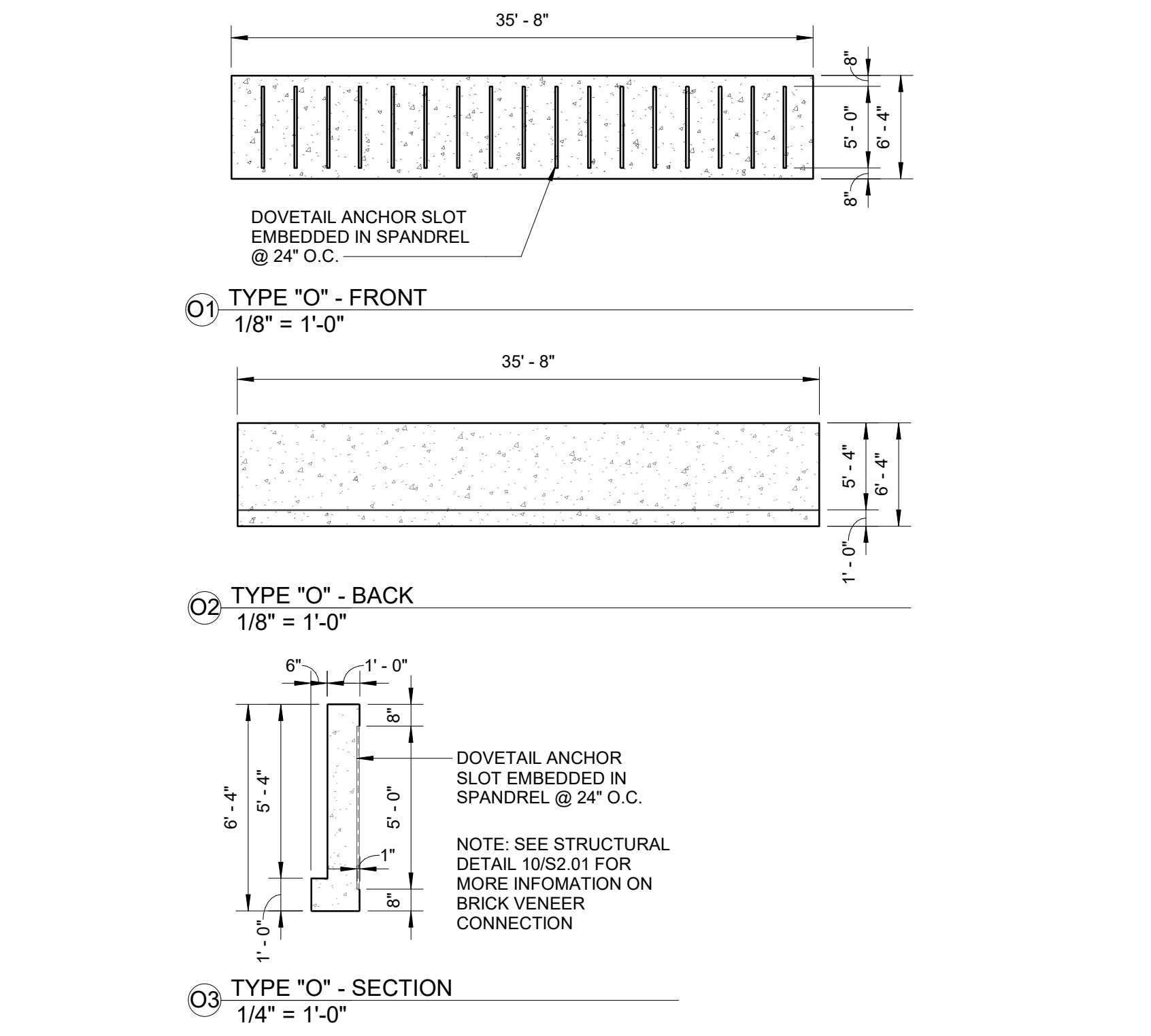
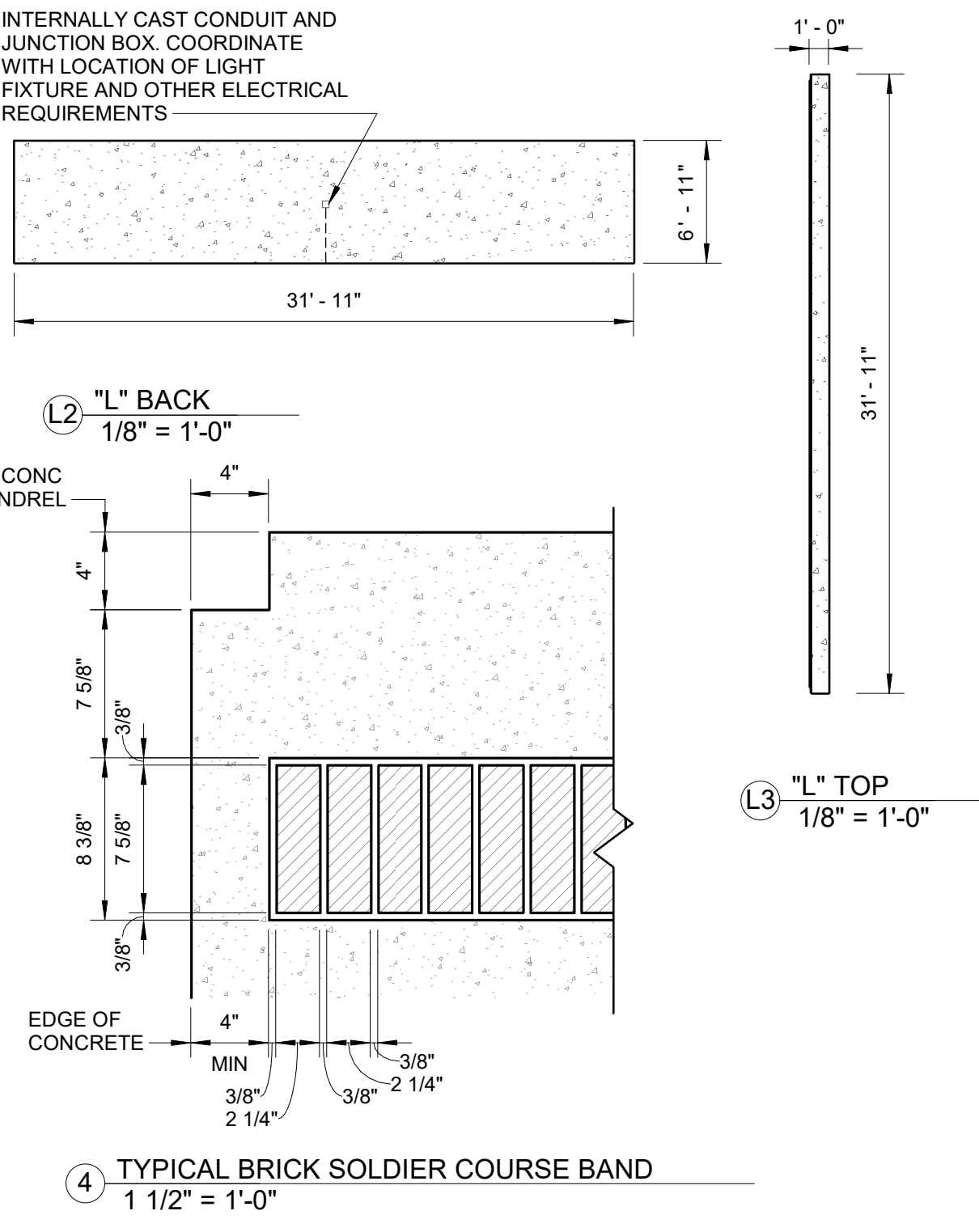
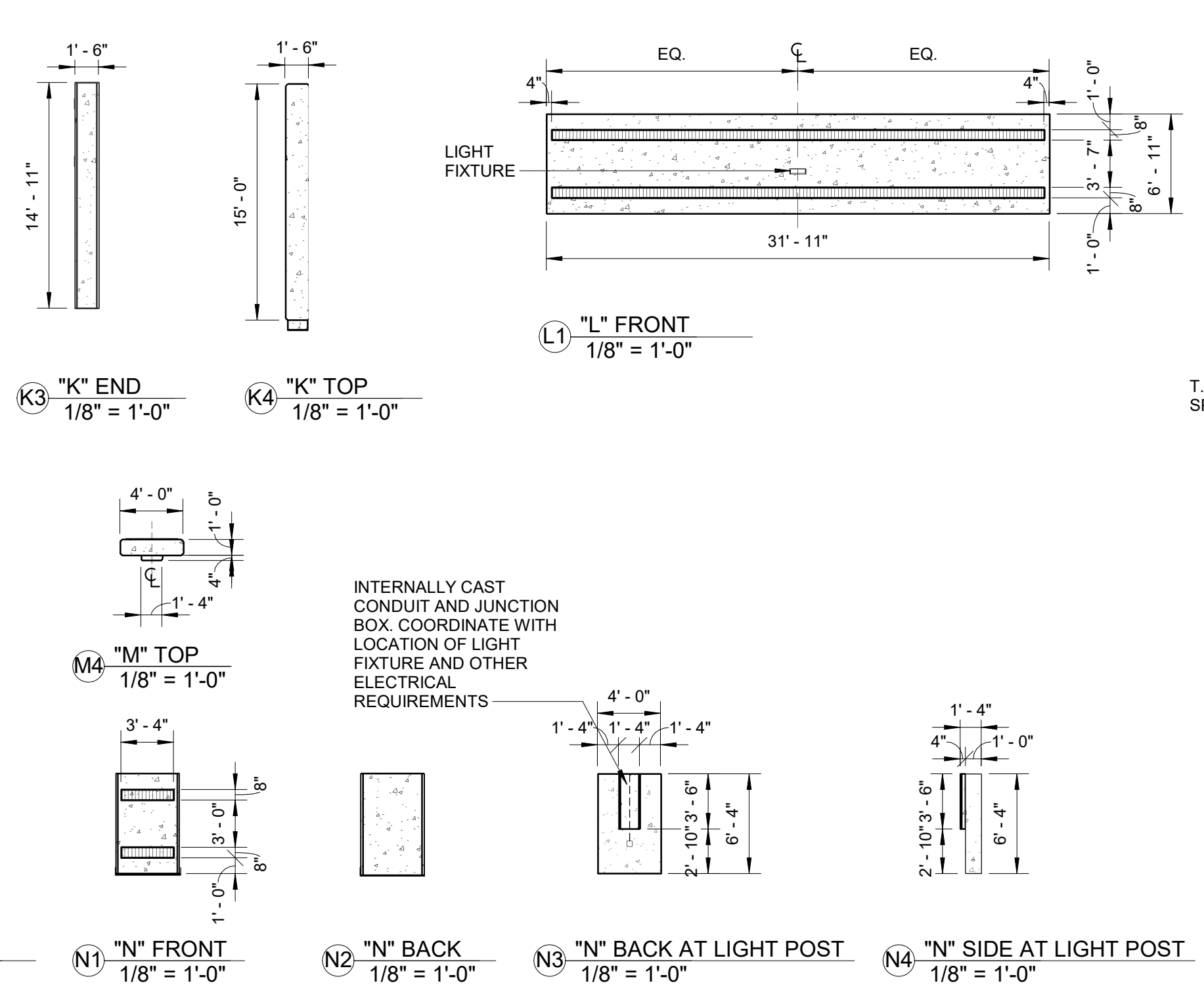
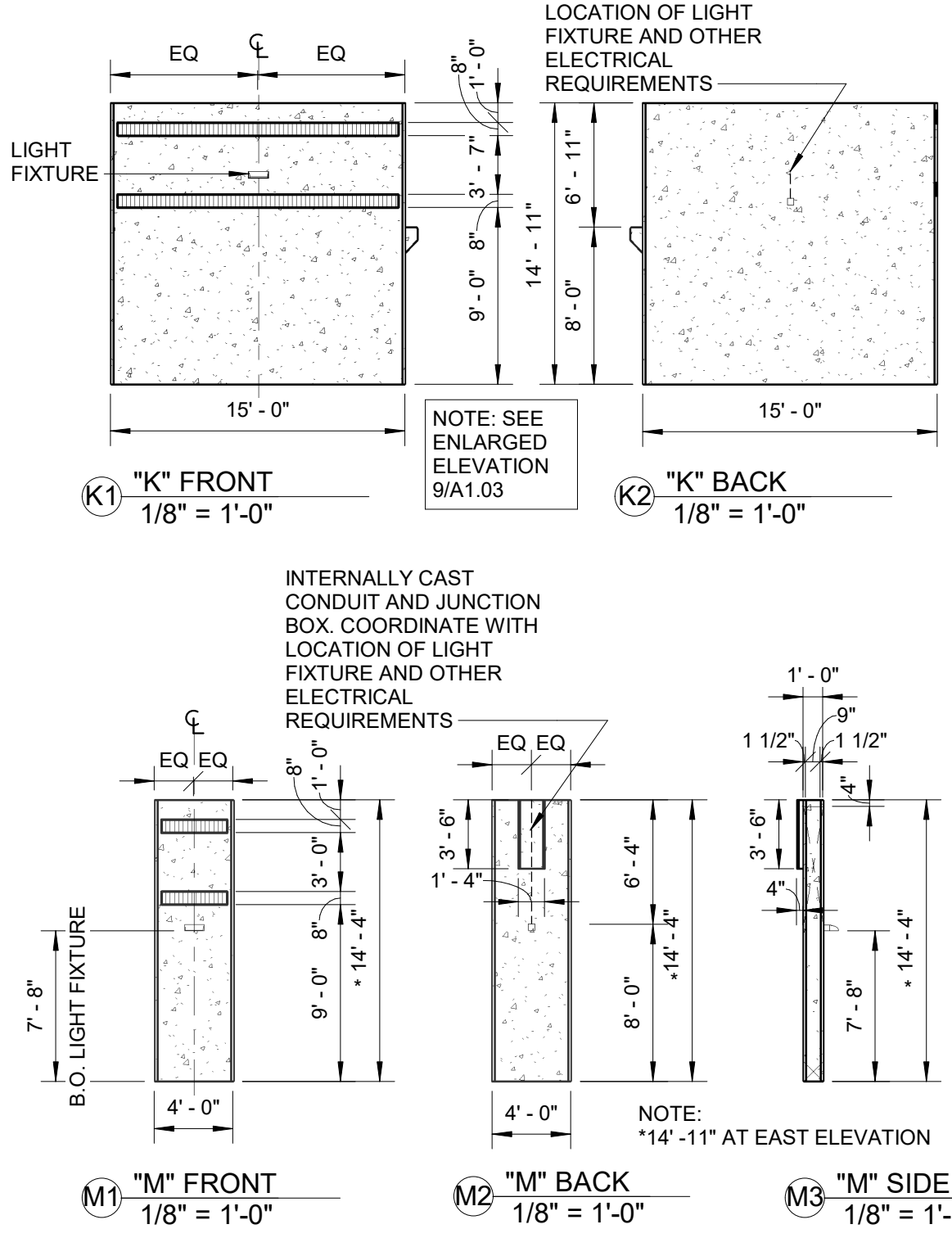
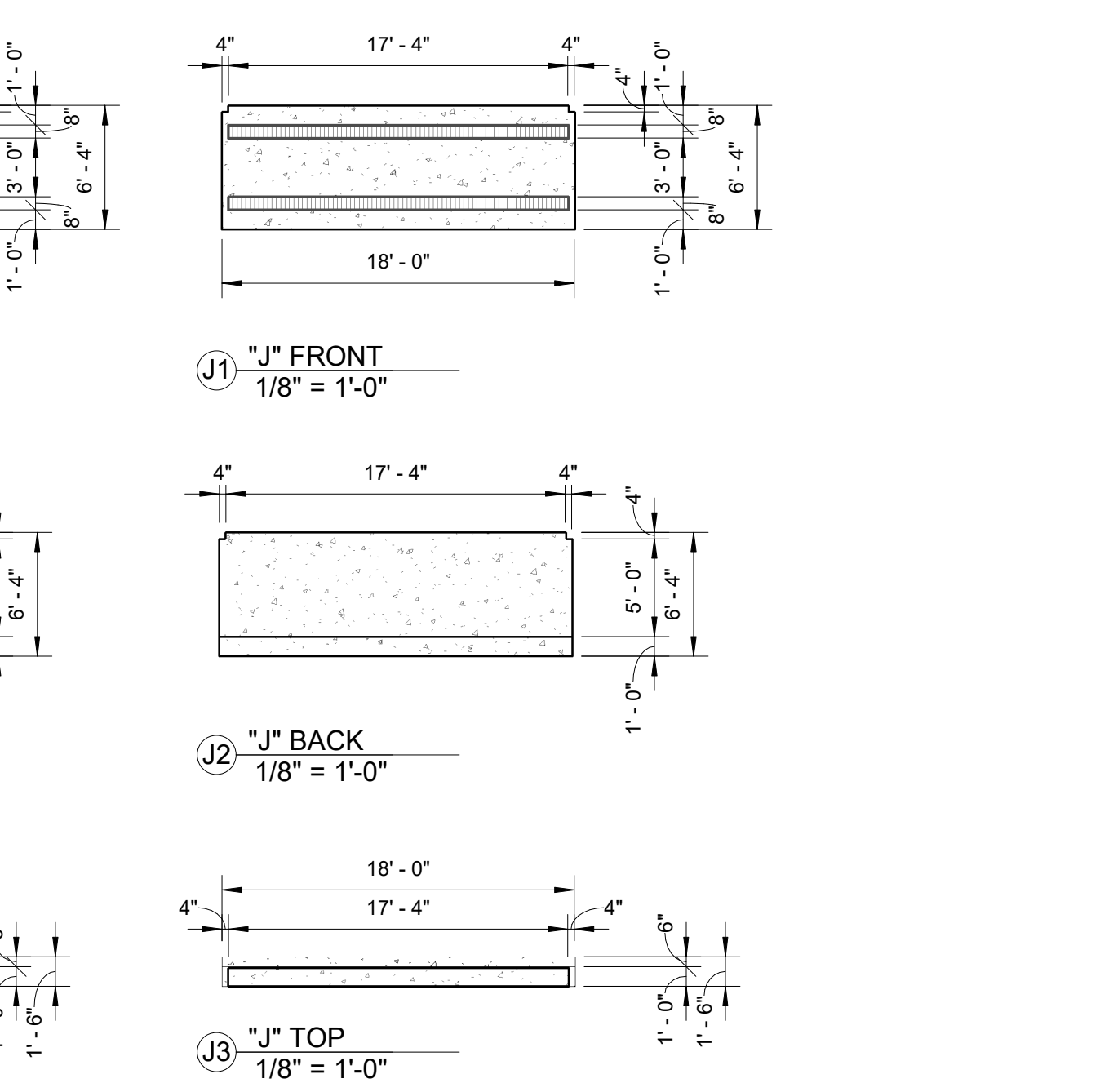
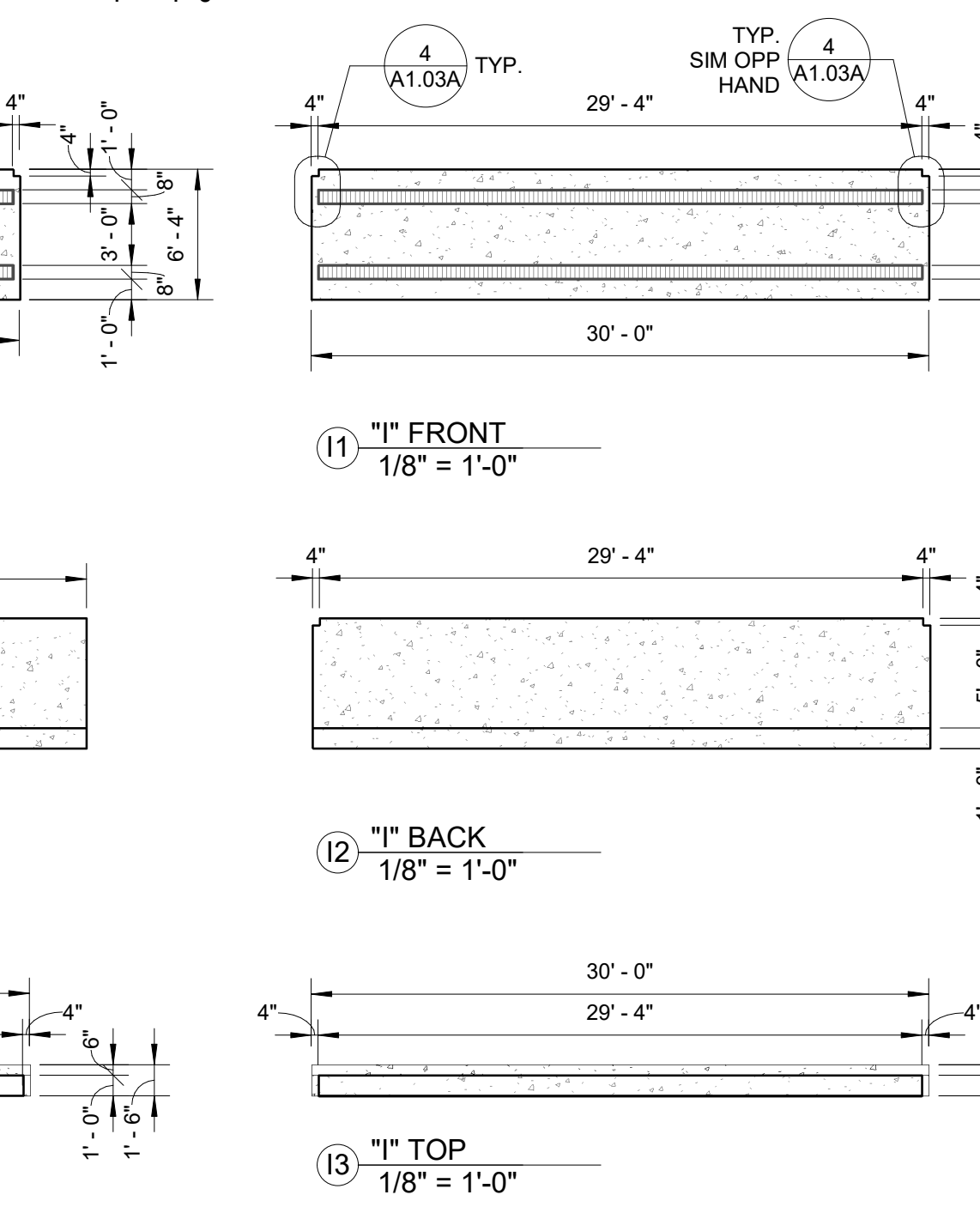
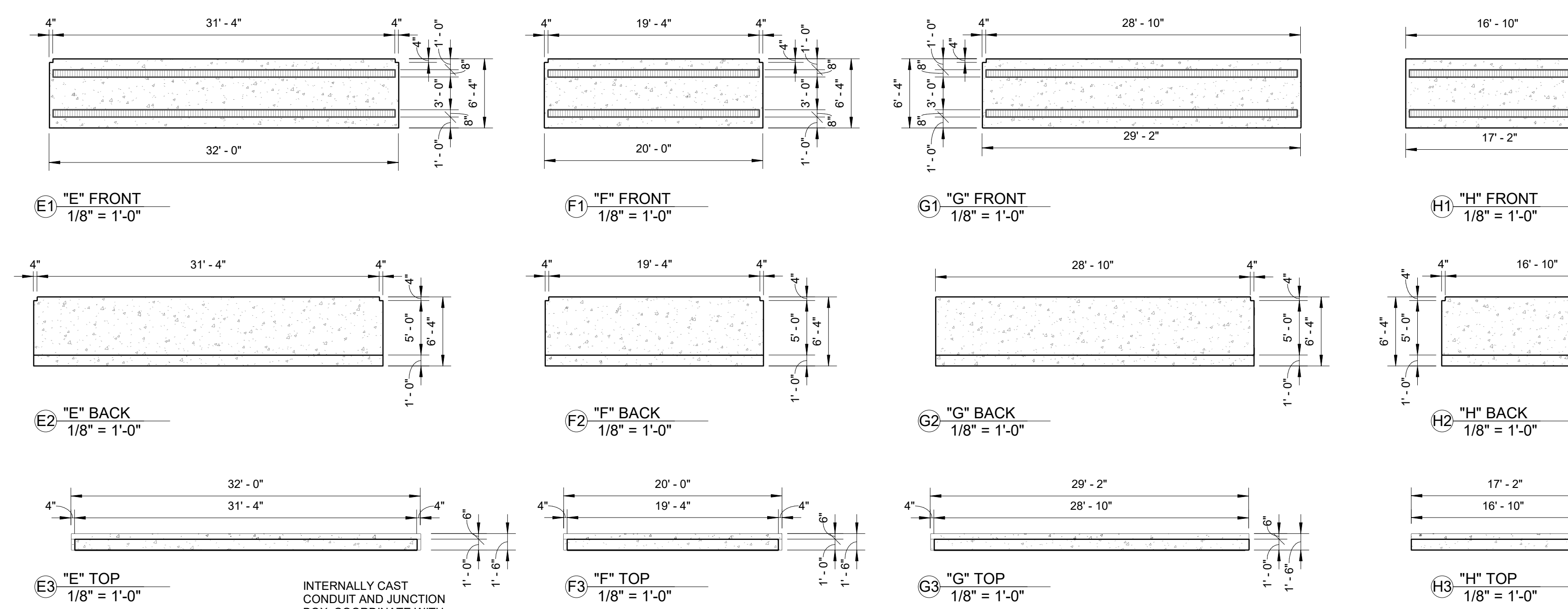
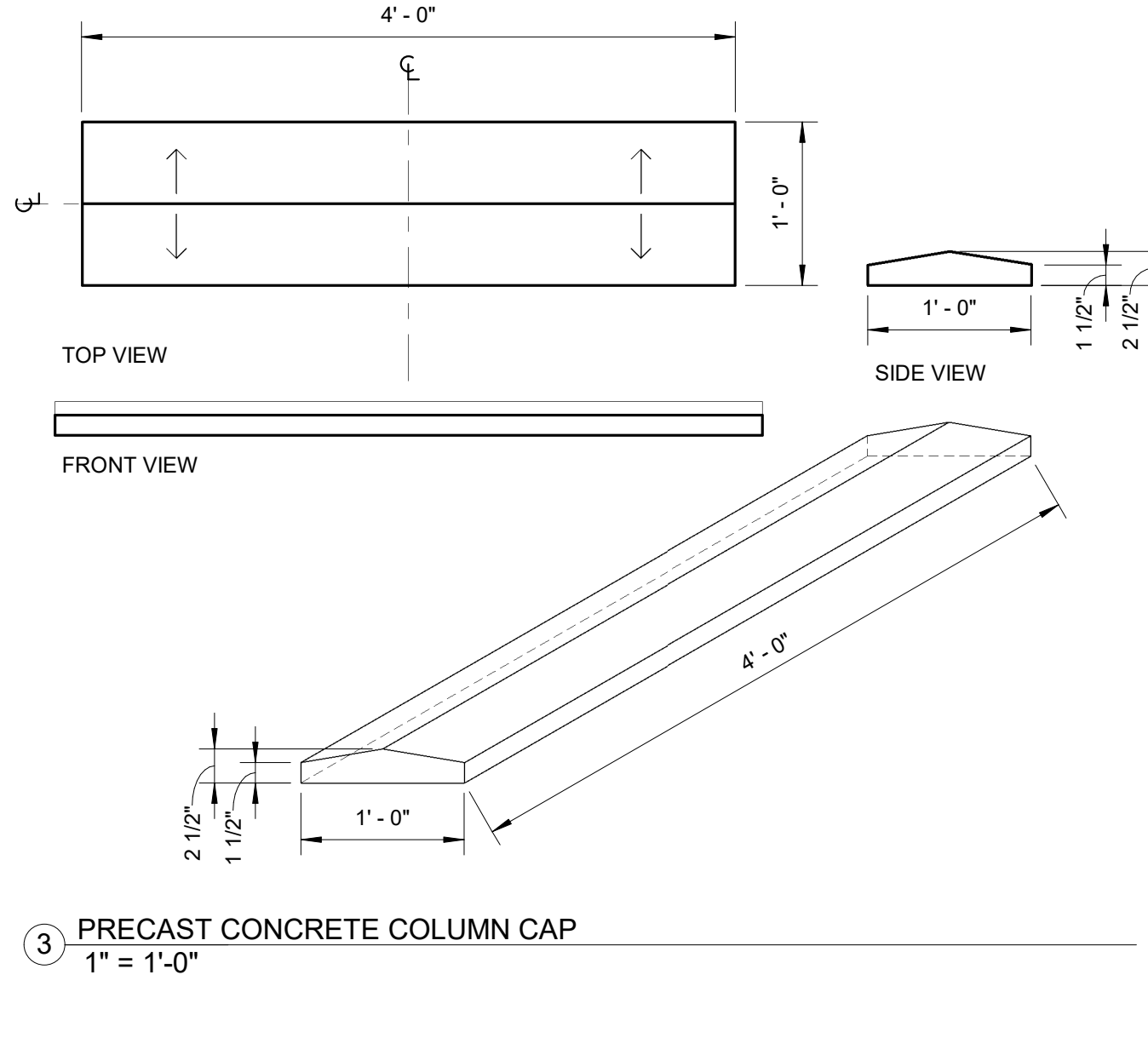
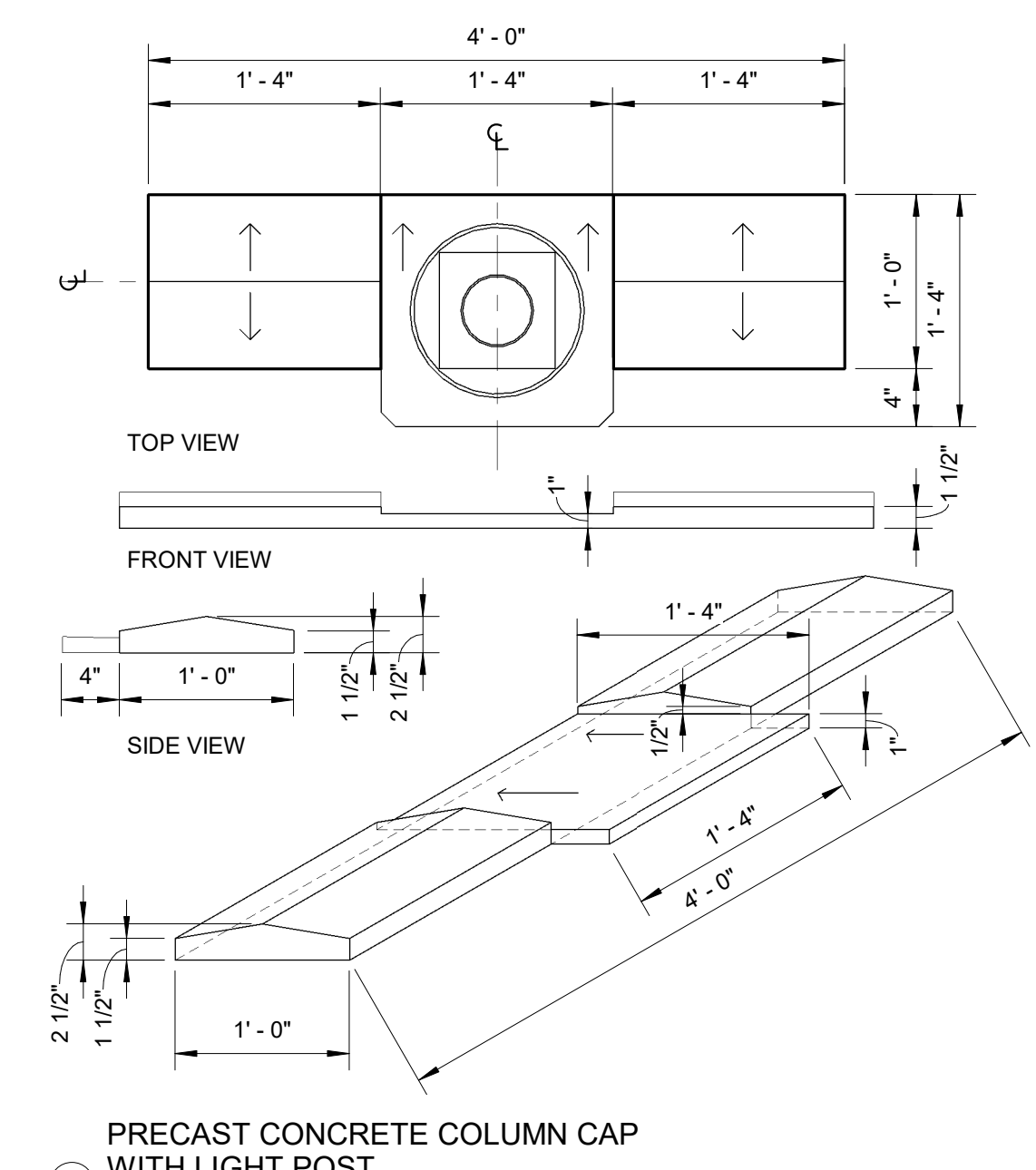
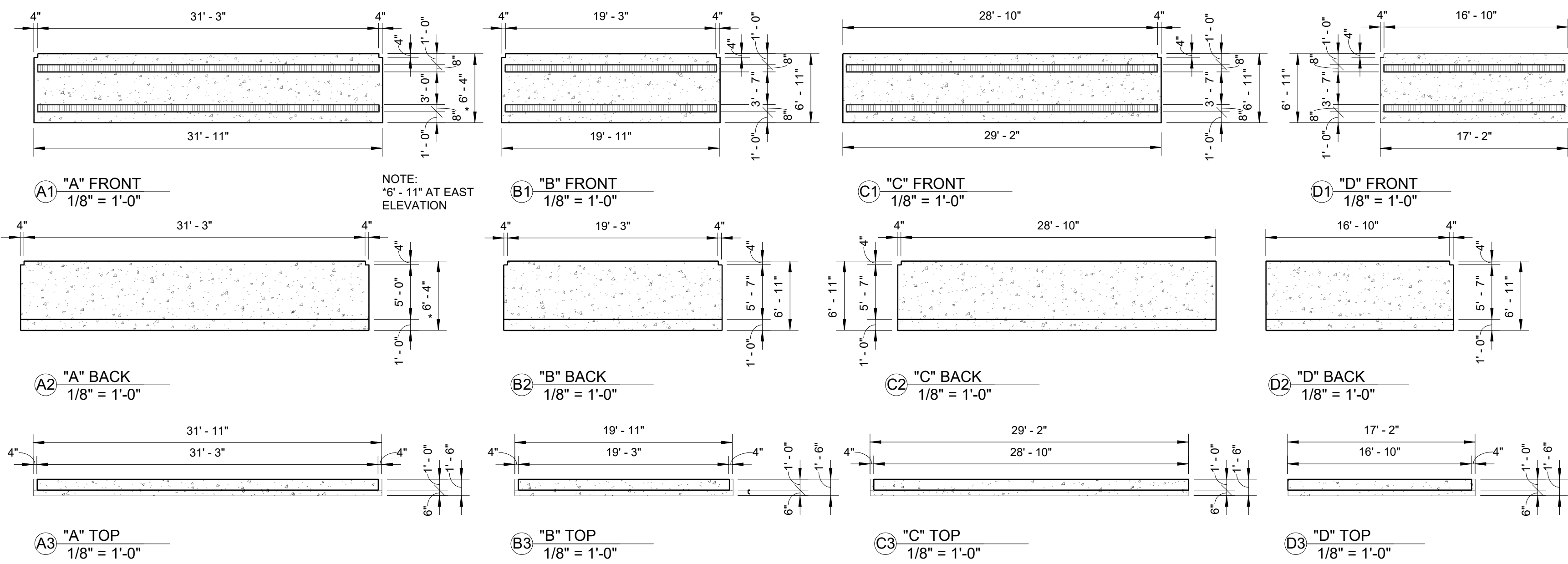
10 TYPICAL DETAIL AT COLUMN WITH LIGHT POST  
 1" = 1'-0"



11 TYPICAL BRICK VENEER DETAIL AT RAMP  
 1/2" = 1'-0"



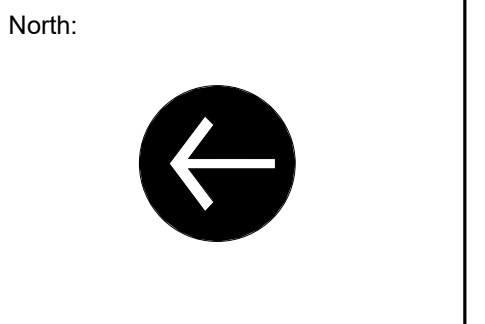
12 SPANDREL SECTION DETAIL  
 1/2" = 1'-0"



Project:  
**MMMM**  
 MONTAGUSETT REGIONAL TRANSIT AUTHORITY  
 AYER COMMUTER RAIL PARKING FACILITY  
 AYER, MA

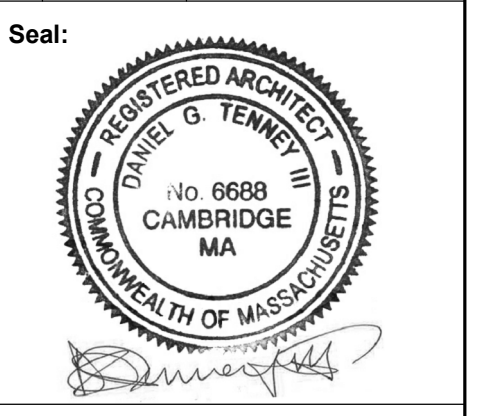
Weston & Sampson  
 100 Foxborough Boulevard Suite 250  
 Foxborough, MA 02035  
 (508) 698-3034 (800) 544-5450  
 www.westonandsampson.com

Consultants:  
**TimHaas**  
 550 Townshill Lane Rd. Suite 100,  
 West Hill, MA 01922  
 T: (408) 342-2300 F: (408) 342-0222  
 http://www.timhaas.com



Revisions:

Rev	Date	Description

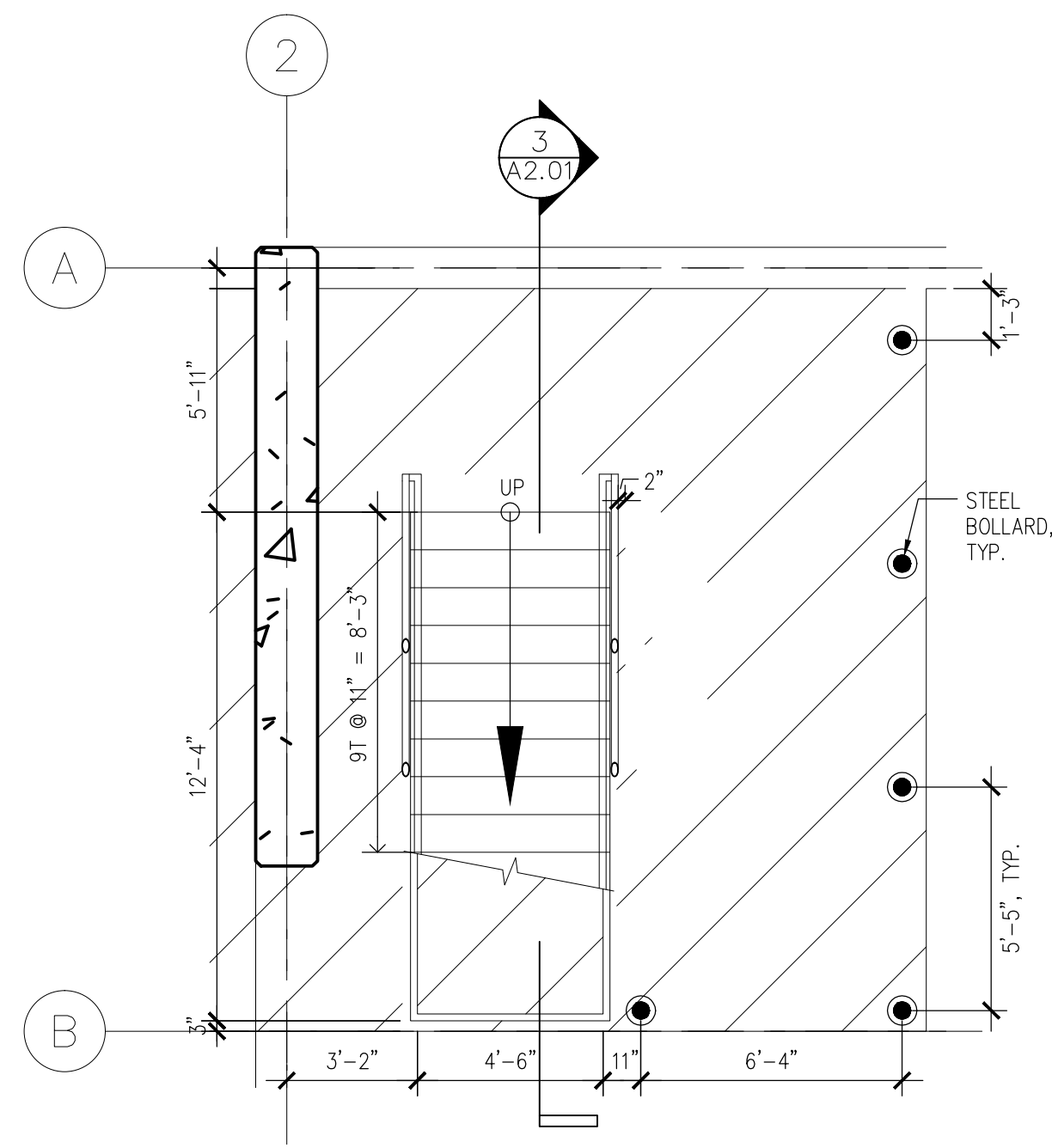


CONSTRUCTION DOCUMENTS

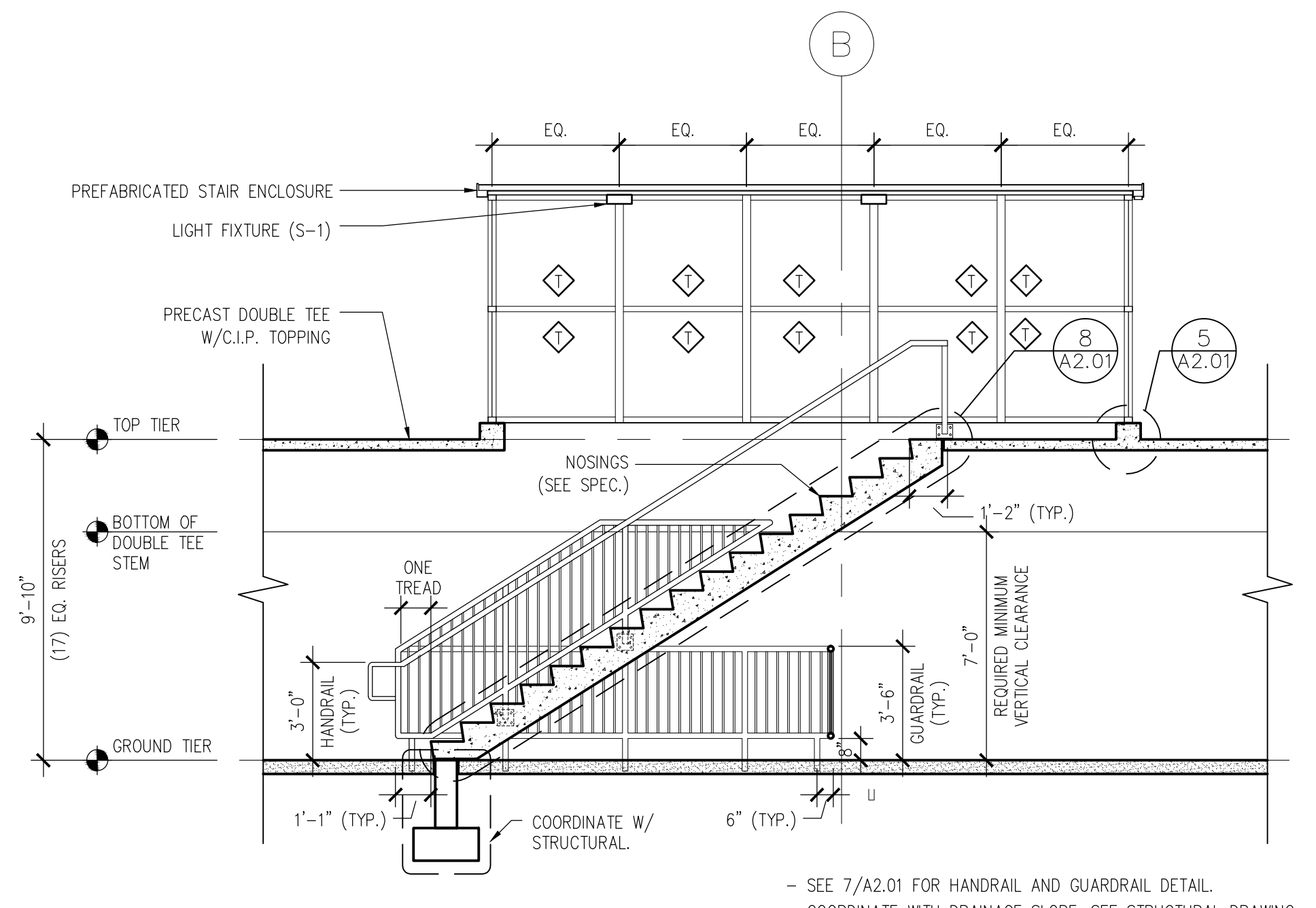
Date: 12/05/18  
 Scale: AS NOTED  
 Drawn By: MMS  
 Reviewed By: JRC  
 Checked By: JRC  
 Approved By: DT

Drawing Title:  
**PRE-CAST CONCRETE SHAPES**

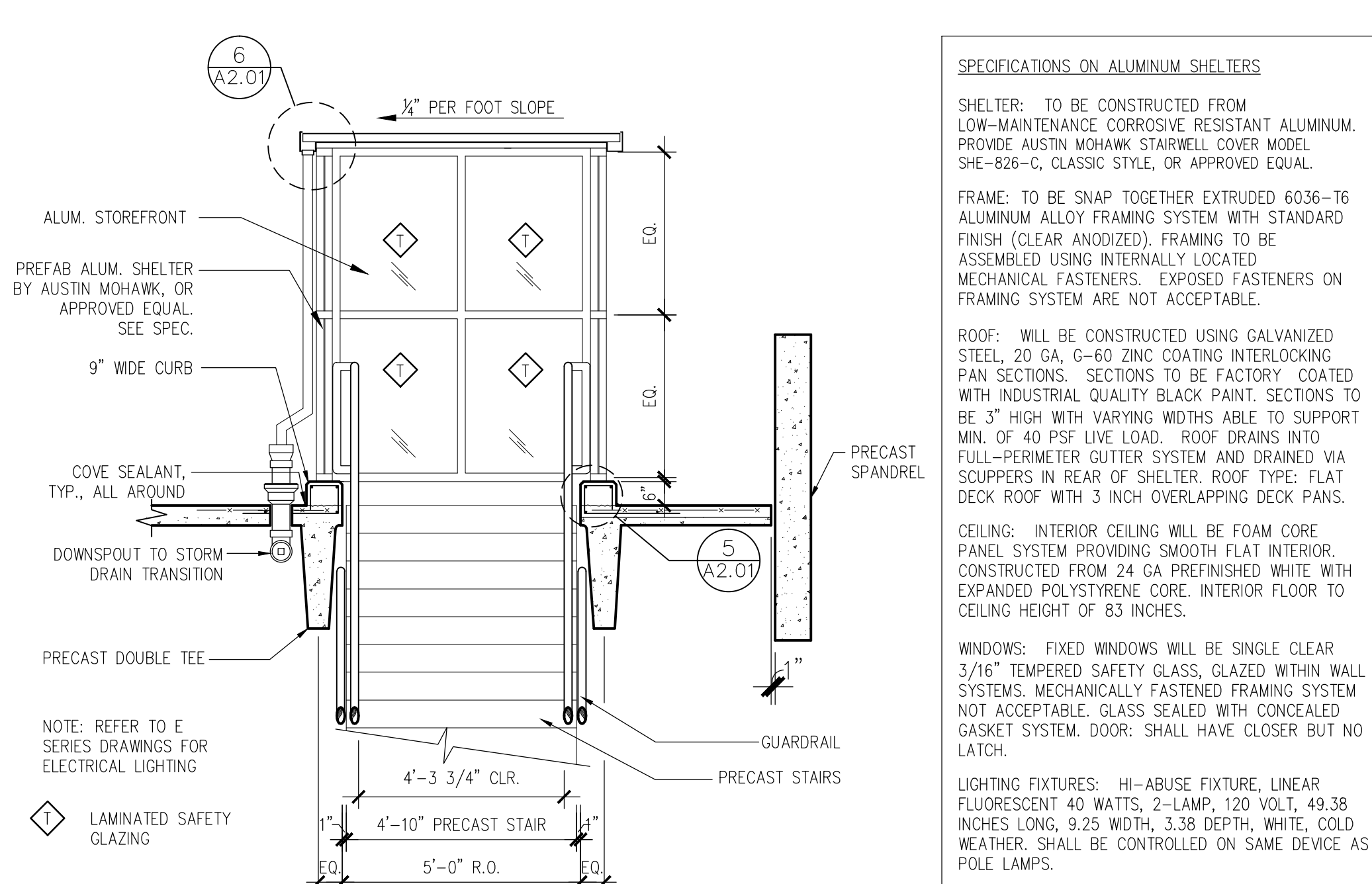
Sheet Number:  
**A1.03A**



**1** STAIR A ENLARGED GROUND TIER PLAN  
A2.01 SCALE: 1/4" = 1'-0"



**3** STAIR A SECTION  
A2.01 SCALE: 1/4" = 1'-0"



**4** STAIR A SECTION  
A2.01 SCALE: 3/8" = 1'-0"

**SPECIFICATIONS ON ALUMINUM SHELTERS**

SHELTER: TO BE CONSTRUCTED FROM LOW-MAINTENANCE CORROSIVE RESISTANT ALUMINUM. PROVIDE AUSTIN MOHAWK STARWELL COVER MODEL SHE-626-C, CLASSIC STYLE, OR APPROVED EQUAL.

FRAME: TO BE SNAP TOGETHER EXTRUDED 6036-T6 ALUMINUM ALLOY FRAMING SYSTEM WITH STANDARD FINISH (CLEAR ANODIZED). FRAMING TO BE ASSEMBLED USING INTERNALLY LOCATED MECHANICAL FASTENERS. EXPOSED FASTENERS ON FRAMING SYSTEM ARE NOT ACCEPTABLE.

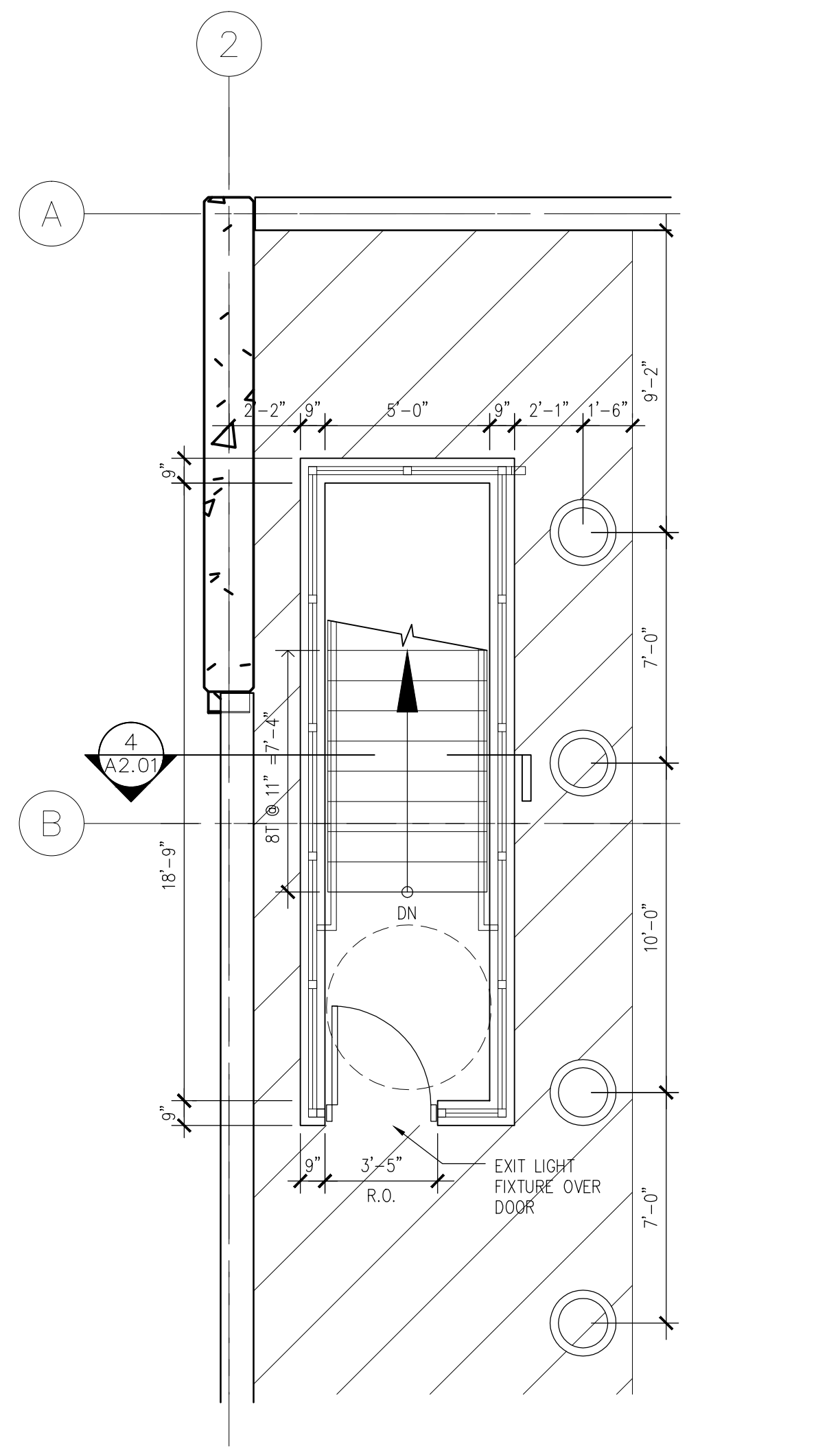
ROOF: WILL BE CONSTRUCTED USING GALVANIZED STEEL, 20 GA, G-60 ZINC COATING INTERLOCKING PAN/SECTIONS. SECTIONS TO BE FACTORY COATED WITH INDUSTRIAL QUALITY BLACK PAINT. SECTIONS TO BE 3" HIGH WITH VARYING WIDTHS ABLE TO SUPPORT MIN. OF 40 PSF LIVE LOAD. ROOF DRAINS INTO FULL-PERIMETER GUTTER SYSTEM AND DRAINED VIA SCUPPERS IN REAR OF SHELTER. ROOF TYPE: FLAT DECK ROOF WITH 3 INCH OVERLAPPING DECK FANS.

CEILING: INTERIOR CEILING WILL BE FOAM CORE PANEL SYSTEM PROVIDING SMOOTH FLAT INTERIOR. CONSTRUCTED FROM 24 GA. PREFINISHED WHITE WITH EXPANDED POLYSTYRENE CORE. INTERIOR FLOOR TO CEILING HEIGHT OF 83 INCHES.

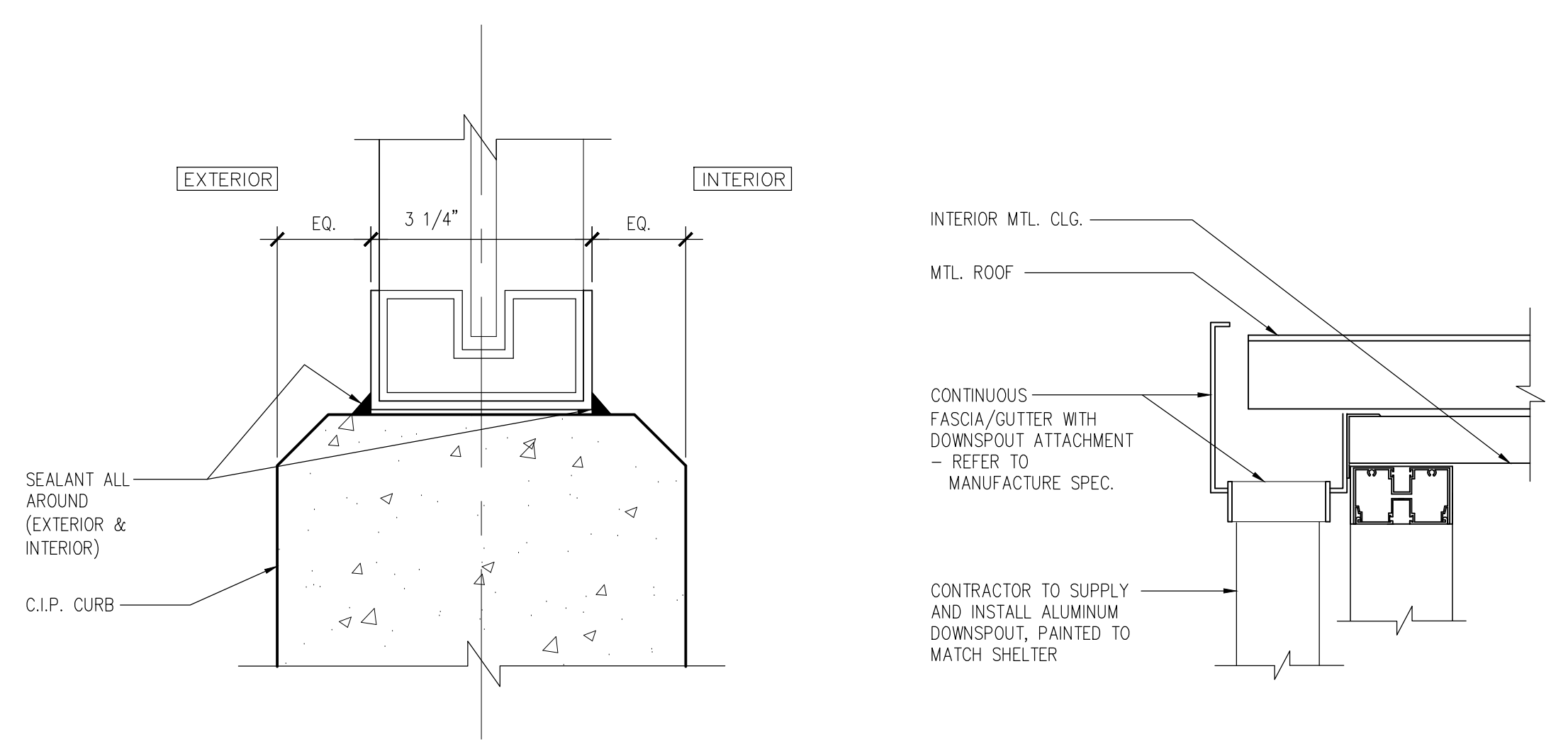
WINDOWS: FIXED WINDOWS WILL BE SINGLE CLEAR 3/16" TEMPERED SAFETY GLASS, GLAZED WITHIN WALL SYSTEMS. MECHANICALLY FASTENED FRAMING SYSTEM NOT ACCEPTABLE. GLASS SEALED WITH CONCEALED GASKET SYSTEM. DOOR: SHALL HAVE CLOSER BUT NO LATCH.

LIGHTING FIXTURES: HI-ABUSE FIXTURE, LINEAR FLUORESCENT 40 WATTS, 2-LAMP, 120 VOLT, 49.38 INCHES LONG, 9.25 WIDTH, 3.38 DEPTH, WHITE, COLD WEATHER. SHALL BE CONTROLLED ON SAME DEVICE AS POLE LAMPS.

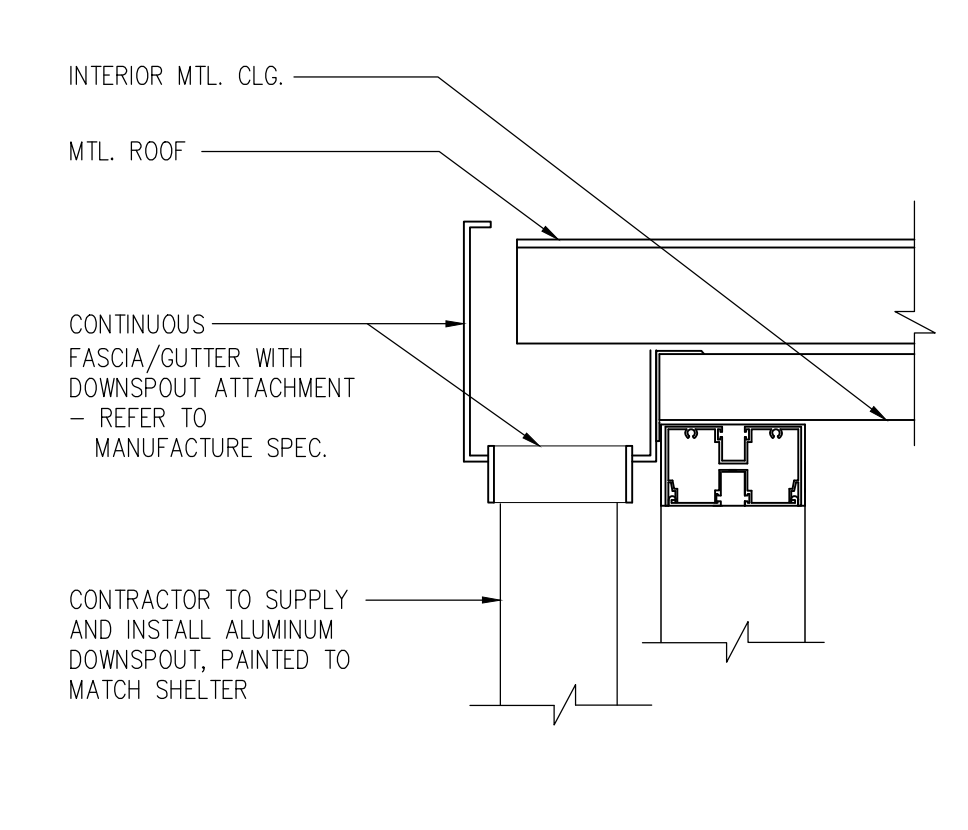
- SEE 7/A2.01 FOR HANDRAIL AND GUARDRAIL DETAIL.  
- COORDINATE WITH DRAINAGE SLOPE, SEE STRUCTURAL DRAWING.



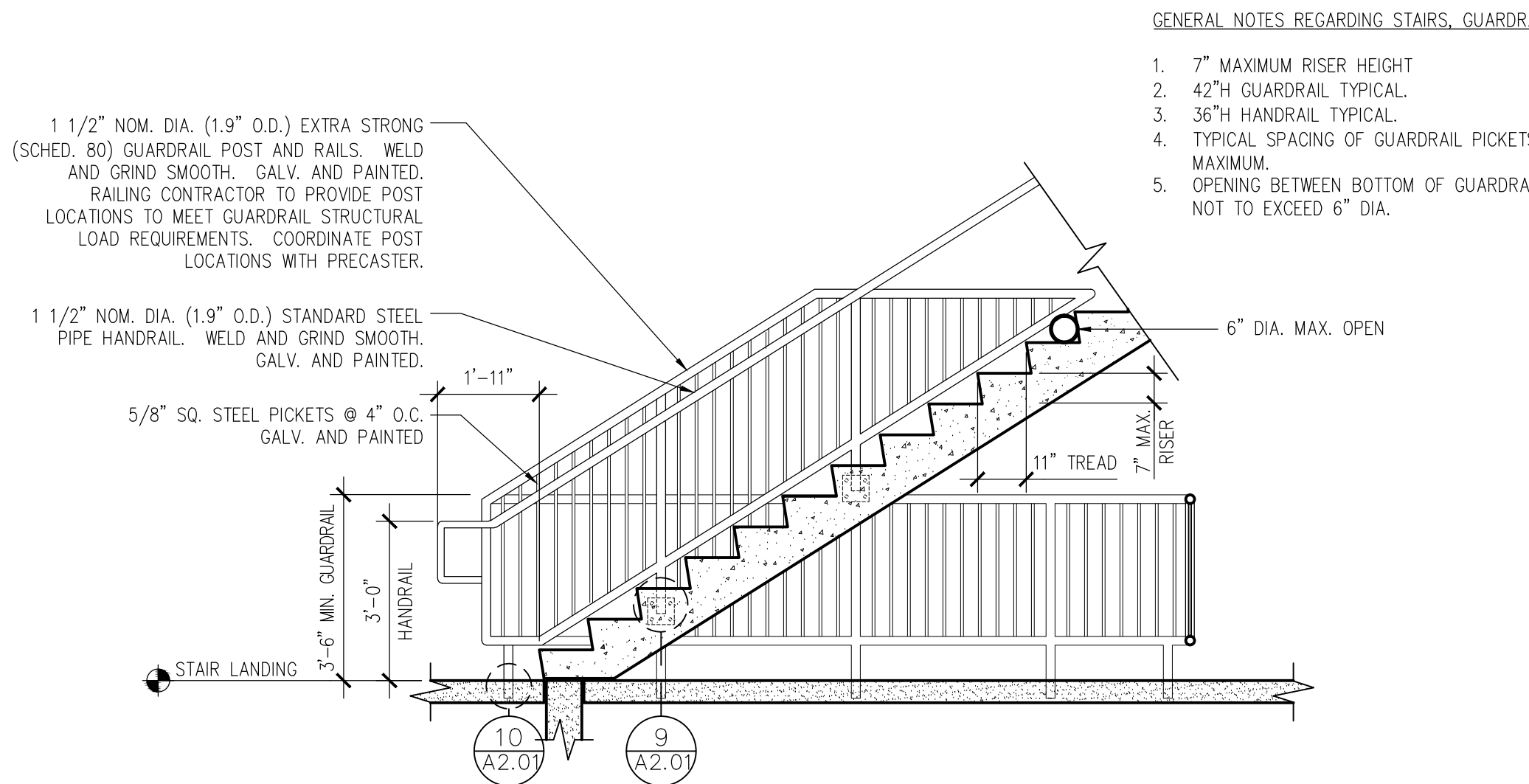
**2** STAIR A ENLARGED TOP TIER PLAN  
A2.01 SCALE: 1/4" = 1'-0"



**5** U CHANNEL ANCHORING DETAIL  
A2.01 SCALE: 6" = 1'-0"

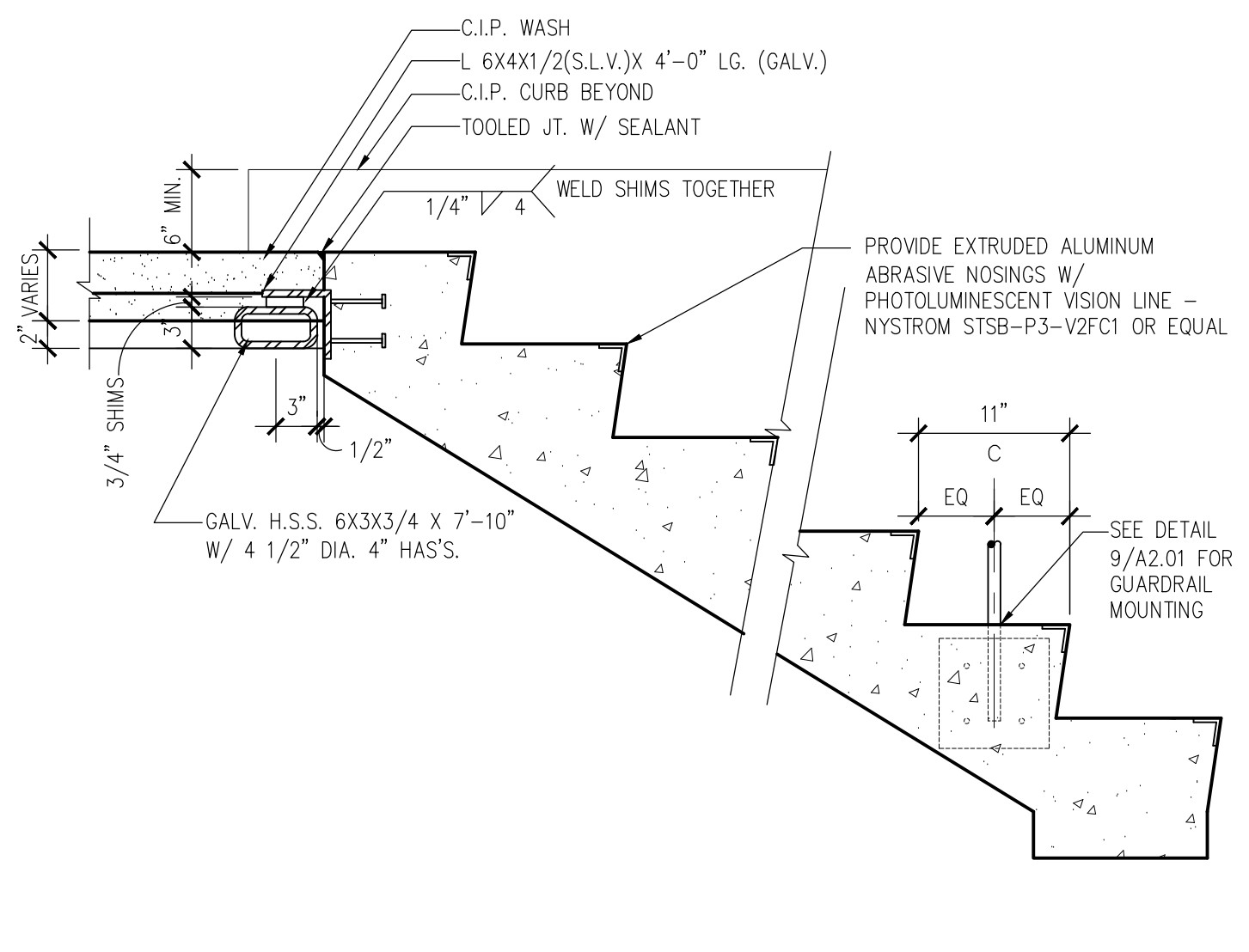


**6** DETAIL AT ROOF EAVE  
A2.01 SCALE: 3" = 1'-0"

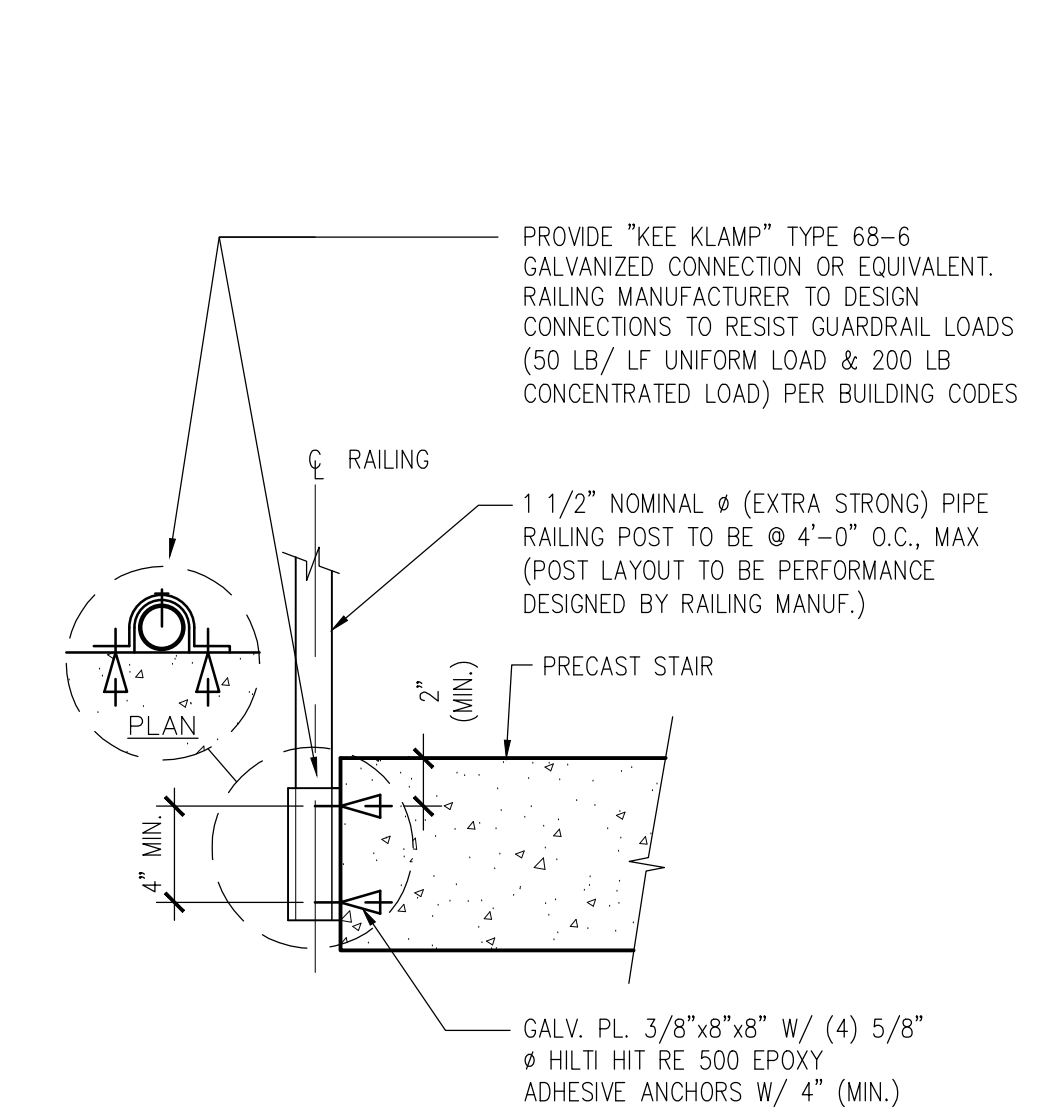


**7** STAIR/HANDRAIL/GUARDRAIL SECTION DETAIL AND GENERAL NOTES  
A2.01 SCALE: 3/8" = 1'-0"

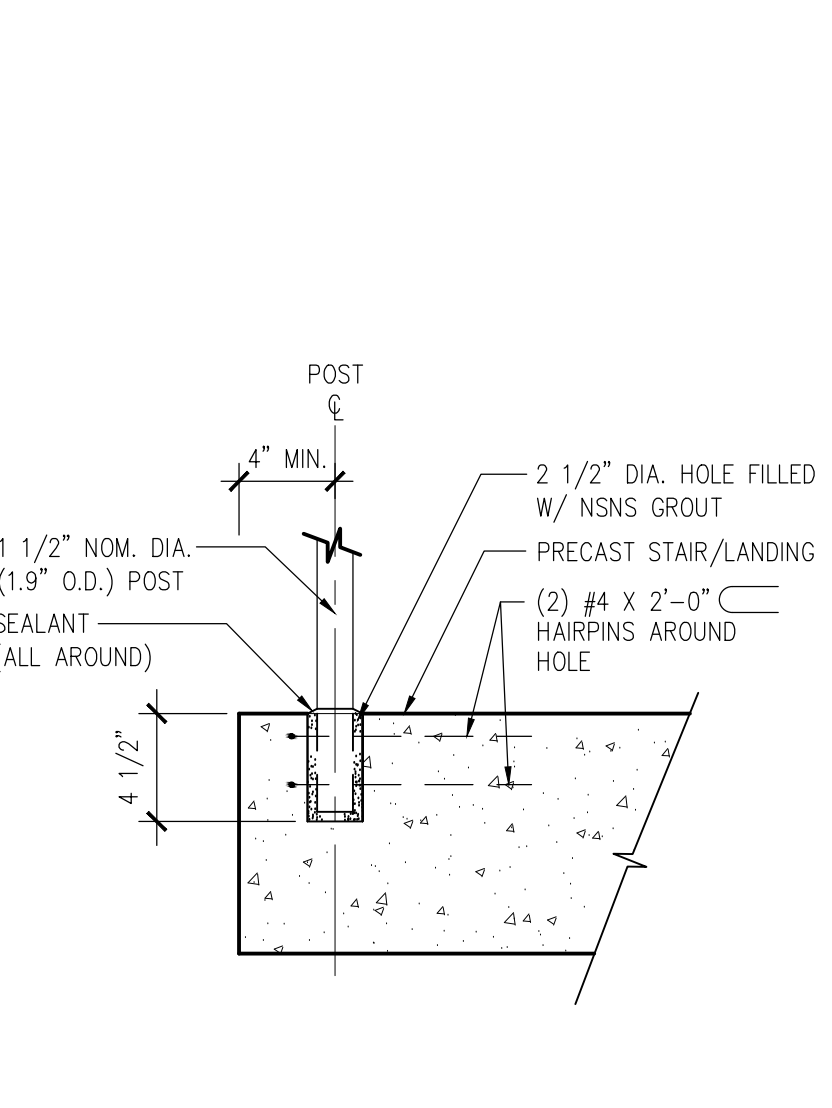
- GENERAL NOTES REGARDING STAIRS, GUARDRAILS AND HANDRAILS**
- 7" MAXIMUM RISER HEIGHT
  - 42"H GUARDRAIL TYPICAL.
  - 36"H HANDRAIL TYPICAL.
  - TYPICAL SPACING OF GUARDRAIL PICKETS IS 4" O.C. MAXIMUM.
  - OPENING BETWEEN BOTTOM OF GUARDRAIL, RISER AND TREAD NOT TO EXCEED 6" DIA.



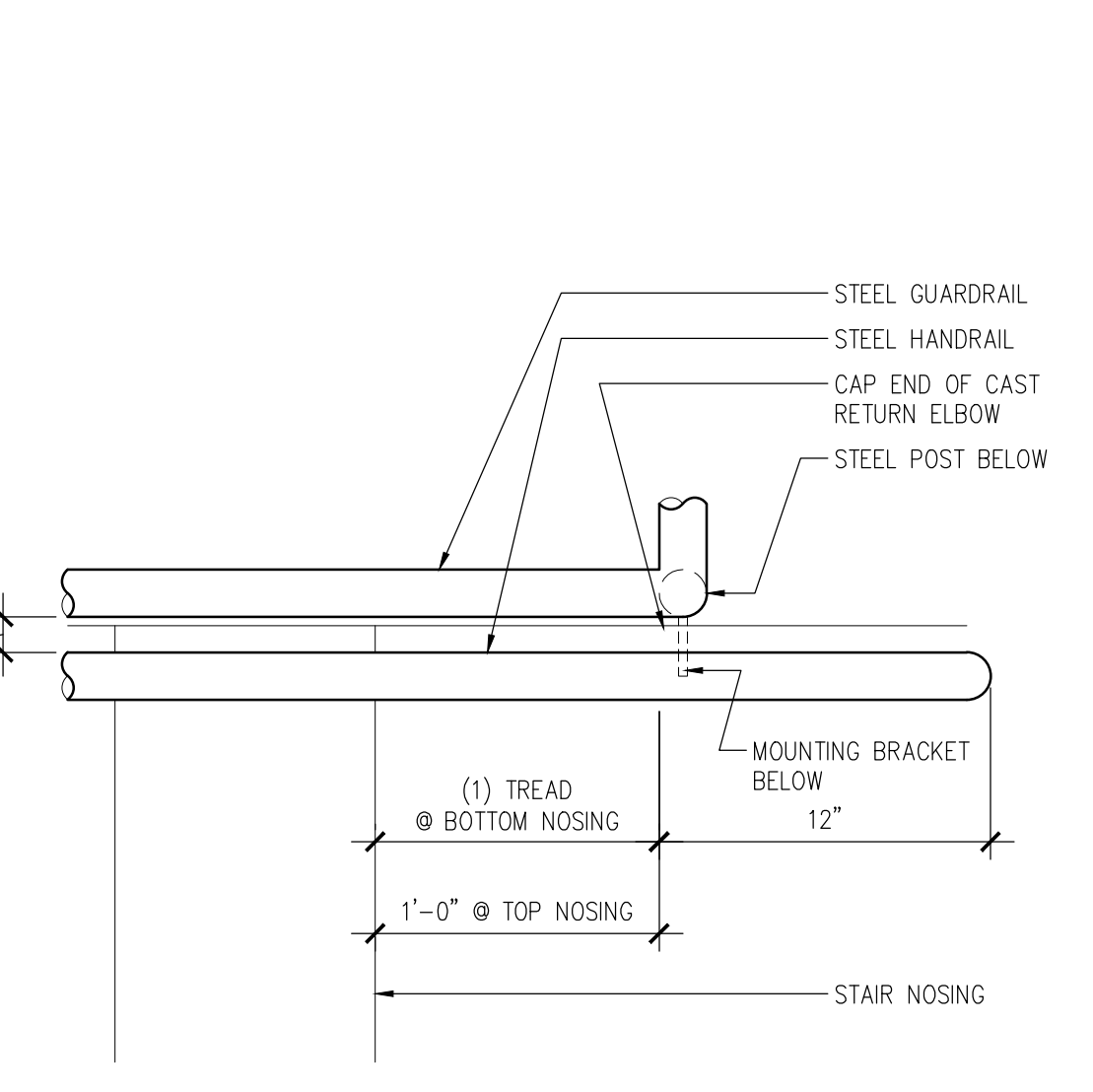
**8** P/C STAIR SECTION  
A2.01 SCALE: 1" = 1'-0"



**9** EDGE MOUNTED GUARDRAIL DETAIL  
A2.01 SCALE: 1 1/2"=1'-0"



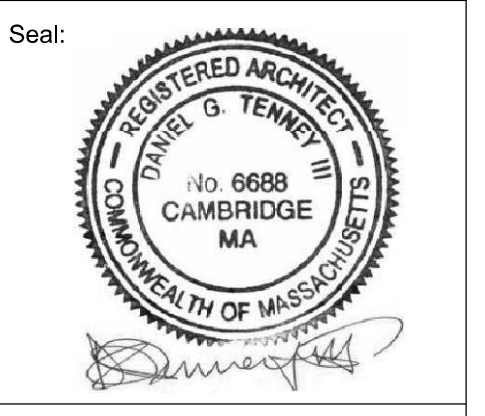
**10** STEEL POST MOUNTING DETAIL  
A2.01 SCALE: 1 1/2"=1'-0"



**11** HANDRAIL EXTENSION DETAIL  
A2.01 SCALE: 1 1/2"=1'-0"

Revisions:

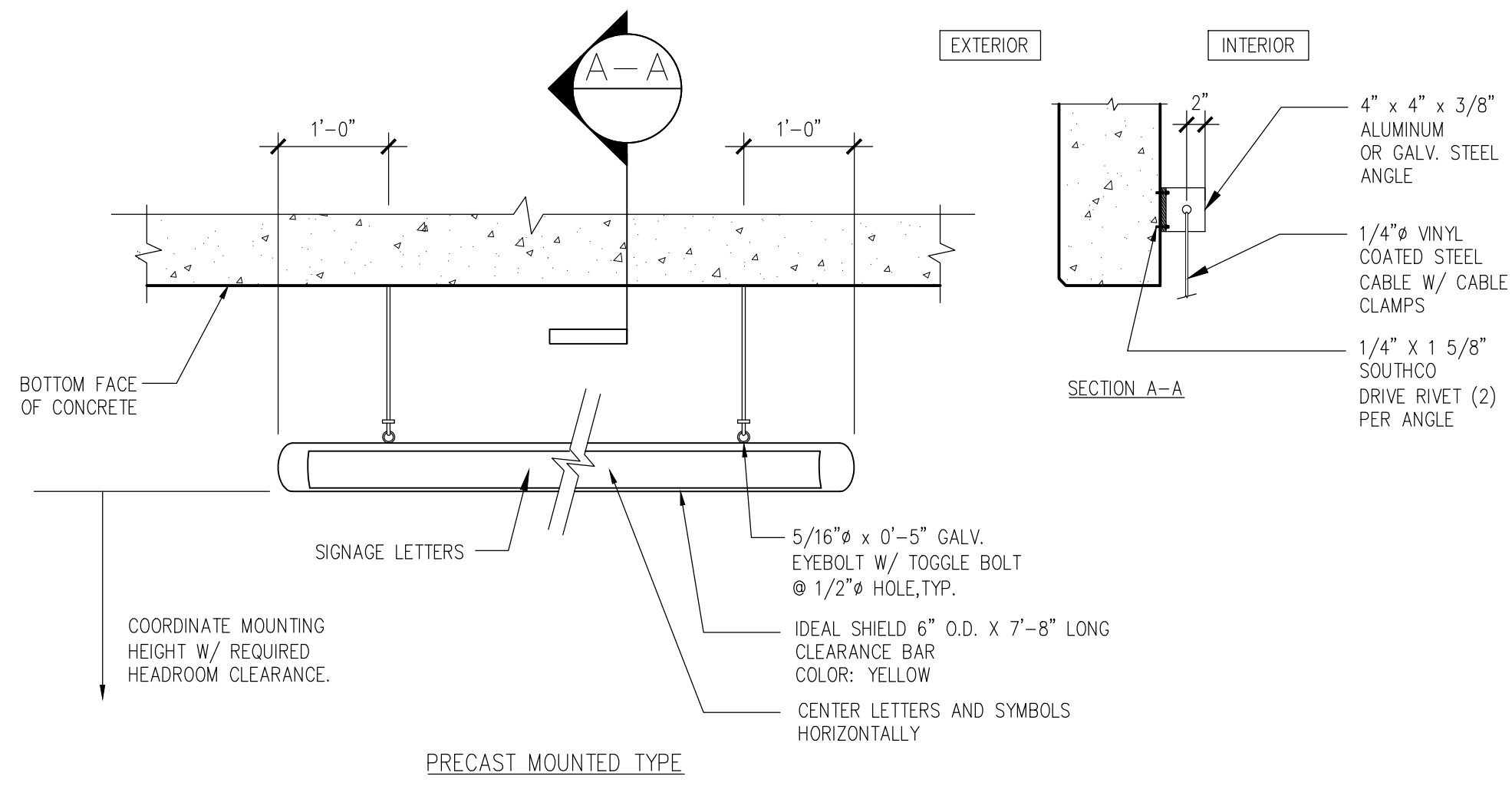
Rev	Date	Description



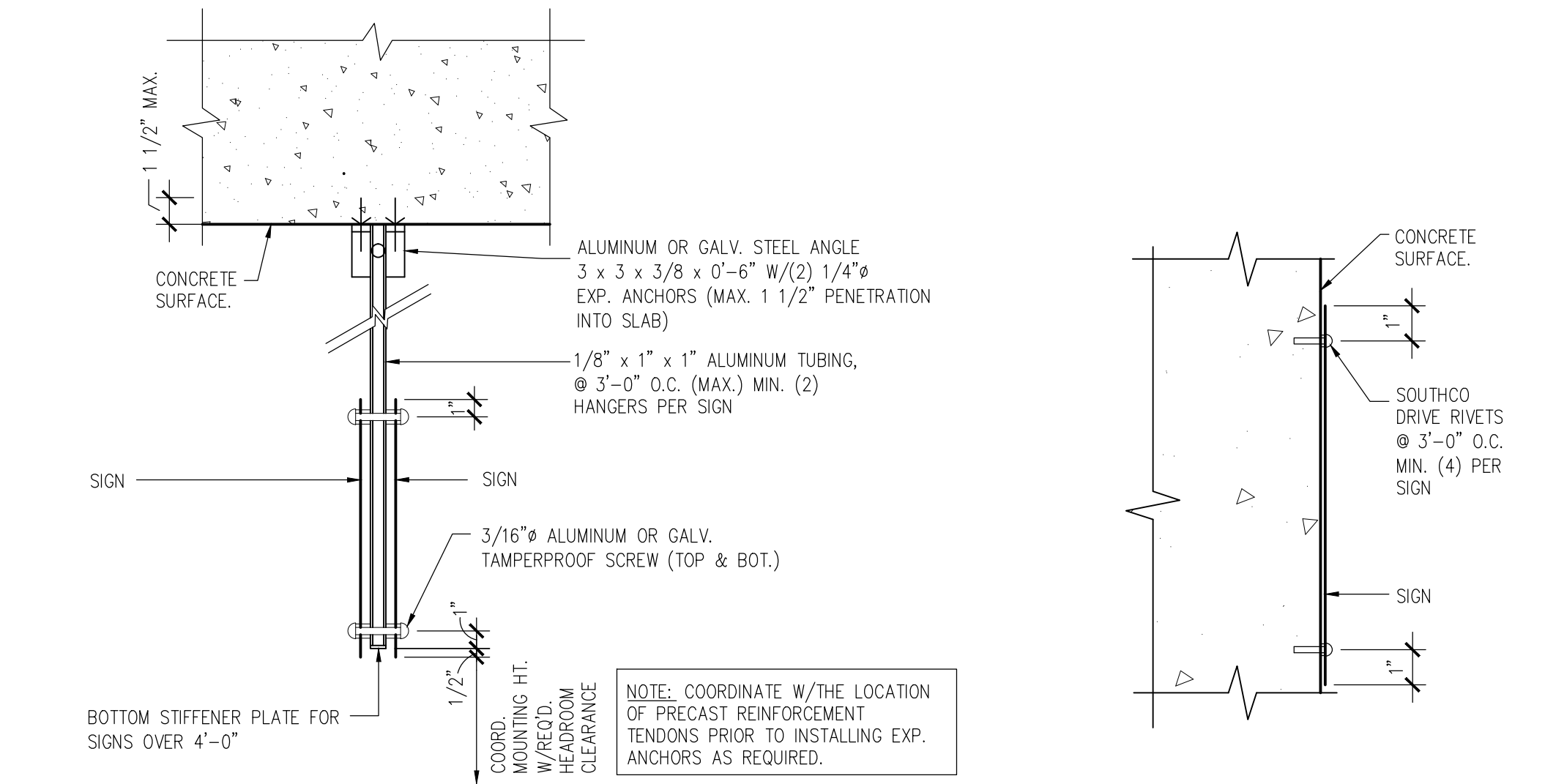
**CONSTRUCTION DOCUMENTS**

Date: 12/05/18  
Scale: AS NOTED  
Drawn By: LHJ  
Reviewed By: MTA  
Checked By: MTA  
Approved By: MTA

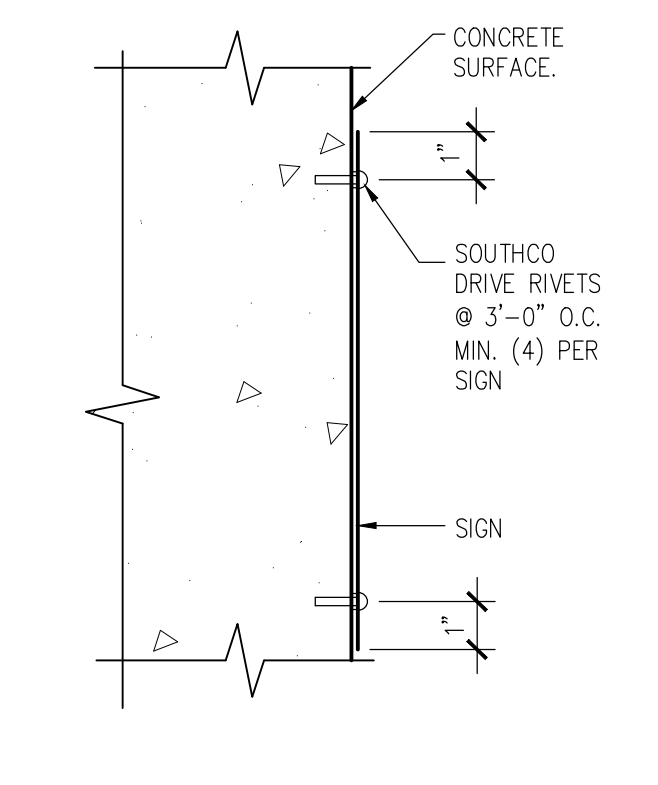
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**STAIR DETAILS**



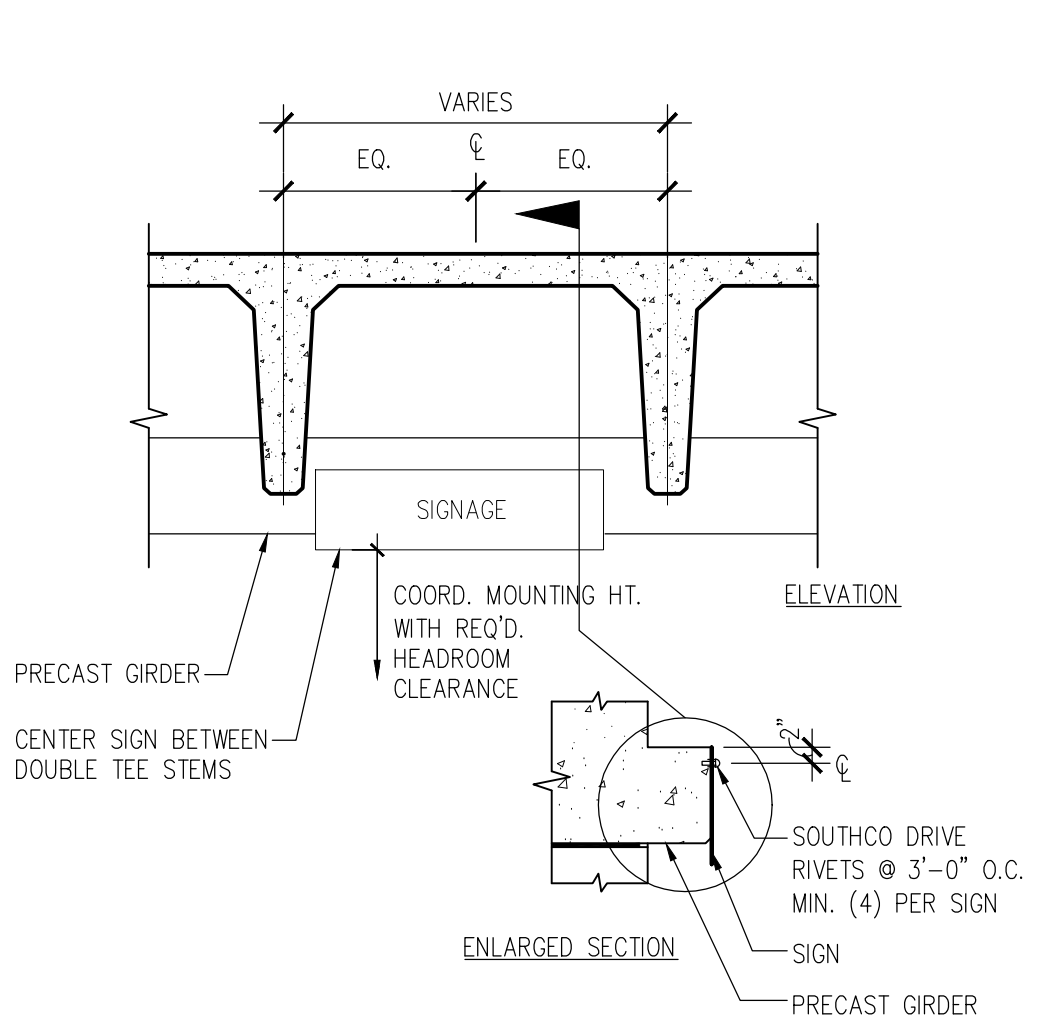
1 MOUNTING DETAIL  
A3.01 SCALE: 3/4"=1'-0"



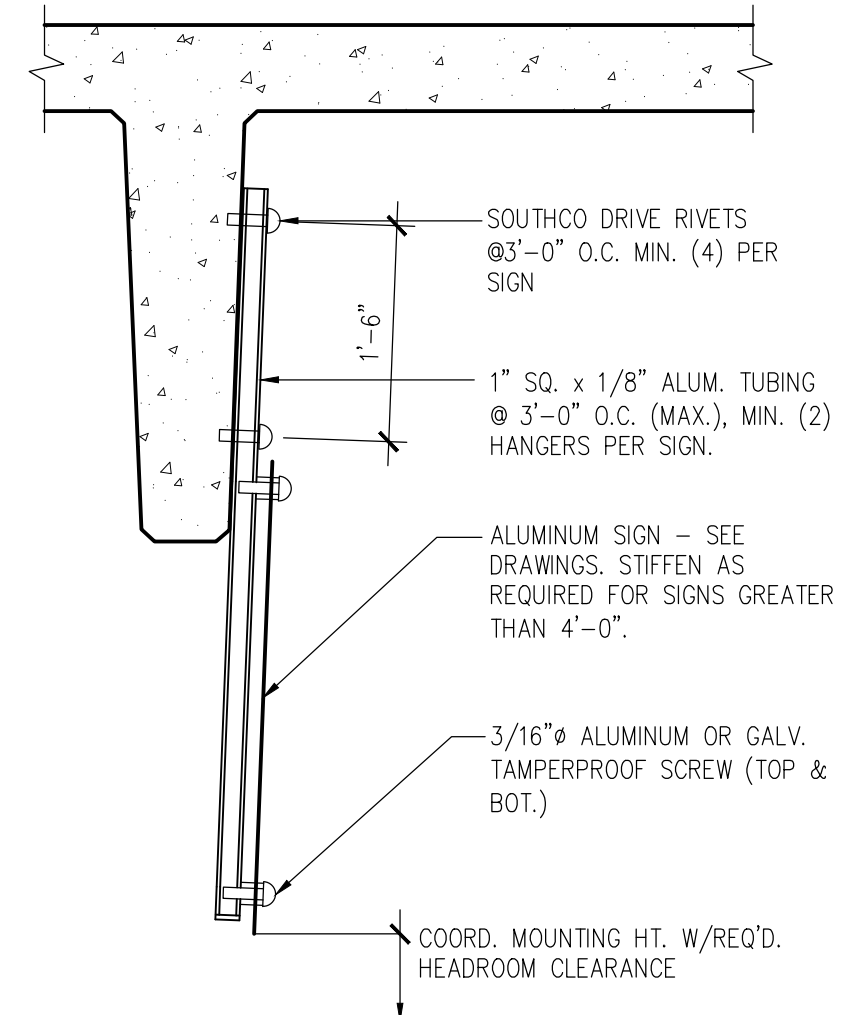
2 MOUNTING DETAIL  
A3.01 SCALE: 1-1/2"=1'-0"



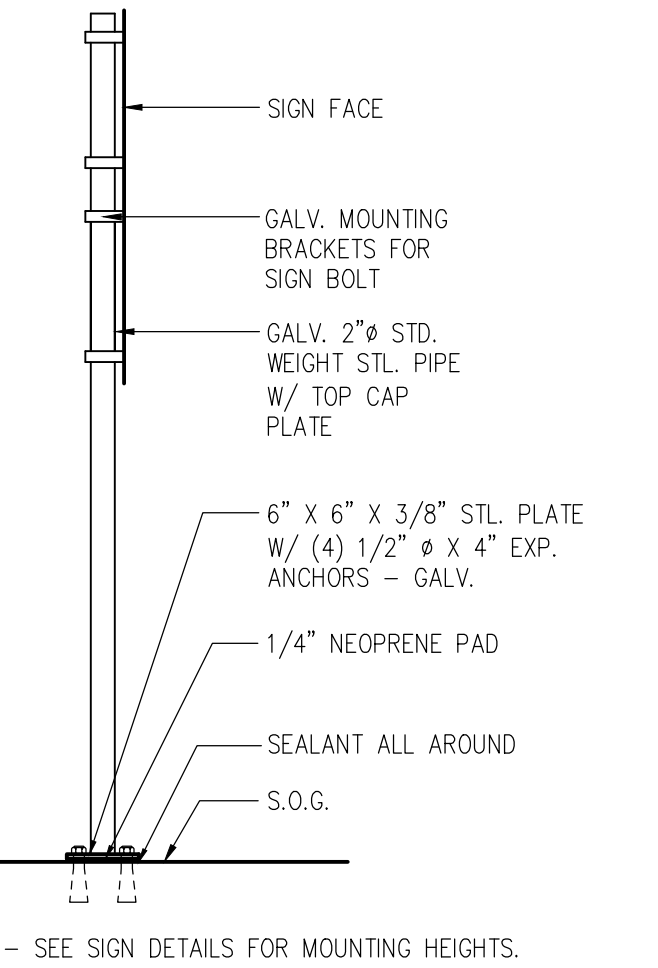
3 MOUNTING DETAIL  
A3.01 SCALE: 3"=1'-0"



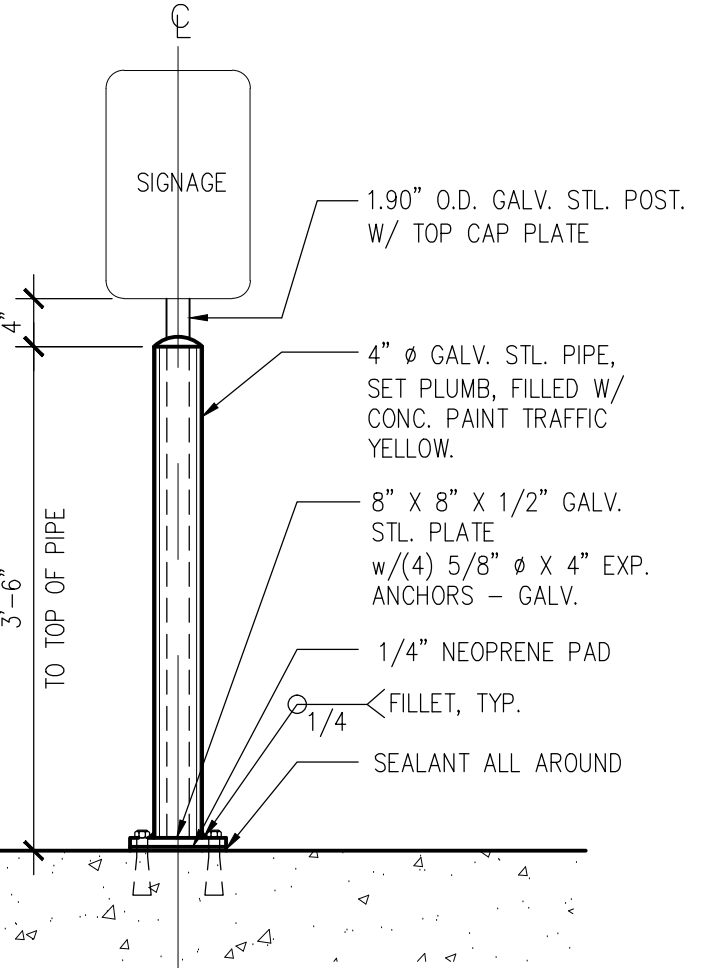
4 MOUNTING DETAIL  
A3.01 SCALE: 1/2"=1'-0"



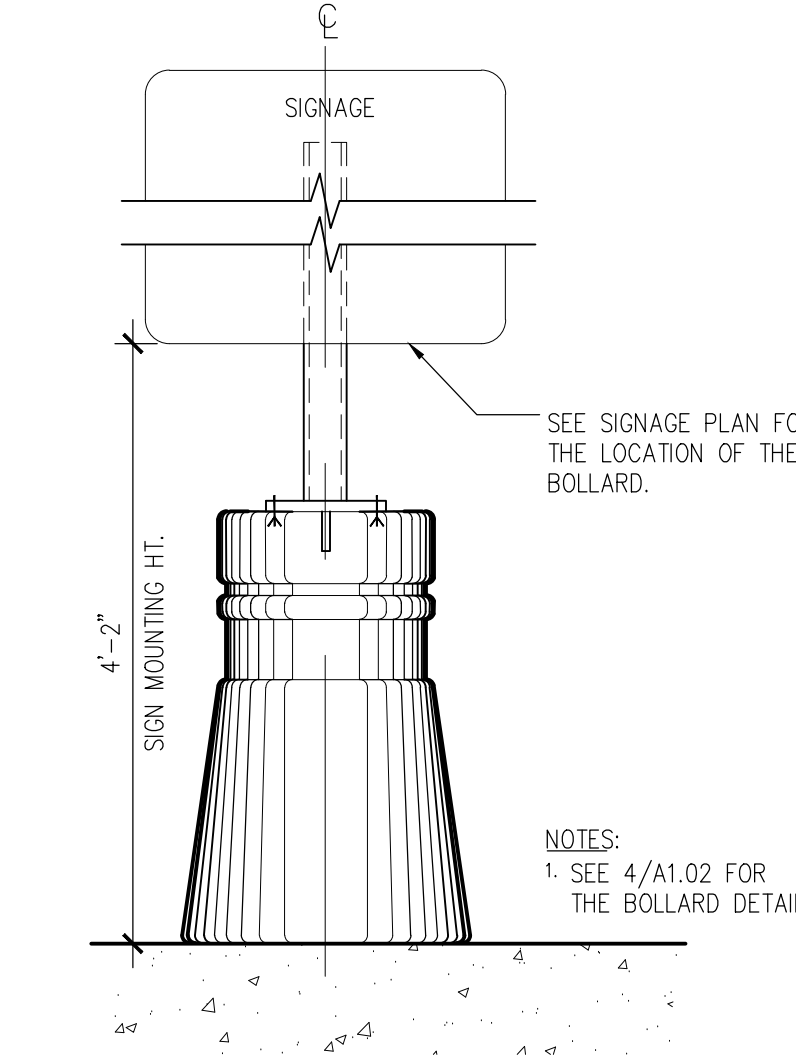
5 MOUNTING DETAIL  
A3.01 SCALE: 3/4"=1'-0"



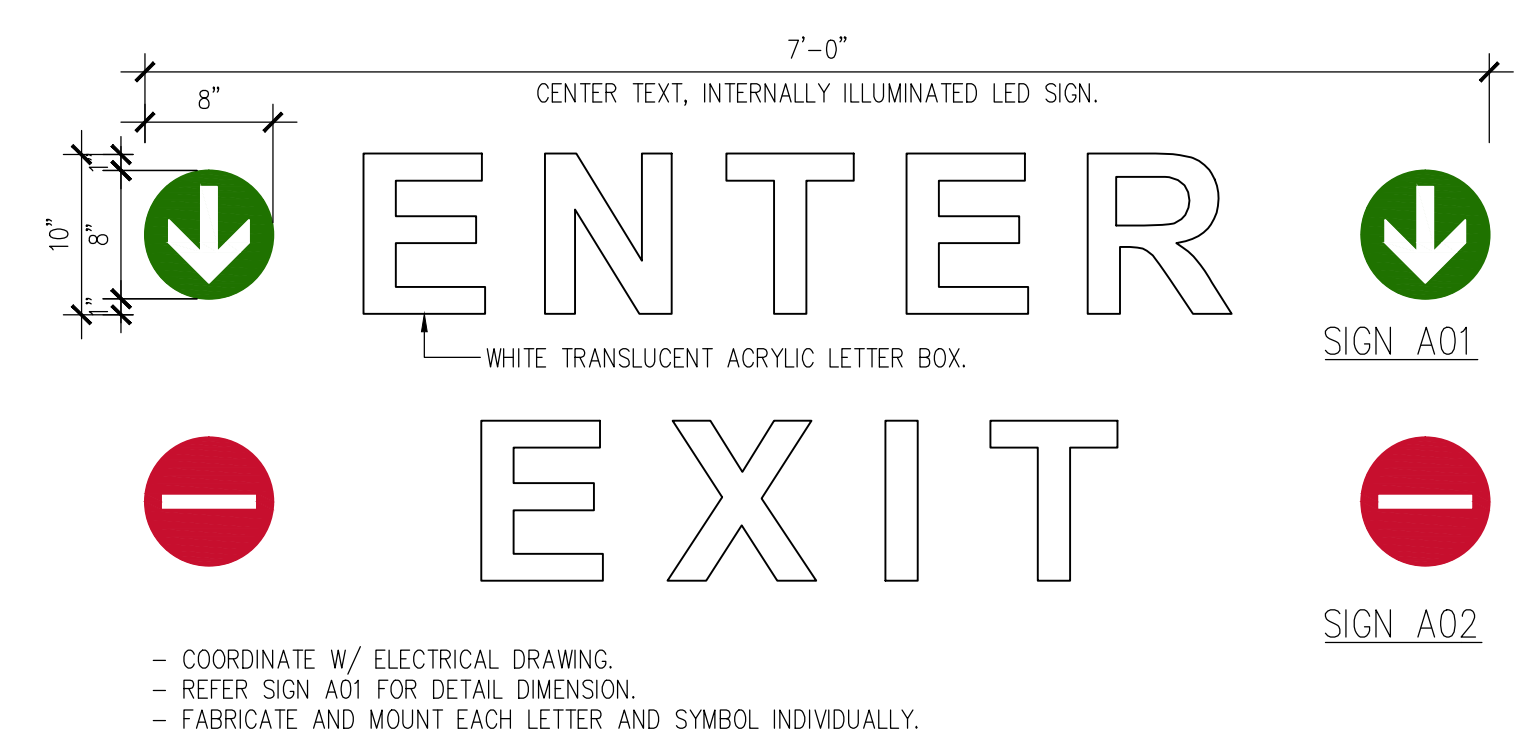
6 MOUNTING DETAIL  
A3.01 SCALE: 3/4"=1'-0"



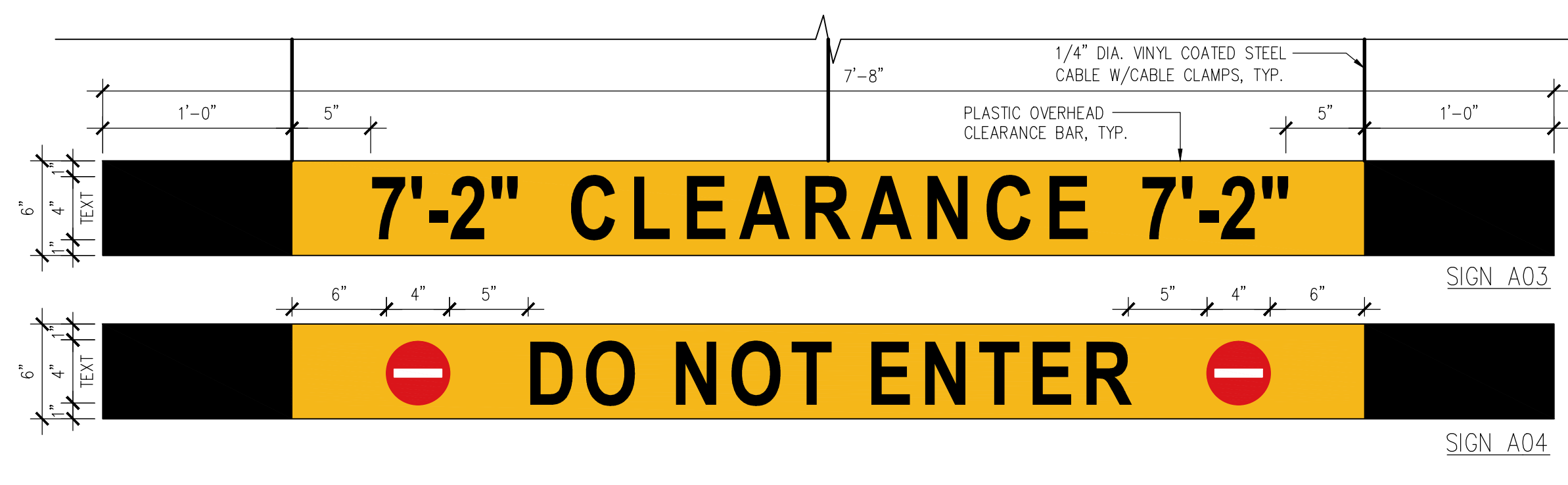
7 MOUNTING DETAIL  
A3.01 SCALE: 3/4"=1'-0"



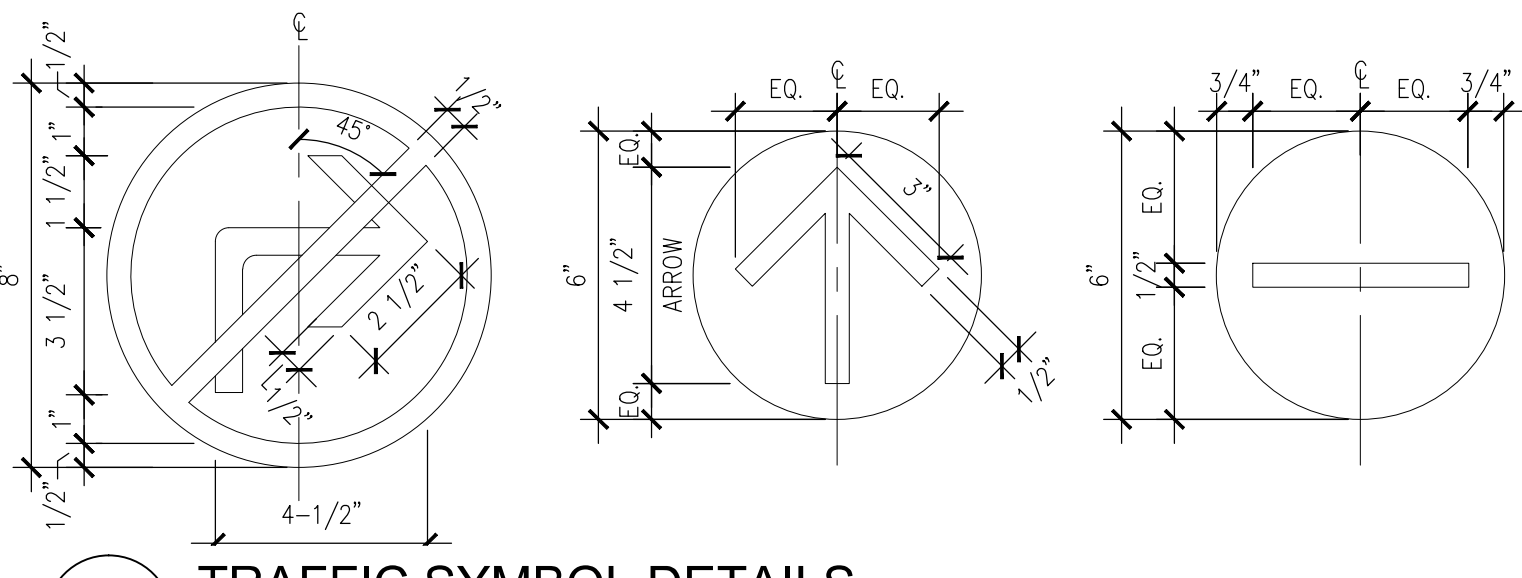
8 MOUNTING DETAIL  
A3.01 SCALE: 1"=1'-0"



9 TYPE A. SIGNAGE DETAILS  
A3.01 SCALE: 1"=1'-0"



10 TYPE A. SIGNAGE DETAILS  
A3.01 SCALE: 1-1/2"=1'-0"



11 TRAFFIC SYMBOL DETAILS  
A3.01 SCALE: 3"=1'-0"

GENERAL NOTES

A. TYPICAL PEDESTRIAN SIGNS (ROOM, STAIR, EXIT IDENTIFICATION SIGNS)

- TYPE FONT: COLFAX MEDIUM AND BOLD (BASED ON TEMPLE BRAND GUIDELINE). U.N.O. SIGNS SHALL BE BACKGROUND COLOR REVERSE PAINTED AS INDICATED. TACTILE TEXT AND BRAILLE IN ACCORDANCE WITH ICC/ANSI A117.1.
- CENTER ALL SYMBOLS AND TEXT ON SIGN HORIZONTALLY AND VERTICALLY, U.N.O.
- MATERIAL FINISH: CLEAR NON-GLARE, EXTERIOR GRADE PHOTOPOLYMER.
- SIGNS MOUNTED TO GLASS TO BE ADHERED WITH WHB TAPE.
- SYMBOLS OF ACCESSIBILITY: SHALL HAVE A NON-GLARE FINISH AND COMPLY WITH SECTION 703.6 OF ICC/ANSI A117.1

B. TYPICAL DIRECTIONAL/TRAFFIC SIGNS:

- TYPE FONT: COLFAX MEDIUM AND BOLD (BASED ON TEMPLE BRAND GUIDELINE). TEXT HEIGHTS ARE AS SHOWN ON THE DETAILS. USE COMBINATION OF UPPER CASE AND LOWER CASE LETTERS ON ALL DIRECTIONAL, TRAFFIC SIGNS, U.N.O.
- ALL SIGNS, INCLUDING SYMBOLS AND TEXT, SHALL BE REVERSE STENCIL SILK SCREENED IN NOTED COLOR ONTO REFLECTIVE (3M ENGINEER GRADE "SCOTCHLITE" #3290 REFLECTIVE SHEETING, OR APPROVED EQUAL) BACKGROUND U.N.O.
- BACKING MATERIALS FOR SIGNS SHALL BE 0.080" THICK ALUMINUM, U.N.O. PAINT EDGES AND BACKS OF ALUMINUM SIGNS THAT ARE MOUNTED DIRECTLY TO THE STRUCTURE FOR CATHODIC AND CORROSION PROTECTION.
- MOUNT ALL SIGNS PLUMB AND LEVEL AS REQUIRED. OVERHEAD CLEARANCE HEIGHT SIGNS SHALL NOT ENROACH INTO THE VERTICAL CLEARANCE REQUIREMENT FOR THE PARKING FACILITY.
- SIGNAGE CONTRACTOR TO VERIFY LOCATIONS OF SIGNAGE IN THE FIELD WITH THE ARCHITECT PRIOR TO INSTALLATION.

C. ILLUMINATED SIGNS

- POWER TO SIGN LOCATION TO BE PROVIDED BY ELECTRICAL ENGINEER. SEE ELEC. DWGS. SIGNAGE CONTRACTOR TO COORDINATE THE ELECTRICAL COMPONENTS OF SIGNS WITH THOSE OF THE POWER SUPPLY PROVIDED.
- FOR ALL ILLUMINATED SIGNS, PROVIDE TIME CLOCK SWITCH FOR CONTROL.

D. STANDARD GRAPHIC COLOR

<span style="display:inline-block; width:10px; height:10px; background-color:blue;"></span> PANTONE 7687C	<span style="display:inline-block; width:10px; height:10px; background-color:white;"></span> PURE WHITE
<span style="display:inline-block; width:10px; height:10px; background-color:green;"></span> PANTONE 355C	<span style="display:inline-block; width:10px; height:10px; background-color:red;"></span> PMS 186C, TRAFFIC RED

SIGNAGE SCHEDULE

A. PARK SIGNS

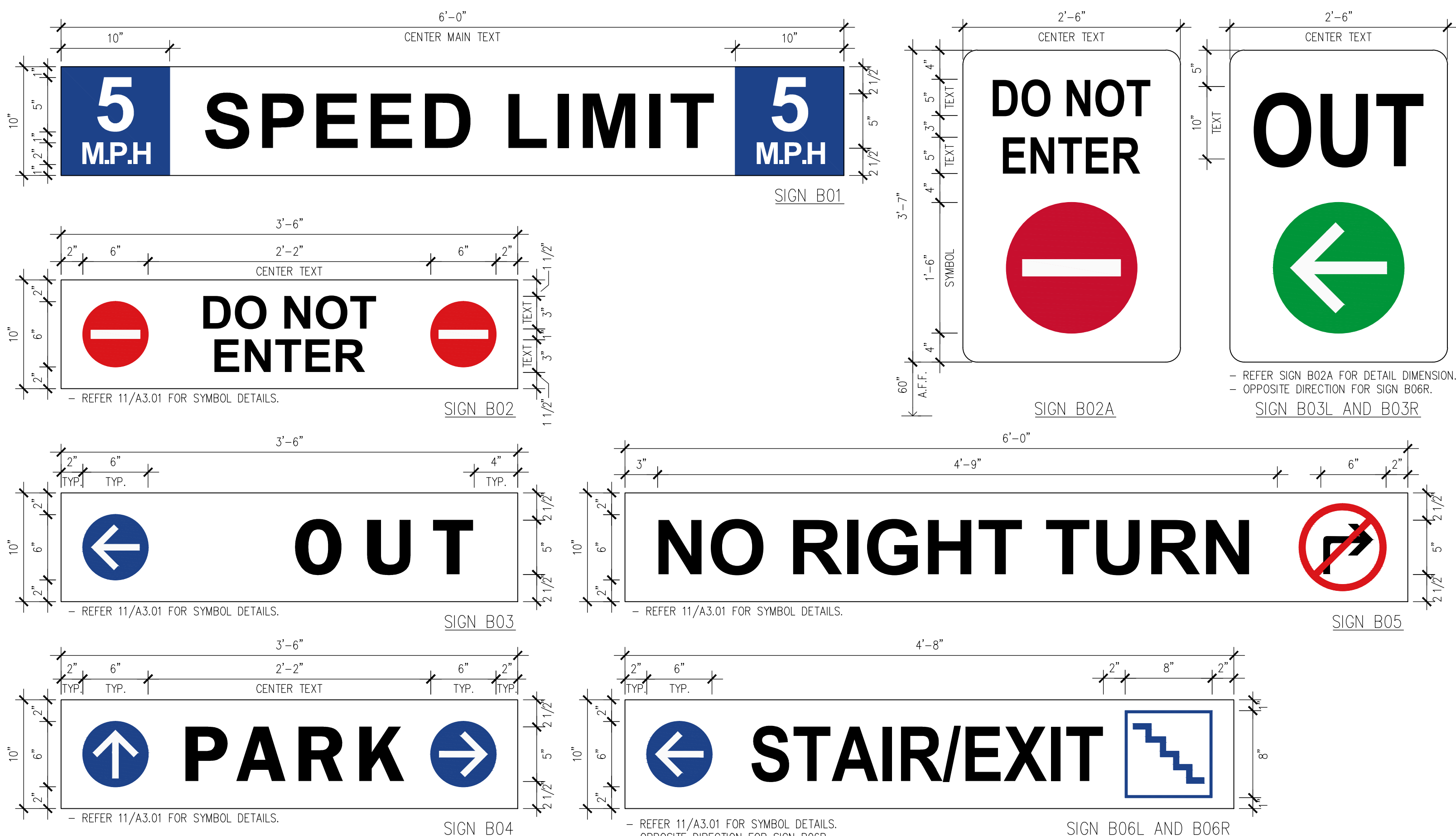
SIGN	SIZE		SIGN TYPE	DETAIL	MTG. DTL.
	W	H			
A01	7'-0"	0'-10"	ENTER	9/A3.01	3/A3.01
A02	7'-0"	0'-10"	EXIT	9/A3.01	3/A3.01
A03	7'-8"	0'-6"	7'-2" CLEARANCE 7'-2"	10/A3.01	1/A3.01
A04	7'-8"	0'-6"	DO NOT ENTER	10/A3.01	1/A3.01

B. WAY FINDING SIGNS

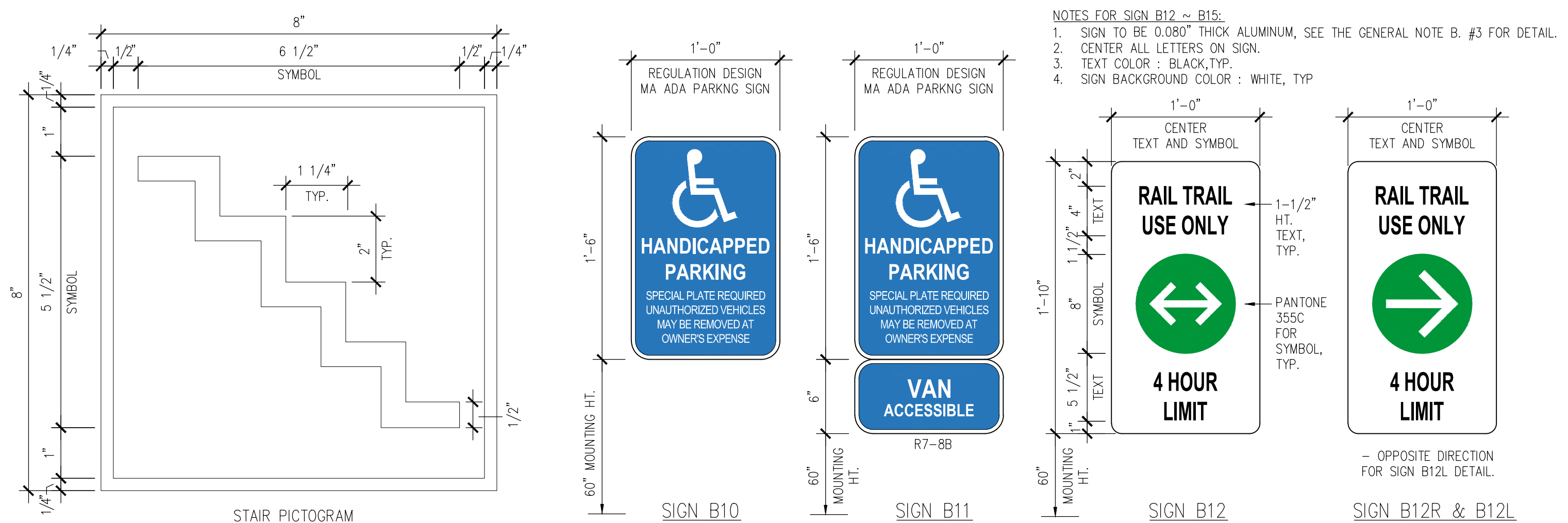
SIGN	SIZE		SIGN TYPE	DETAIL	MTG. DTL.
	W	H			
B01	6'-0"	0'-10"	SPEED LIMIT	1/A3.02	2/A3.01
B02	3'-6"	0'-10"	DO NOT ENTER	1/A3.02	4/A3.01
B02A	2'-6"	3'-7"	DO NOT ENTER	1/A3.02	8/A3.01
B03	3'-6"	0'-10"	OUT	1/A3.02	4/A3.01
B03L	2'-6"	3'-7"	OUT	1/A3.02	8/A3.01
B03R	2'-6"	3'-7"	OUT	1/A3.02	8/A3.01
B04	3'-6"	0'-10"	PARK	1/A3.02	5/A3.01
B05	6'-0"	0'-10"	NO RIGHT TURN	1/A3.02	5/A3.01
B06L	4'-8"	0'-10"	STAIR/EXIT	1/A3.02	5/A3.01
B06R	4'-8"	0'-10"	STAIR/EXIT	1/A3.02	5/A3.01
B07	0'-6"	0'-10"	EXIT	2/A3.02	3/A3.01 OR V.H.B TAPE
B08	0'-4"	0'-10"	STAIR ID SIGN	2/A3.02	
B09	1'-6"	1'-5"	STAIRWAY ID SIGN	2/A3.02	
B10	1'-0"	1'-6"	RESERVED PARKING (A.D.A)	4/A3.02	3, 7/A3.01
B11	1'-0"	2'-0"	RESERVED PARKING (A.D.A VAN)	4/A3.02	6/A3.01
B12	1'-0"	1'-10"	RAIL TRAIL PARKING USE ONLY	4/A3.02	3, 7/A3.01
B12R	1'-0"	1'-10"	RAIL TRAIL PARKING USE ONLY	4/A3.02	3, 7/A3.01
B12L	1'-0"	1'-10"	RAIL TRAIL PARKING USE ONLY	4/A3.02	3, 7/A3.01
B13	2'-0"	1'-3"	DO NOT PILE SNOW	5/A3.02	3/A3.01
B14	1'-2"	0'-9"	FIRE EXTINGUISHERS	5/A3.02	3, 5/A3.02
B15	0'-10"	0'-8"	F.D.C. SIGN (DRY STANDPIPE)	5/A3.02	3/A3.01

C. PAINTED WALL GRAPHIC

SIGN	SIGN TYPE	DETAIL	NOTES
C01	DO NOT ENTER	6/A3.02	COORDINATE WITH STRUCTURAL DRAWING
C02	OUT	6/A3.02	

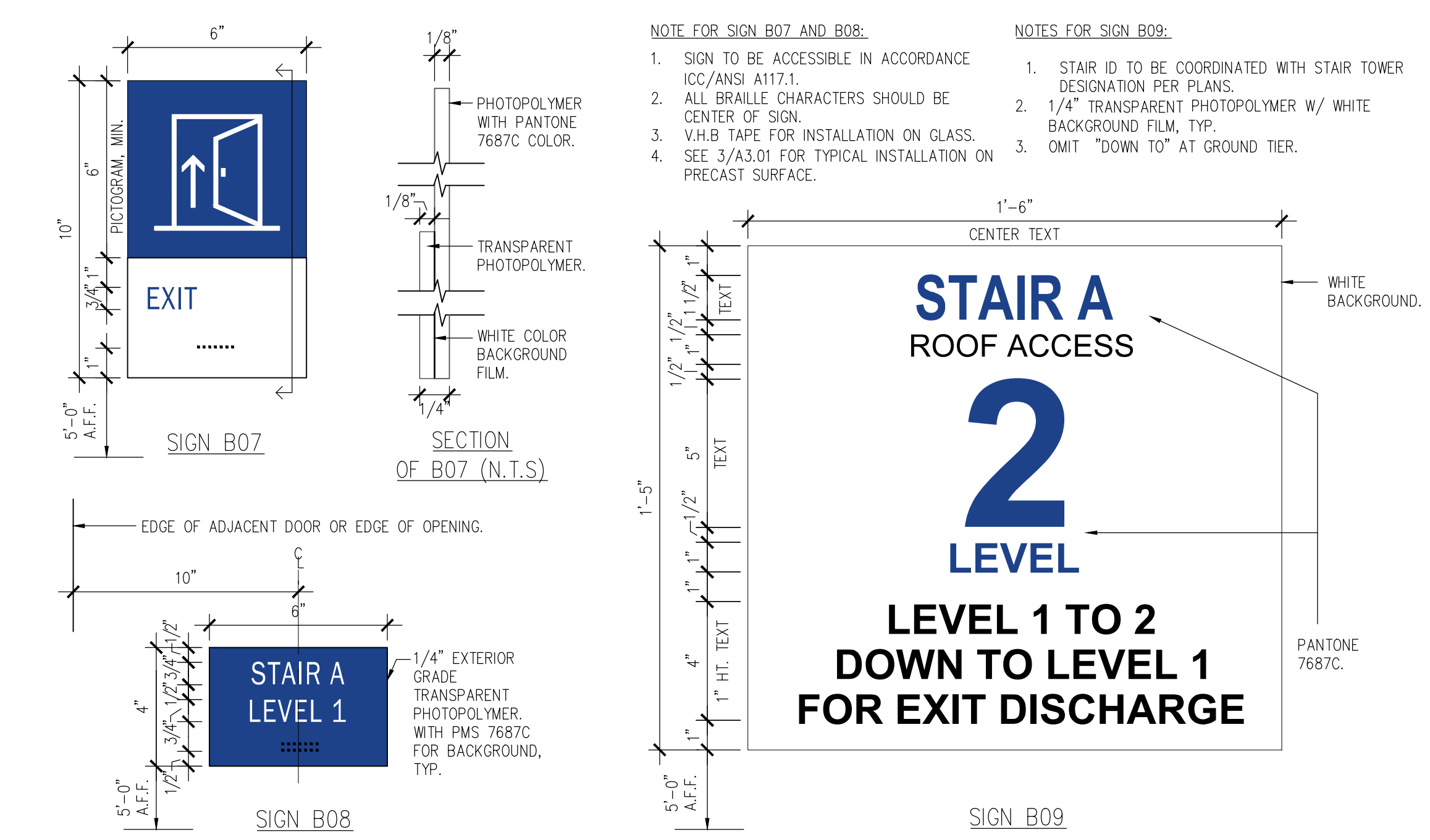


1 TYPE B. SIGNAGE DETAILS  
A3.02 SCALE: N.T.S

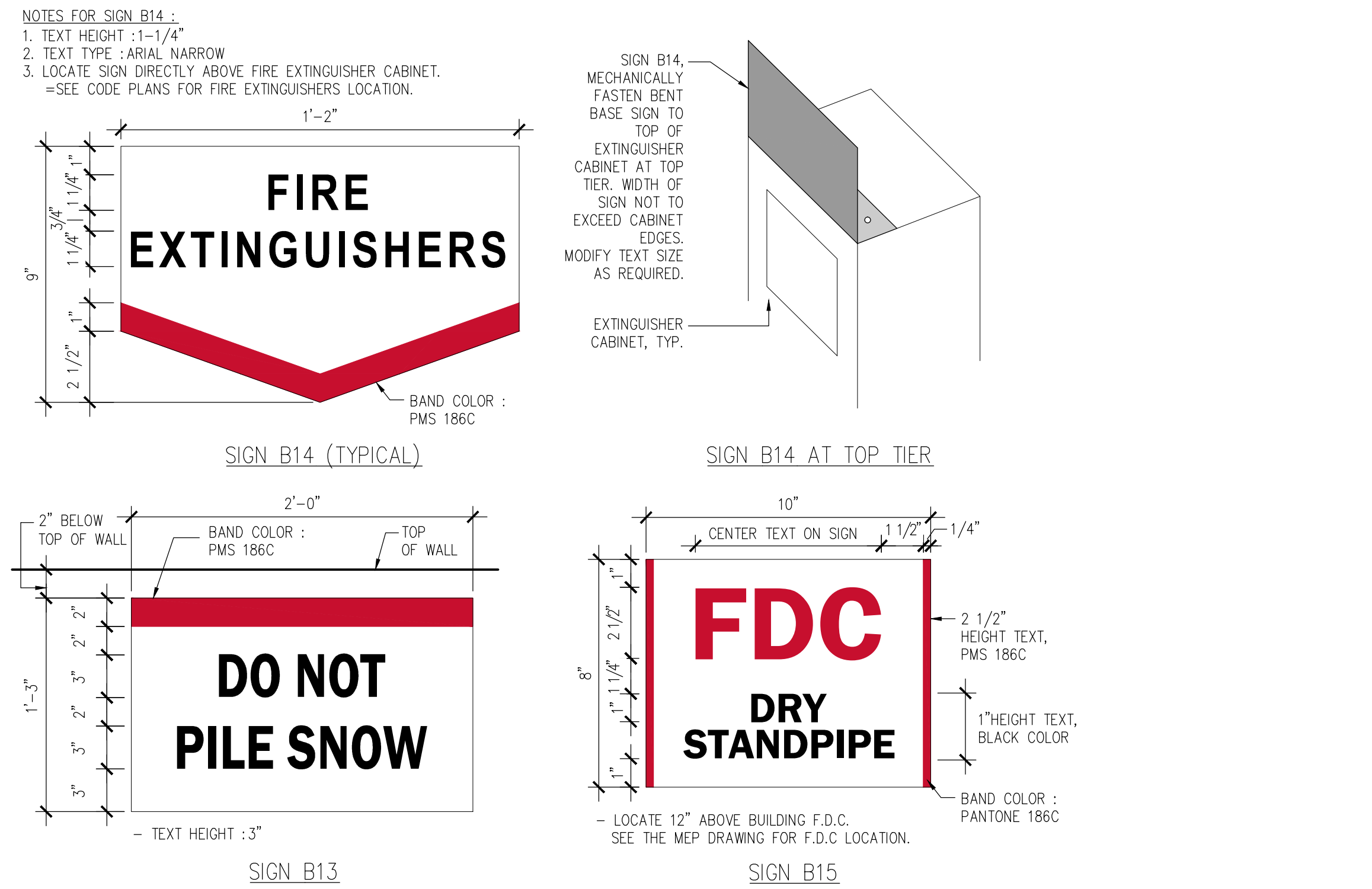


3 SYMBOL DETAILS  
A3.02 SCALE: 6" = 1'-0"

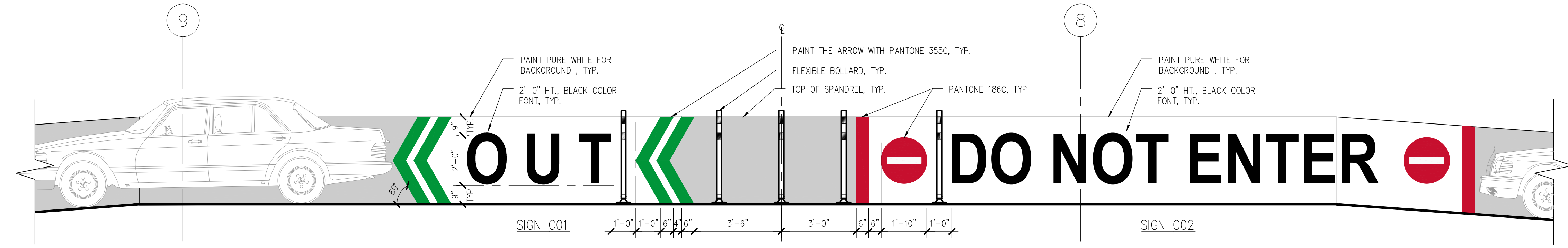
4 TYPE B. SIGNAGE DETAILS  
A3.02 SCALE: 1-1/2"=1'-0"



2 TYPE B. SIGNAGE DETAILS  
A3.02 SCALE: 3" = 1'-0"



5 TYPE B. SIGNAGE DETAILS  
A3.02 SCALE: N.T.S



6 TYPE C. SIGNAGE DETAILS  
A3.02 SCALE: 6" = 1'-0"

### LEGEND

SYMBOL	ABBREV	DESCRIPTION
		TEE LOOKING UP
		TEE LOOKING DOWN
		UNION
	VIV	VALVE IN VERTICAL
		STRAINER
	WH/SA	WATER HAMMER ARRESTOR/SHOCK ABSORBER
		FLOW IN DIRECTION OF ARROW
		DIRECTION OF SLOPE
		PIPE SLEEVE
	FD	FLOOR DRAIN
	CO	CLEANOUT
	FCO	FLOOR CLEANOUT
		P-TRAP
		ELBOW UP OR RISE
		ELBOW DOWN OR DROP
		CAP OR END OF PIPE
	HB	HOSE BIBB
	CW	COLD WATER
	HW	HOT WATER
	HWR	HOT WATER RETURN
	S or W	SOIL OR WASTE ABOVE GROUND
	TP	TRAP PRIMER
	V	VENT ABOVE GROUND
	NCW	NON POTABLE COLD WATER
		BALL VALVE
		CHECK VALVE
	MV	MIXING VALVE
		BALANCING VALVE
	T&P	TEMPERATURE AND PRESSURE RELIEF VALVE
		VACUUM RELIEF VALVE
		AQUASTAT
		THERMOMETER
	PRV	PRESSURE REDUCING/REGULATING VALVE
	PG	PRESSURE GAUGE
	CA	COMPRESSED AIR
	GW	GARAGE WASTE
	GV	GARAGE VENT
	SV	SEPARATOR VENT
	CV	CHAMBER VENT
	S	SOIL OR WASTE PIPING BELOW FLOR
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR

### ABBREVIATIONS

AFF	ABOVE FINISH FLOOR
AP	ACCESS PANEL
ARCH	ARCHITECT
BLDG	BUILDING
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CO	CLEANOUT
CONT	CONTINUATION
CP	CHROME PLATED
CW	COLD WATER
DF	DRINKING FOUNTAIN
DN	DOWN
DWG	DRAWING
ELEC	ELECTRICAL
EL/ELEV	ELEVATION
FCO	FLOOR CLEANOUT
FFE	FINISH FLOOR ELEVATION
FLR	FLOOR
GC	GENERAL CONTRACTOR
GPC	GALLONS PER CYCLE
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GW	GAS PIPED WATER HEATER
HW	HOT WATER
HWR	HOT WATER RETURN
INV	INVERT
IW	INDIRECT WASTE
LPC	LIMIT OF PLUMBING CONTRACTOR
MECH	MECHANICAL
MSB	MOP SERVICE BASIN-FIXTURE IDENTIFICATION
NTS	NOT TO SCALE
OED	OPEN END DRAIN
OV	OVERFLOW
PC	PLUMBING CONTRACTOR
PLBG	PLUMBING
PSI	POUNDS PER SQUARE INCH
RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR
SA	SHOCK ABSORBER
SH	SHOWER-FIXTURE IDENTIFICATION
SK	SINK-FIXTURE IDENTIFICATION
SPEC	SPECIFICATION
ST	STORM
TMW	TEMPERED WATER
TP	TRAP PRIMER
TYP	TYPICAL
UR	URINAL
V	VENT
VIV	VALVE IN VERTICAL
VS	VENT STACK
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WH	WALL HYDRANT
WM	WASHING MACHINE
WTS	WATER TIGHT SEAL

### GENERAL NOTES

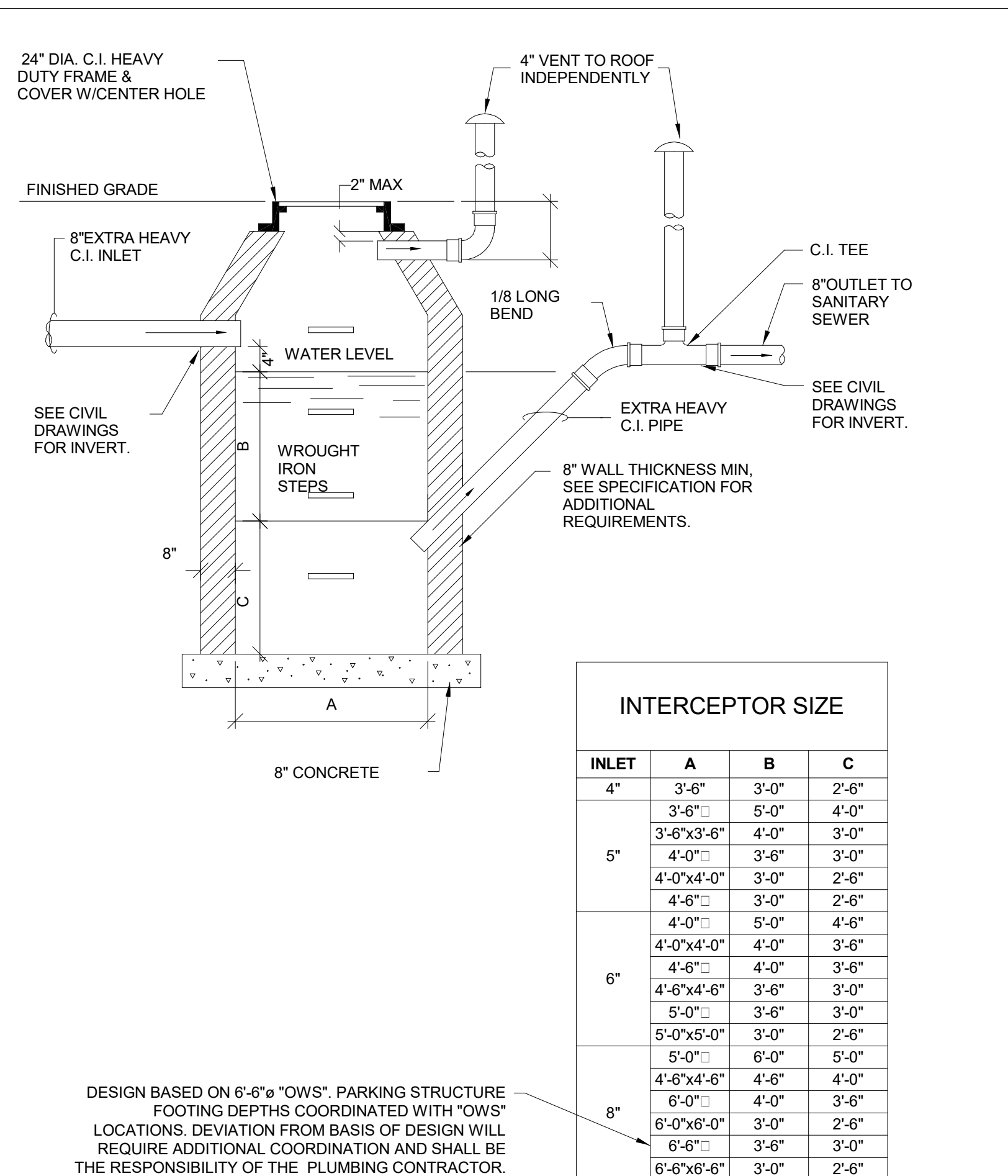
1. THE PLUMBING CONTRACTOR SHALL VISIT THE SITE TO DETERMINE ALL PRE-EXISTING CONDITIONS AND WORK NECESSARY PRIOR TO SUBMISSION OF BID PRICE.
2. THE PLUMBING CONTRACTOR SHALL BE FAMILIAR WITH ALL CONTRACT DOCUMENTS FOR ALL TRADES AND COORDINATE WITH OTHER CONTRACTORS.
3. THE DRAWINGS ARE DIAGRAMMATIC ONLY. FINAL ROUTING OF PIPING, FIXTURE AND EQUIPMENT LOCATIONS SHALL BE DETERMINED IN THE FIELD. PROVIDE ALL ADDITIONAL OFFSETS, ELBOWS, ETC., AT NO ADDITIONAL COST TO THE OWNER.
4. CONSTRUCT AND INSTALL ALL PLUMBING IN ACCORDANCE WITH THE LATEST EDITION OF 248 CMR 10.00: UNIFORM STATE PLUMBING CODE.
5. PROVIDE ALL INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE PLUMBING SYSTEMS WORK COMPLETE AND READY FOR OPERATION.
6. PROVIDE (FURNISH AND INSTALL) ALL PLUMBING WORK IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
7. INSTALL ALL PLUMBING EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
8. FURNISH TO THE APPROPRIATE CONTRACTOR ALL INFORMATION REQUIRED FOR SETTING OF DECK OPENINGS FOR PLUMBING WORK. THIS INFORMATION SHALL BE FURNISHED IN A TIMELY MANNER SUCH THAT CONSTRUCTION COORDINATION SCHEDULE IS NOT JEOPARDIZED.
9. COORDINATE THE EXACT SIZES AND VERIFY ALL OPENINGS FOR PIPE PENETRATIONS WITH OTHER TRADES PRIOR TO SUBMISSION OF SHOP DRAWINGS AND INSTALLATION.

### BASIS OF DESIGN

1. UPPER DECK OF PARKING STRUCTURE DRAINAGE SIZED IN ACCORDANCE WITH CMR 248 10: UNIFORM STATE PLUMBING CODE SECTION 10.17 TABLES 1 & 2.

DECK DRAINS				
LOCATION	AREA (SQFT)	HORIZONTAL SLOPE	HORIZONTAL PIPE Ø"	VERTICAL CONDUCTOR Ø"
DECK AREA 1	1220	1/8"-1'0"	4	4
DECK AREA 2	4392	1/8"-1'0"	6	6
DECK AREA 3	4392	1/8"-1'0"	6	6
DECK AREA 4	4392	1/8"-1'0"	6	6
DECK AREA 5	4392	1/8"-1'0"	6	6
DECK AREA 6	4392	1/8"-1'0"	6	6
DECK AREA 7	1220	1/8"-1'0"	4	4

2. DRAINAGE FROM UPPER DECK SHALL BE ROUTED TO ONE OF (3) 8" OIL WATER SEPARATORS (OWS). OIL WATER SEPARATOR BY PLUMBING CONTRACTOR AND SHALL BE PROVIDED IN ACCORDANCE WITH CMR 240 10.09. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
3. PARKING AREA LOWER DECK RECEIVES RUN OFF FROM SURROUNDING BIKE PATH AND RETAINING WALL. DRAINAGE OF LOWER DECK BY SITE / CIVIL CONTRACTOR.



INTERCEPTOR SIZE			
INLET	A	B	C
4"	3'-6"	3'-0"	2'-6"
	3'-6" □	5'-0"	4'-0"
	3'-6"x3'-6"	4'-0"	3'-0"
5"	4'-0" □	3'-6"	3'-0"
	4'-0"x4'-0"	3'-0"	2'-6"
	4'-6" □	3'-0"	2'-6"
	4'-0" □	5'-0"	4'-6"
6"	4'-0"x4'-0"	4'-0"	3'-6"
	4'-6" □	4'-0"	3'-6"
	4'-6"x4'-6"	3'-6"	3'-0"
	5'-0" □	3'-6"	3'-0"
	5'-0"x5'-0"	3'-0"	2'-6"
8"	5'-0" □	6'-0"	5'-0"
	4'-6"x4'-6"	4'-6"	4'-0"
	6'-0" □	4'-0"	3'-6"
	6'-0"x6'-0"	3'-0"	2'-6"
	6'-6" □	3'-6"	3'-0"
6'-6"x6'-6"	3'-0"	2'-6"	

DESIGN BASED ON 6'-6" OWS. PARKING STRUCTURE FOOTING DEPTHS COORDINATED WITH "OWS" LOCATIONS. DEVIATION FROM BASIS OF DESIGN WILL REQUIRE ADDITIONAL COORDINATION AND SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR.

Project:

AYER COMMUTER RAIL PARKING FACILITY  
AYER, MA

Weston & Sampson  
100 Foxborough Boulevard Suite 250  
Foxborough, MA 02035  
(508) 698-3034 (800) 544MPCON  
www.westonandsampson.com

Consultants:

550 Townshill Lane Rd. Suite 100,  
West Hill, MA 01922  
T: (408) 342-2300 F: (408) 342-0222  
http://www.timhaas.com

North:

Revisions:

Rev	Date	Description
1	01/3/19	ADDENDUM 3

Seal:

### CONSTRUCTION DOCUMENTS

Date: 12/05/18  
Scale: AS NOTED  
Drawn By: RJH  
Reviewed By: SEH  
Checked By: SEH  
Approved By: SEH

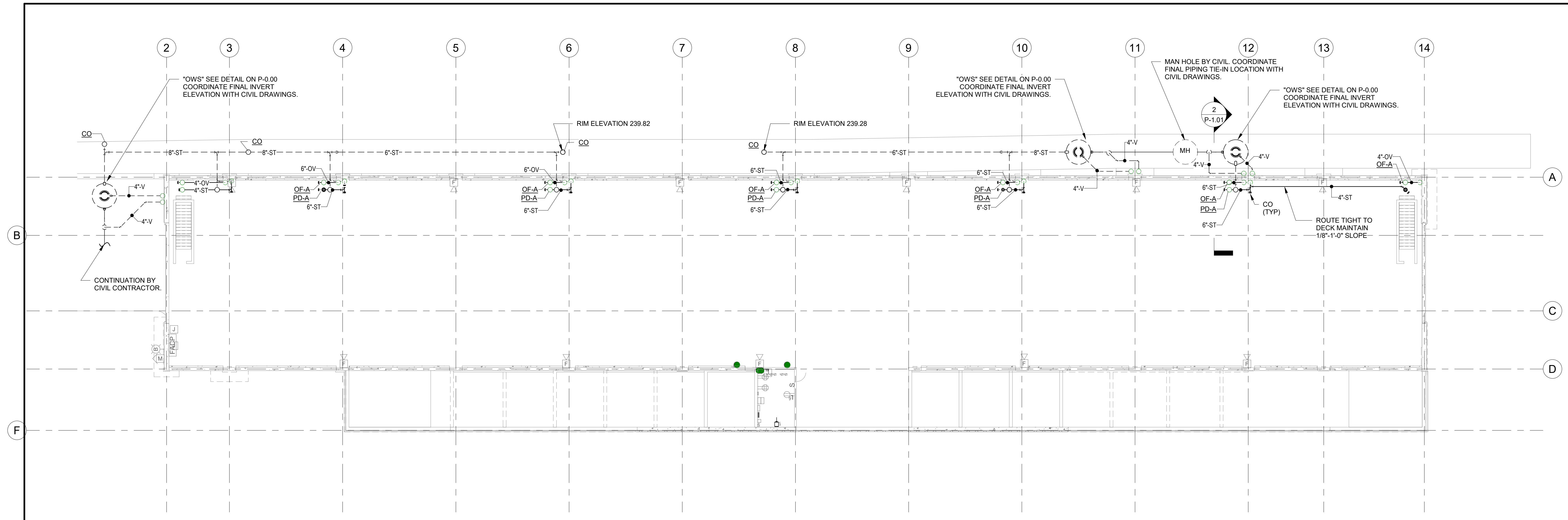
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## PLUMBING LEGEND

Sheet Number:  
**P-0.00**

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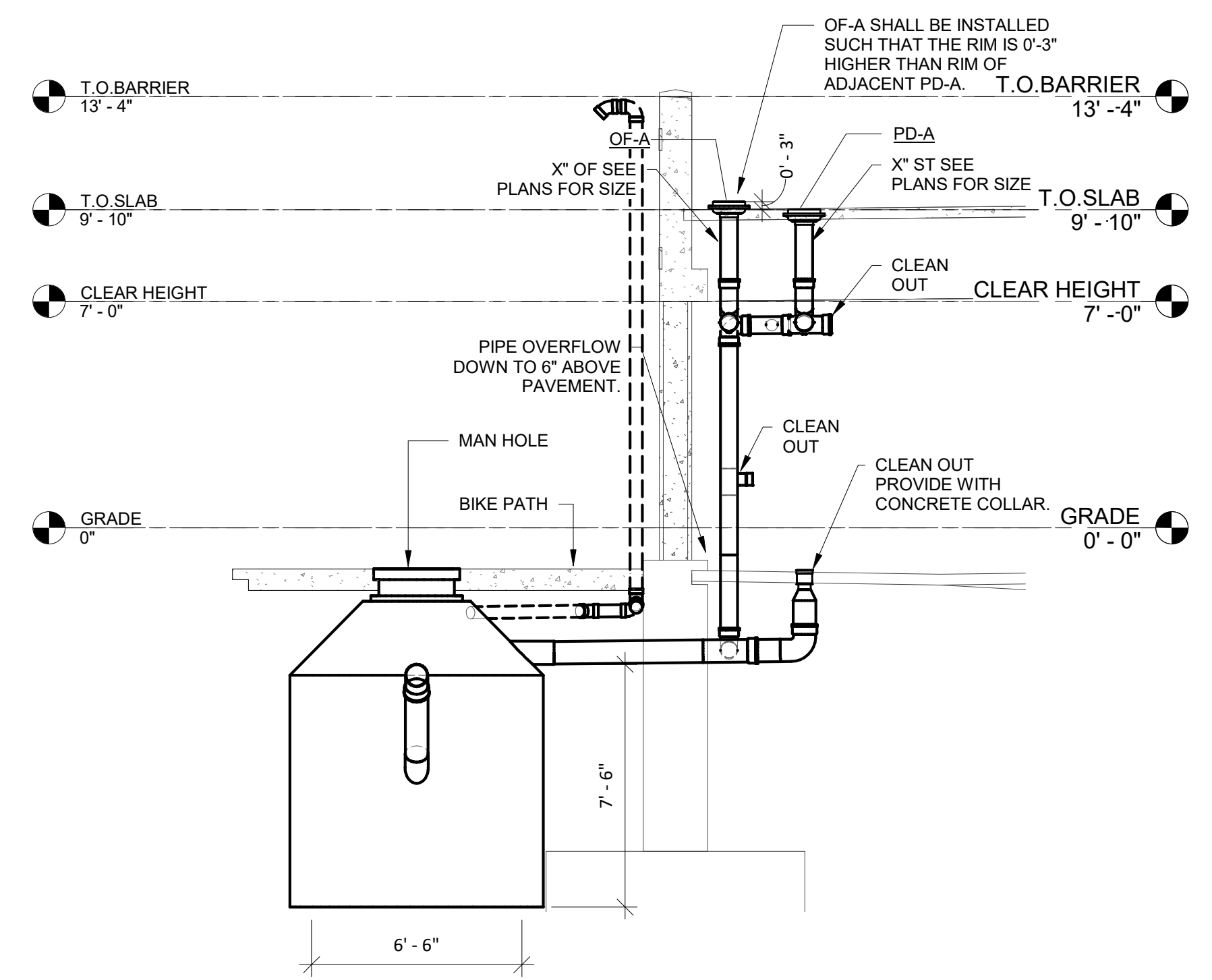




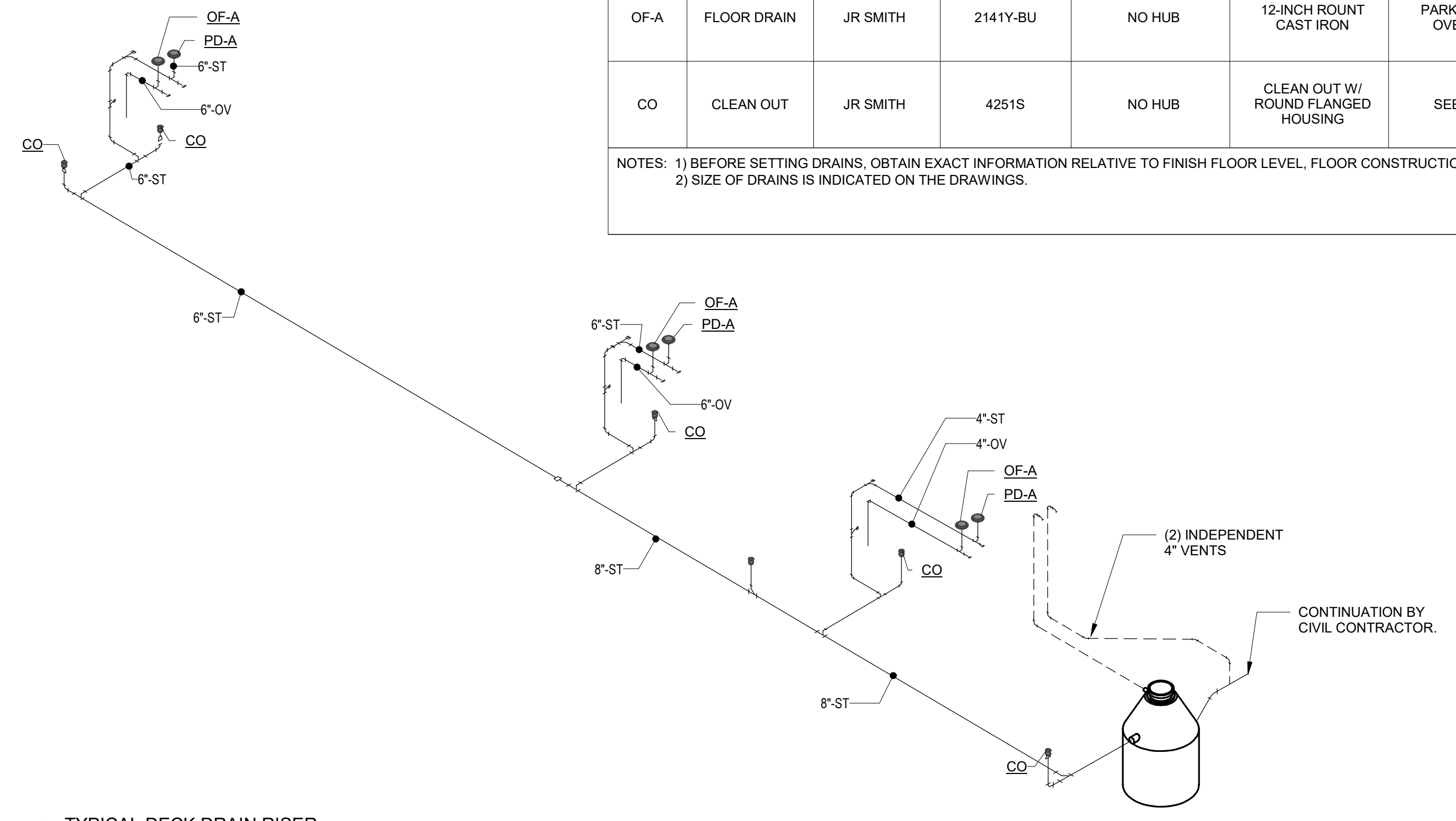
1 PARKING DECK DRAIN PLAN  
1/16" = 1'-0"

DRAIN SCHEDULE							
SYMBOL	TYPE	MANUFACTURER	MODEL	OUTLET	STRAINER	LOCATION	REMARKS
PD-A	FLOOR DRAIN	JR SMITH	2141Y-BU	NO HUB	12-INCH ROUNT CAST IRON	PARKING DECK	CAST IRON BODY, FLASHING COLLAR, SEDIMENT BUCKET, VANDAL PROOF GRATE.
OF-A	FLOOR DRAIN	JR SMITH	2141Y-BU	NO HUB	12-INCH ROUNT CAST IRON	PARKING DECK OVERFLOW	CAST IRON BODY, FLASHING COLLAR, SEDIMENT BUCKET, VANDAL PROOF GRATE.
CO	CLEAN OUT	JR SMITH	4251S	NO HUB	CLEAN OUT W/ ROUND FLANGED HOUSING	SEE PLANS	DUCO CAST IRON BODY, HEAVY DUTY HIGH AND LOW FLANGES, LOW FLANGE FOR CONCRETE RING.

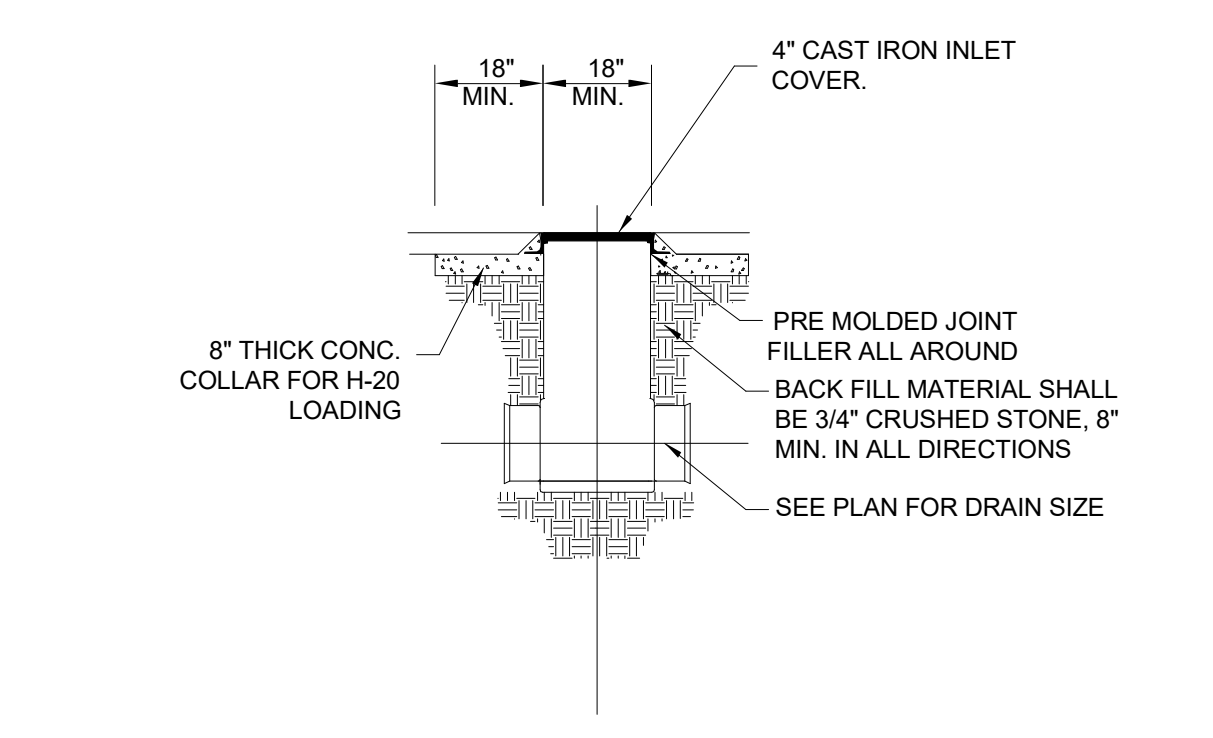
NOTES: 1) BEFORE SETTING DRAINS, OBTAIN EXACT INFORMATION RELATIVE TO FINISH FLOOR LEVEL, FLOOR CONSTRUCTION AND SET TOP OF DRAINS AT FINISH FLOOR LEVEL.  
2) SIZE OF DRAINS IS INDICATED ON THE DRAWINGS.



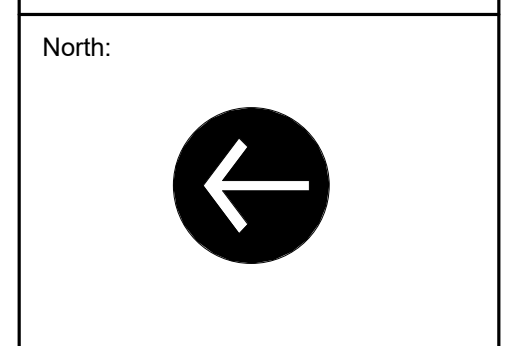
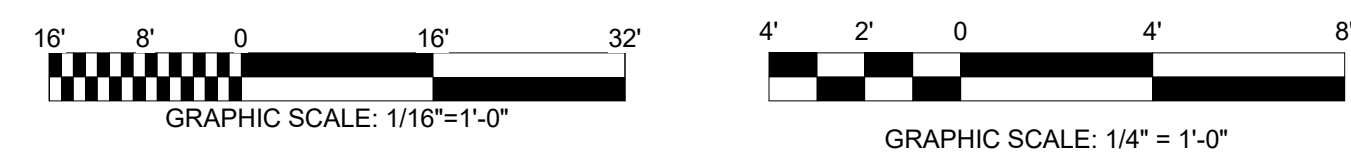
2 SECTION - TYPICAL PARKING DECK DRAINS  
1/4" = 1'-0"



3 TYPICAL DECK DRAIN RISER  
NTS




4 CLEAN OUT CONCRETE RING DETAIL  
NTS



Revisions:

Rev	Date	Description

Seal:  


CONSTRUCTION DOCUMENTS

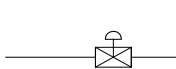
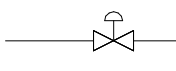
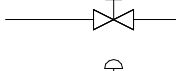
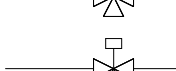
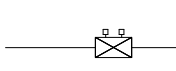
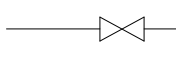
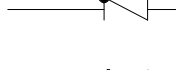
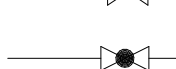
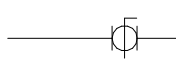
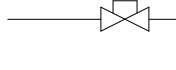




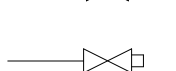
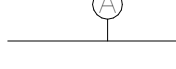
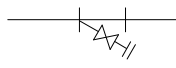
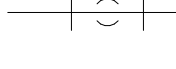
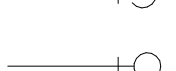
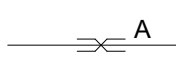

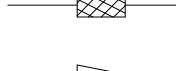

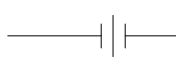
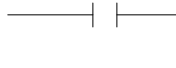
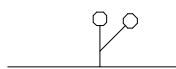


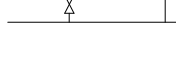







Date: 12/05/18  
 Scale: AS NOTED  
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 Checked By: SEH  
 Approved By: SEH

Drawing Title:  
 PLUMBING PLAN

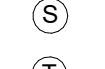
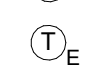
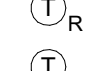

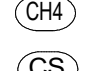

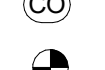


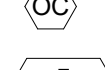
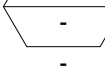
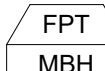
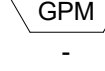
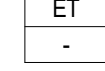
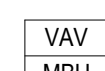



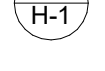
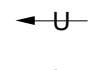
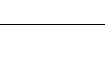

Sheet Number:  
**P-1.01**

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### PIPING SYMBOLS

	2-WAY MODULATING PRESSURE INDEPENDENT ACV (PIACV)
	2-WAY AUTOMATIC CONTROL VALVE (MODULATING)
	2-WAY AUTOMATIC CONTROL VALVE (TWO POSITION)
	3-WAY AUTOMATIC CONTROL VALVE (MODULATING)
	3-WAY AUTOMATIC CONTROL VALVE (TWO POSITION)
	AUTOMATIC FLOW LIMITING VALVE (PRESSURE INDEPENDENT)
	GATE VALVE
	CHECK VALVE
	TRIPLE DUTY VALVE
	GLOBE VALVE
	BALL VALVE
	BALANCING VALVE
	COMBINATION BALANCING & SHUT-OFF VALVE
	PRESSURE REDUCING VALVE
	BUTTERFLY VALVE
	ANGLE VALVE
	RELIEF/SAFETY VALVE
	WEIGHTED LEVER VALVE
	DRAIN/HOSE BIBB
	AIR VENT
	STRAINER W/HOSE BIBB DRAIN
	TEE-TURNED DOWN
	ELBOW-TURNED DOWN
	ELBOW-TURNED UP
	PIPE ANCHOR
	PIPE GUIDE
	FLEXIBLE PIPE CONNECTION
	REDUCER
	PIPE CAP
	UNION
	COMPANION FLANGE
	BLIND FLANGE
	FLOW MEASURING STATION
	THERMOMETER
	GAUGES (PRESSURE)
	PRESSURE TAP

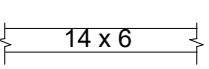
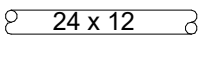
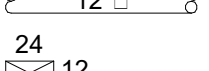
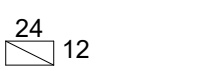
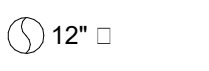
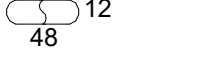
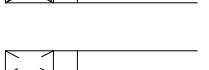

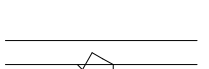
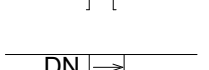
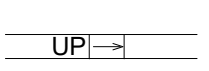
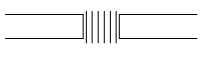
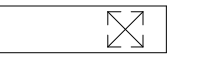
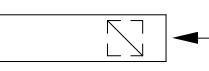
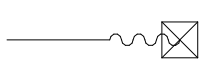

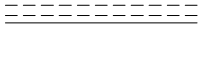

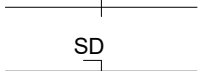
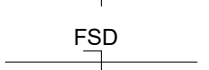
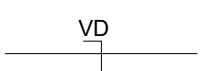
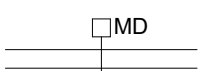
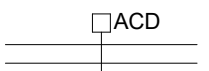

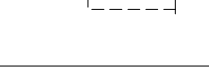


### CALLOUT SYMBOLS

	MANUAL HVAC OVERRIDE TIMER
	THERMOSTAT (TEMPERATURE SENSOR)
	THERMOSTAT-EXISTING (TEMPERATURE SENSOR)
	THERMOSTAT-RELOCATED (TEMPERATURE SENSOR)
	THERMOSTAT-NEW (TEMPERATURE SENSOR)
	HUMIDISTAT (HUMIDITY SENSOR)
	METHANE (CH4) SENSOR
	COMBINATION CO AND NO2 SENSOR
	CARBON DIOXIDE (CO2) SENSOR
	CARBON MONOXIDE (CO) SENSOR
	CONNECT NEW TO EXISTING
	LIMIT OF REMOVAL
	SMOKE DETECTOR
	CEILING MOUNTED ULTRASONIC OCCUPANCY SENSOR
	MOTORIZED EQUIPMENT (EF, AHU, ETC) UPPER - EQUIPMENT DESIGNATION LOWER - EQUIPMENT NUMBER
	MOTORIZED EQUIPMENT (FPT) UPPER - EQUIPMENT DESIGNATION MIDDLE - MAX CFM or MBH LOWER - MIN CFM or GPM
	NON-MOTORIZED EQUIPMENT (ET, AS, ETC) UPPER - EQUIPMENT DESIGNATION LOWER - EQUIPMENT NUMBER
	NON-MOTORIZED EQUIPMENT (VAV, EXV) UPPER - EQUIPMENT DESIGNATION MIDDLE - MAX CFM or MBH LOWER - MIN CFM or GPM
	UPPER - SECTION DESIGNATION LOWER - DRAWING NUMBER
	UPPER - RISER IDENTIFICATION LOWER - RISER NUMBER
	UNDERCUT DOOR
	LOUVERED DOOR

### ABBREVIATIONS

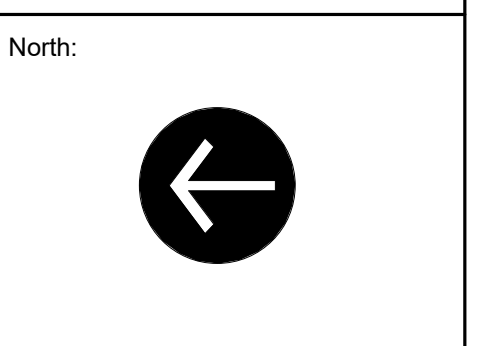
ACD	AUTOMATIC CONTROL DAMPER
ACV	AUTOMATIC CONTROL VALVE
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
ATC	AUTOMATIC TEMPERATURE CONTROL
CFM	CUBIC FEET PER MINUTE
CO	CLEAN OUT
DB	DRY BULB
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
ETC	ETCETERA
ETR	EXISTING TO REMAIN
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
FLA	FULL LOAD AMPS
FD	FIRE DAMPER
FSD	COMBINATION FIRE DAMPER/SMOKE DAMPER
FPM	FEET PER MINUTE
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUNDS PER HOUR
LPR	LOW PRESSURE STEAM CONDENSATE RETURN
LPS	LOW PRESSURE STEAM SUPPLY
LRA	LOCK ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MD	MOTORIZED DAMPER
MIN	MINIMUM
MPR	MEDIUM PRESSURE STEAM RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OED	OPEN END DRAIN
PIACV	PRESSURE INDEPENDENT AUTOMATIC CONTROL VALVE
PD	PRESSURE DROP
PE	PNEUMATIC ELECTRIC SWITCH
PRV	PRESSURE REDUCING VALVE
RA	RETURN AIR
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SMD	SMOKE DAMPER
SD	SMOKE DETECTOR
SP	STATIC PRESSURE (INCHES OF WATER)
SPD	SPLITTER DAMPER
VD	VOLUME DAMPER
WC	WATER COLUMN
WB	WET BULB TEMPERATURE °F
WMS	WIRE MESH SCREEN
X	EXISTING TO BE REMOVED
XTR	EXISTING TO REMAIN
XR	EXISTING TO BE RELOCATED
XRN	RELOCATED EQUIPMENT IN NEW LOCATION

### DUCTWORK SYMBOLS

	RECTANGULAR DUCT
	FLAT OVAL DUCT
	ROUND DUCT
	DUCT SECTION - SUPPLY
	DUCT SECTION - RETURN
	ROUND DUCT WITH SIZE
	FLAT OVAL DUCT WITH SIZE
	DUCT TURNING UP
	DUCT TURNING DOWN
	VOLUME EXTRACTOR
	SPLITTER DAMPER
	DUCT DROP IN RESPECT TO AIR FLOW
	DUCT RISE IN RESPECT TO AIR FLOW
	FLEXIBLE DUCT CONNECTION
	DIFFUSER
	RETURN/EXHAUST OUTLET
	DIFFUSER WITH FLEX DUCT
	RETURN/EXHAUST OUTLET
	ACOUSTICAL DUCT LINING
	SOUND ATTENUATOR
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION FIRE/SMOKE DAMPER
	VOLUME DAMPER
	MOTORIZED DAMPER
	AUTOMATIC CONTROL DAMPER
	TRANSFER DUCT

### GENERAL NOTES

- THE HVAC CONTRACTOR SHALL BE FAMILIAR WITH ALL CONTRACT DOCUMENTS FOR ALL TRADES AND COORDINATE WITH OTHER CONTRACTORS.
- THE DRAWINGS ARE DIAGRAMMATIC ONLY; FINAL ROUTING OF DUCTWORK, PIPING AND EQUIPMENT LOCATIONS SHALL BE DETERMINED IN THE FIELD. PROVIDE ALL ADDITIONAL OFFSETS, ELBOWS, ETC., AT NO ADDITIONAL COST TO THE OWNER.
- CONSTRUCT AND INSTALL ALL DUCTWORK IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA STANDARDS.
- COORDINATE ALL ELECTRICAL AND PLUMBING REQUIREMENTS WITH THE ELECTRICAL AND PLUMBING CONTRACTORS.
- AUTOMATIC TEMPERATURE CONTROL (ATC) CONTRACTOR: COORDINATE THERMOSTAT LOCATIONS WITH THE ARCHITECTURAL PLANS. INSTALL ALL SENSORS AND FINISHED SPACE CONTROLS INCLUDING THERMOSTATS 54" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
- PROVIDE ALL INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE HVAC WORK COMPLETE AND READY FOR OPERATION.
- PROVIDE (FURNISH AND INSTALL) ALL HVAC WORK SHALL BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
- INSTALL ALL HVAC EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- FURNISH TO THE GENERAL CONTRACTOR ALL INFORMATION REQUIRED FOR SETTING OF WALL, ROOF AND PARTITION OPENINGS FOR HVAC WORK. THIS INFORMATION SHALL BE FURNISHED IN A TIMELY MANNER SUCH THAT CONSTRUCTION SCHEDULE IS NOT JEOPARDIZED.
- FIELD MEASURE THE EXACT SIZES AND VERIFY ALL OPENINGS FOR LOUVERS PRIOR TO SUBMISSION OF SHOP DRAWINGS AND INSTALLATION.



Revisions:

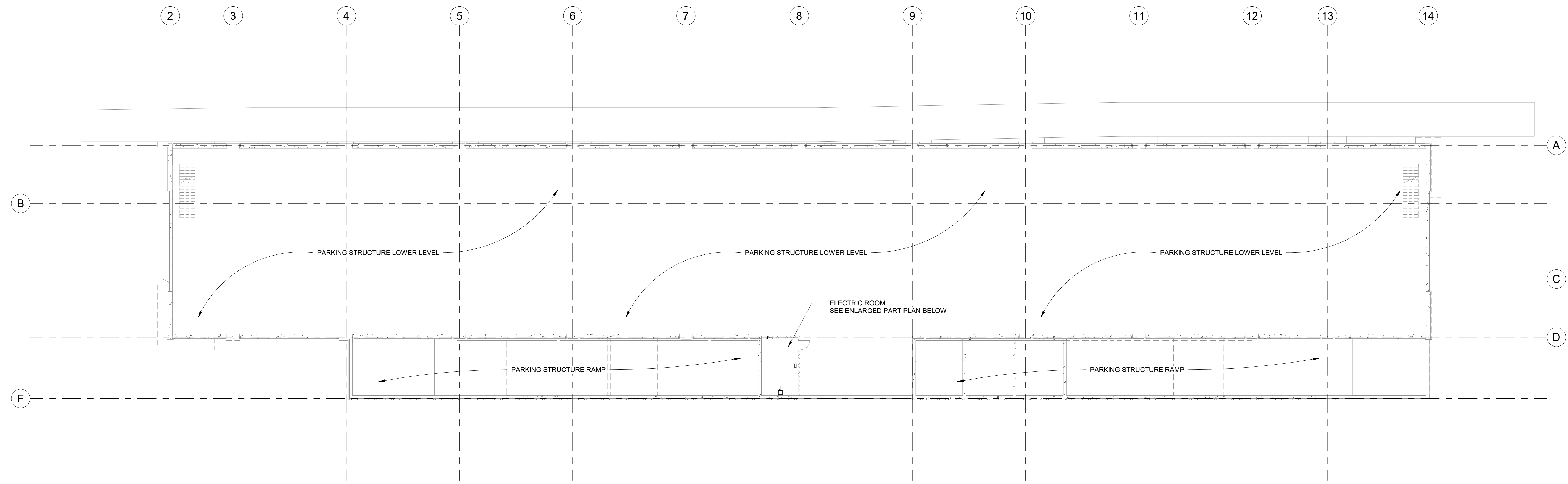
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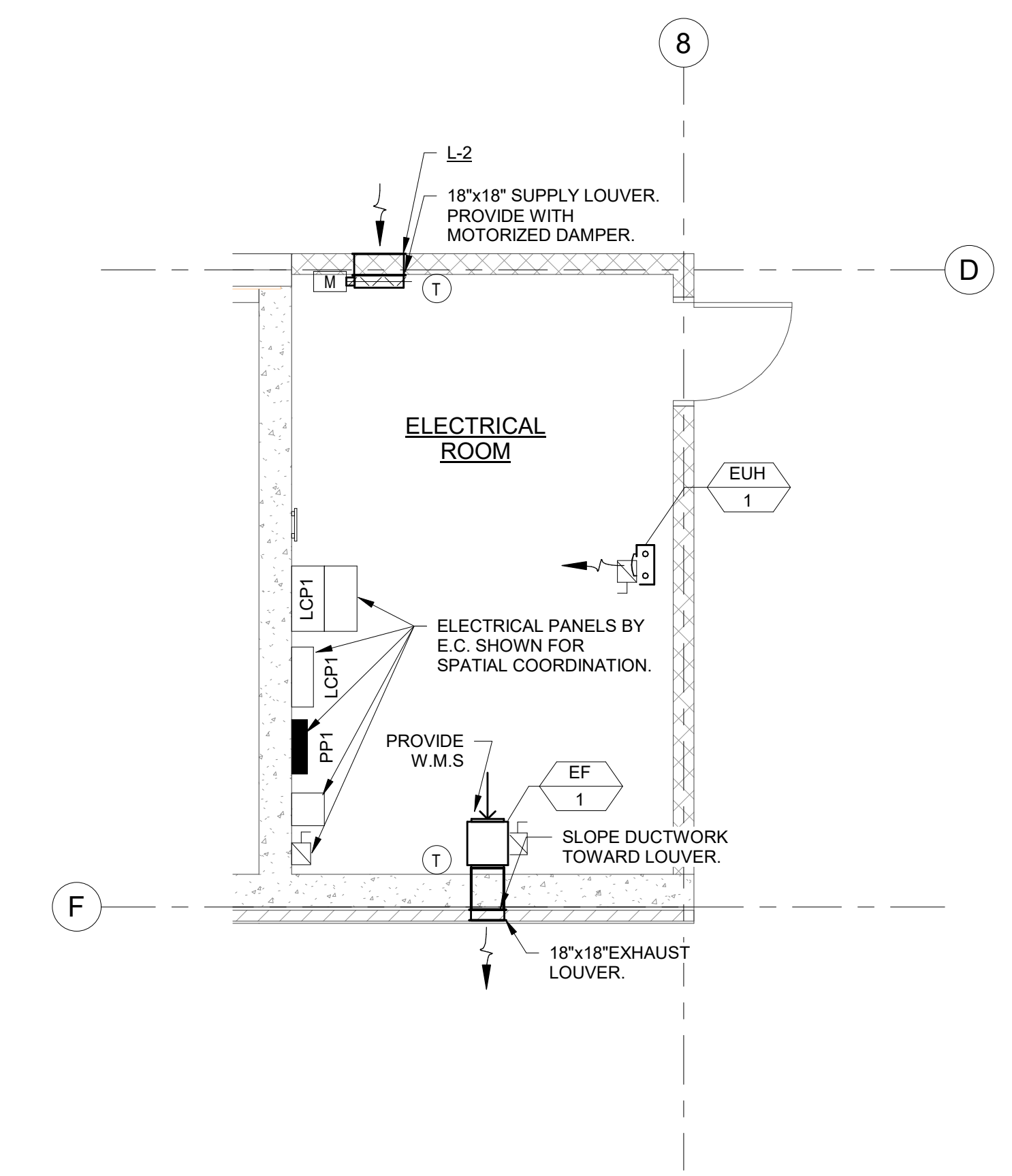
CONSTRUCTION DOCUMENTS

Date: **12/05/18**  
 Scale: AS NOTED  
 Drawn By: RJH  
 Reviewed By: SEH  
 Checked By: SEH  
 Approved By: SEH

Drawing Title:  
**HVAC PART PLAN**  
 Sheet Number:  
**H-1.01**



1 PARKING STRUCTURE - LOWER LEVEL  
 1/16" = 1'-0"



2 ELECTRICAL ROOM ENLARGED PART PLAN  
 1/4" = 1'-0"

FAN

TAG	SERVICE	LOCATION	FAN TYPE	CFM	E.S.P. (IN WG)	WHEEL		FAN RPM	MOTOR RPM	VFD/ECM	ELECTRICAL DATA					MANUFACTURER (BASIS OF DESIGN)	MODEL NUMBER	NOTES
						TYPE	DRIVE				BHP	HP	V	PH	HZ			
EF-1	ELECTRICAL ROOM	ELECTRICAL ROOM	INLINE	550	.5	BI	DIRECT	1634	1725	Y	.12	1/6	115	1	60	GREENHECK	SQ-95-VG	1,2

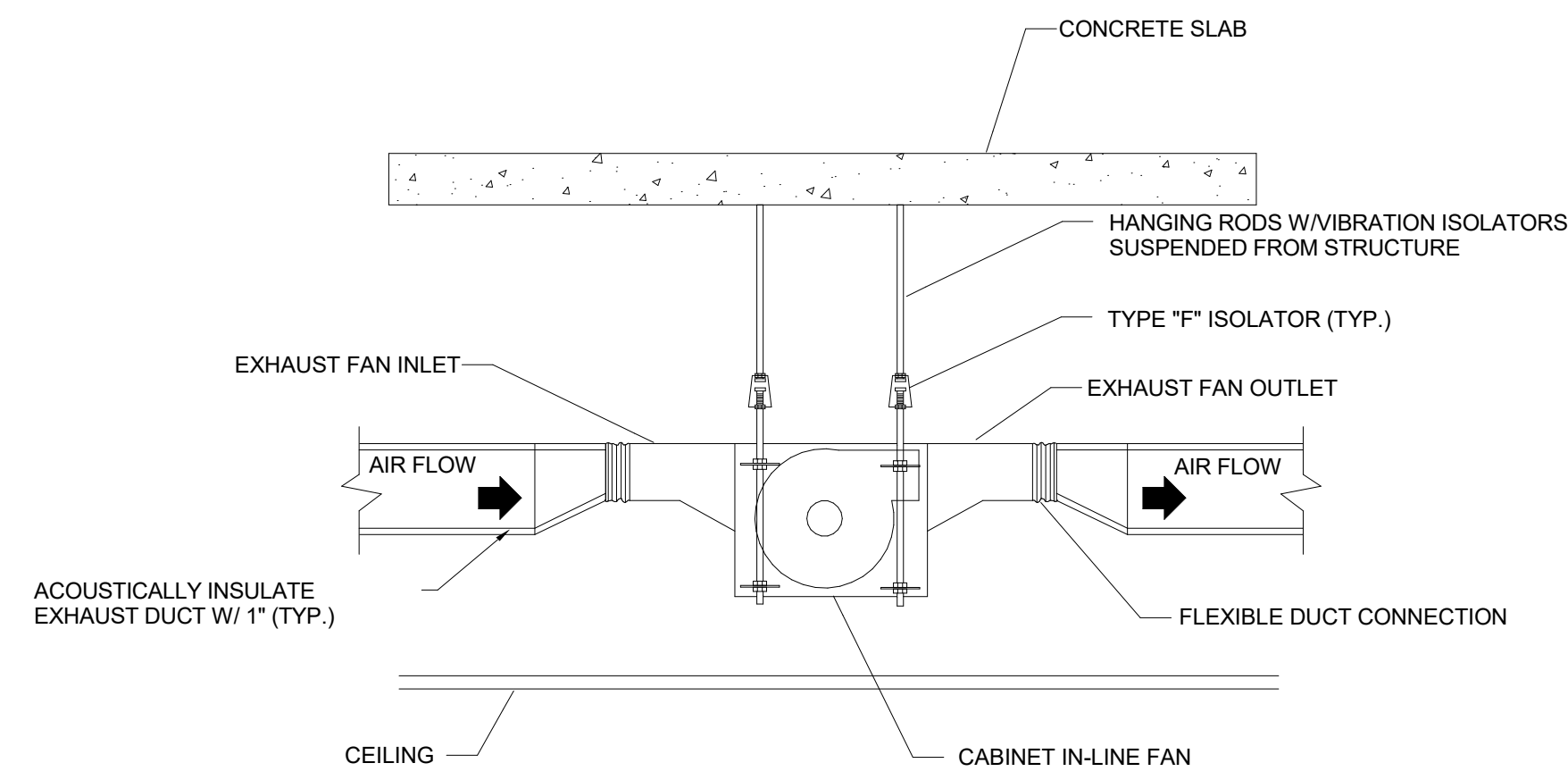
- NOTES:  
 1. PROVIDE WITH VARIGREEN MOTOR WITH DIAL ON FAN & 0-10VDC INPUT, DISCONNECT SWITCH, MOTORIZED DAMPER, AND MOTOR COVER  
 2. REFER TO HVAC PLANS AND DETAIL ON DWG H5.01

ELECTRIC UNIT HEATER SCHEDULE

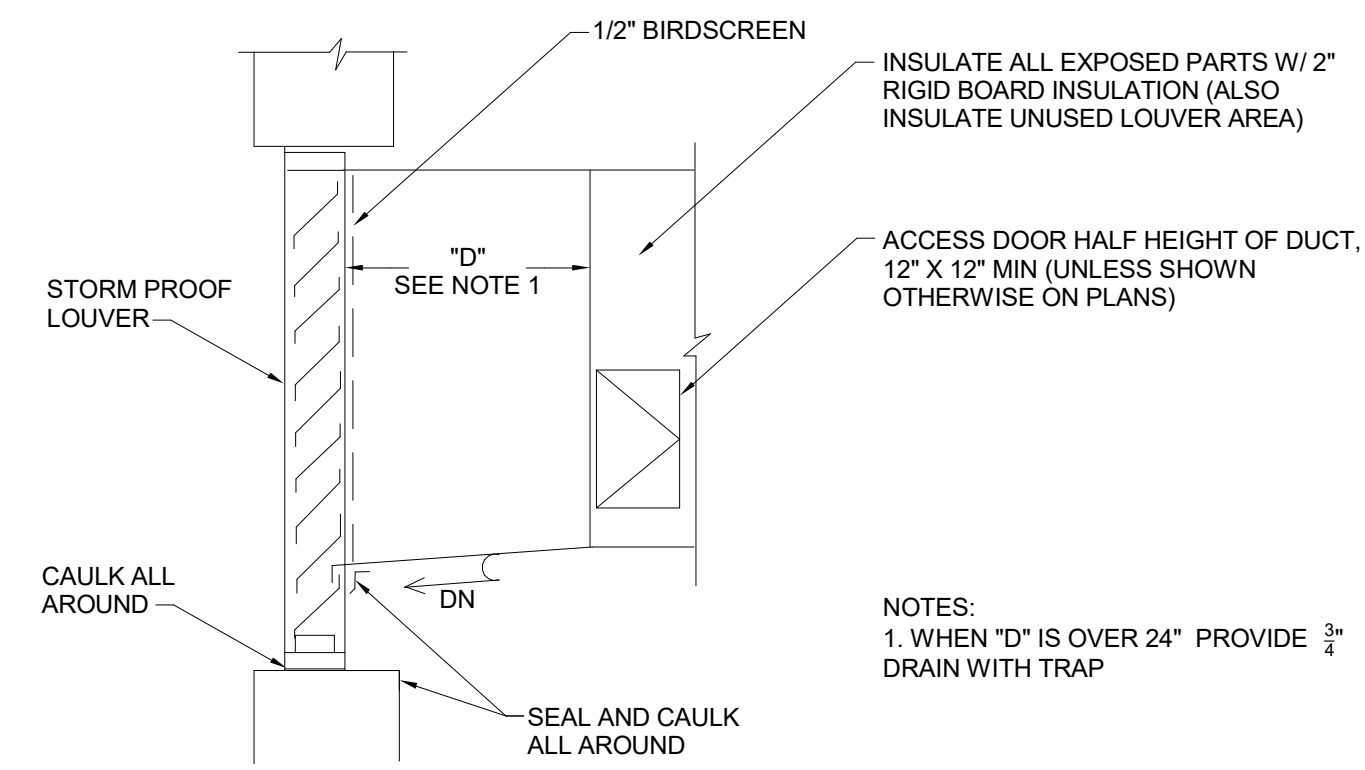
TAG	LOCATION & SERVICE	TYPE	CAPACITY		NO. OF STAGES	CFM	EAT (°F)	LAT (°F)	ELECTRICAL DATA				CONTROL OPTIONS	EMERGENCY POWER	MANUFACTURER (BASIS OF DESIGN)	MODEL NUMBER	NOTES	
			KW	MBH					FAN HP	A	V	PH						HZ
EUH-1	ELECTRICAL ROOM	WALL MOUNT	5	17	1	310	45	96	1/50	24.03	208	1	60	REMOTE THERMOSTAT	N	REZNOR	EGEB	1

- NOTES:  
 1. PROVIDE WITH REMOTE THERMOSTAT, UNIVERSAL CEILING BRACKET, DISCONNECT SWITCH, SUMMER FAN SWITCH

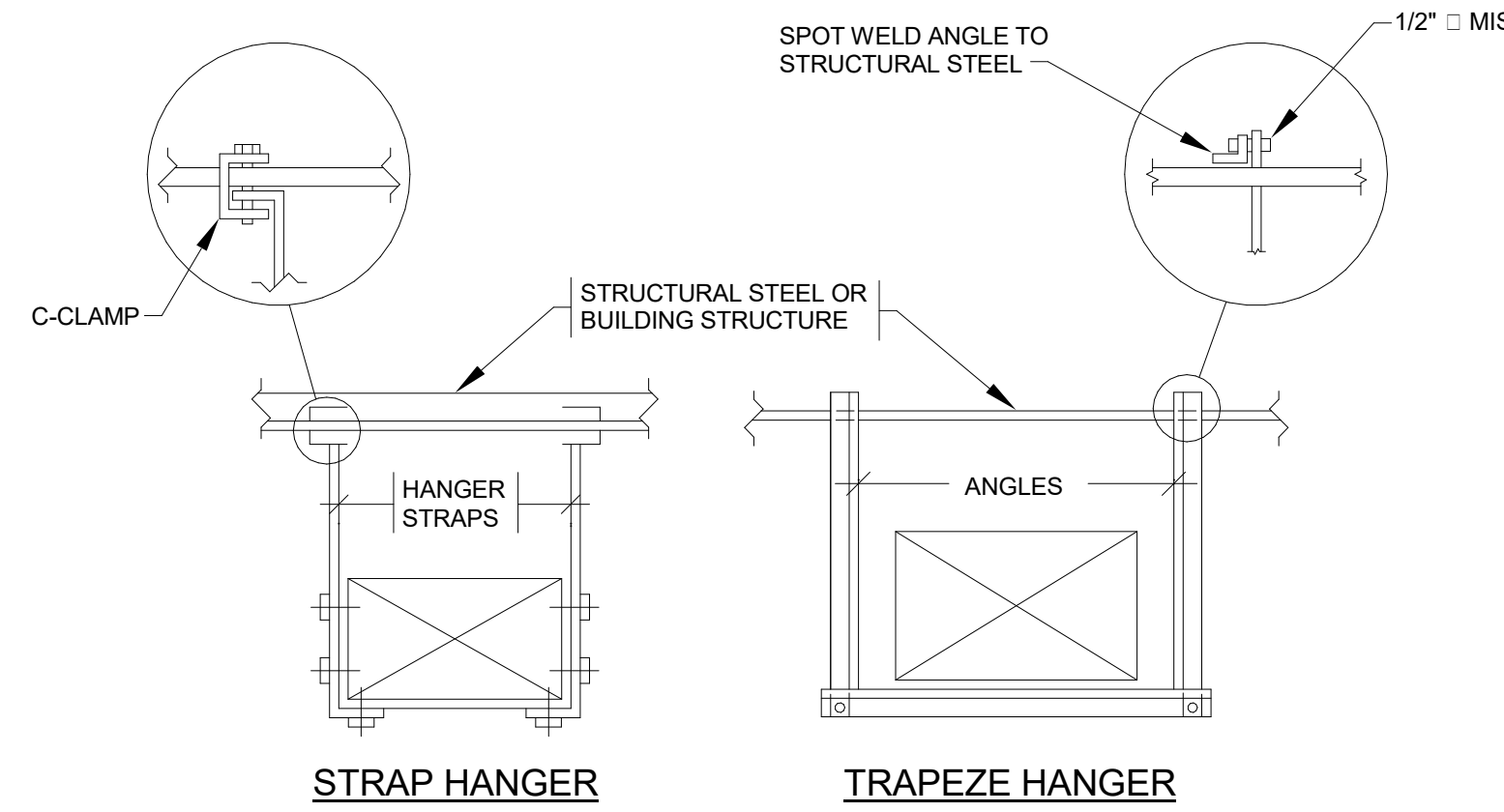
## HVAC DETAILS



INLINE CABINET FAN DETAIL



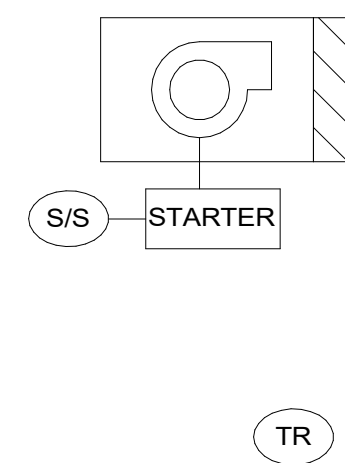
LOUVER DETAIL



- NOTES:
- REFER TO OTHER DETAILS ON THIS DRAWING FOR HIGH VELOCITY DUCTWORK DETAILS AS REQUIRED.
  - FOR STRAP AND TRAPEZE HANGER SIZE, REFER TO SMACNA DUCT STANDARDS
  - NO POP RIVETS ALLOWED, USE SELF-TAPPING SHEET METAL SCREWS ONLY.

DUCT HANGER DETAIL (LOW VELOCITY)

## CONTROL DIAGRAMS



ELECTRIC UNIT HEATER SEQUENCE OF OPERATIONS:

GENERAL:

- THE HEATER SHALL BE CONTROLLED BY A SPACE TEMPERATURE SENSOR (SEE PLANS FOR LOCATION).
- PROVIDE HARDWARE, WIRING, PROGRAMMING, AND GRAPHICS TO THE BUILDING BAS.

SEQUENCE:

- ON A CALL FOR HEATING FROM SPACE TEMPERATURE SENSOR (50°F), THE COIL SHALL BE ENERGIZED AND THE FAN SHALL TURN ON:
- THE REVERSE SHALL OCCUR UPON A RISE IN TEMPERATURE

ELECTRIC HEATER (EUH-1)

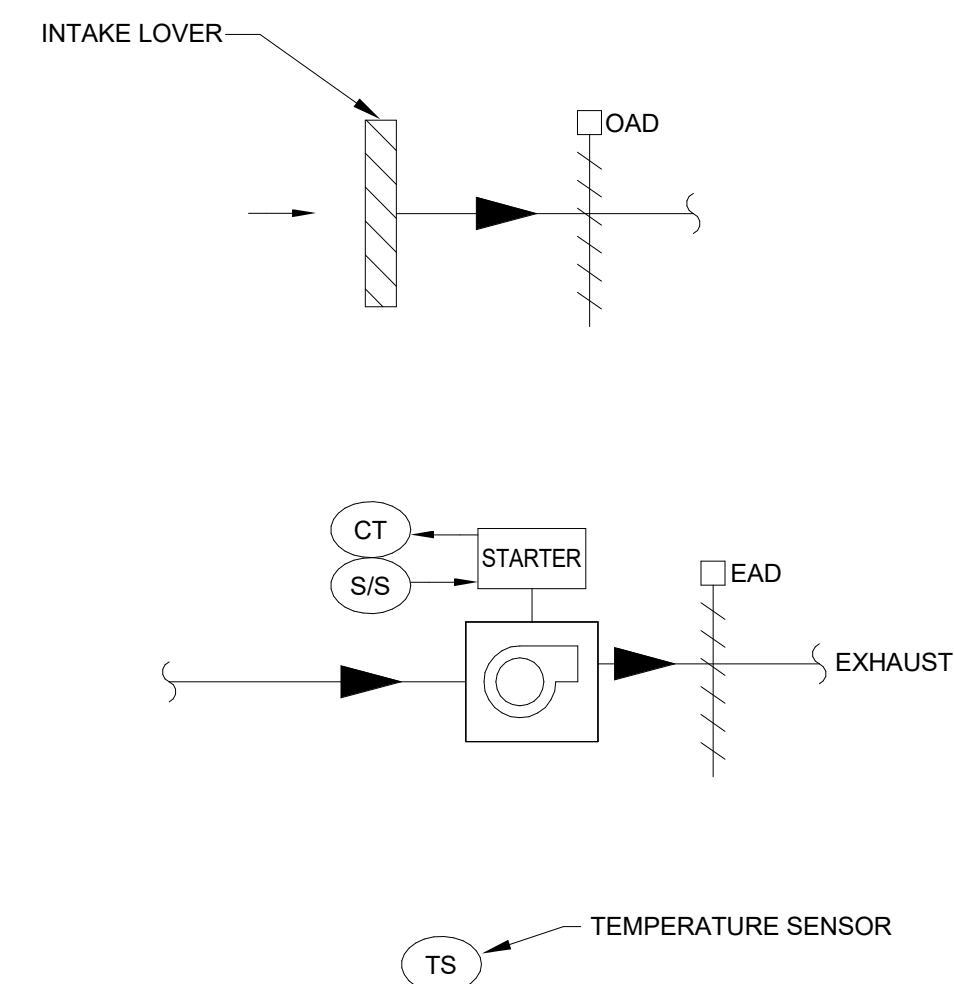
EXHAUST FAN SEQUENCE OF OPERATIONS:

GENERAL:

- EXHAUST FAN SHALL BE STARTED AND STOPPED THROUGH A START/STOP SIGNAL FROM THE THERMOSTAT.
- ALL TEMPERATURES LISTED ARE FAHRENHEIT.
- PROVIDE ALL REQUIRED WIRING, CONDUIT, HARDWARE, INTERFACES, RELAYS, ETC. TO SATISFY EXHAUST FAN SEQUENCE.

FAN CONTROL:

- WHEN THE TEMPERATURE SENSOR SENSES A TEMPERATURE ABOVE 90°F (ADJ), THE OUTSIDE AIR DAMPER (OAD) SHALL OPEN, THEN THE EXHAUST AIR DAMPER SHALL OPEN AND THEN THE FAN SHALL BE ENERGIZED. WHEN THE TEMPERATURE SENSOR SENSES A TEMPERATURE BELOW 85°F (ADJ) THE REVERSE SHALL OCCUR AND THE FAN SHALL BE OFF.



EXHAUST FAN (W/OA INTAKE)

Project:



AYER COMMUTER RAIL  
PARKING FACILITY  
AYER, MA



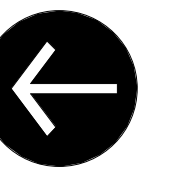
100 Foxborough Boulevard Suite 250  
Foxborough, MA 02005  
(508) 698-3034 (800) 5AMPSON  
www.westonandsampson.com

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550 Townshp Lane Rd. Suite 100,  
Blue Hill, MA 01922  
T: (404) 342-2000 F: (404) 342-0222  
http://www.timhaahs.com

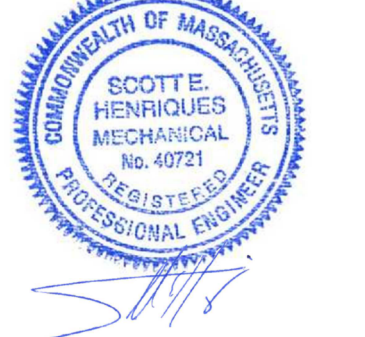
North:



Revisions:

Rev	Date	Description

Seal:



CONSTRUCTION  
DOCUMENTS

Date: 12/05/18

Scale: AS NOTED

Drawn By: RJH

Reviewed By: SEH

Checked By: SEH

Approved By: SEH

Drawing Title:

HVAC CONTROLS  
& DETAILS

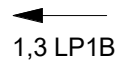
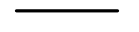
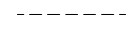

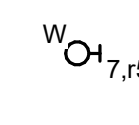
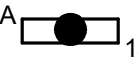
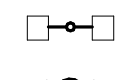
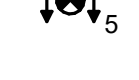


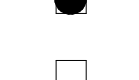

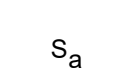


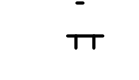
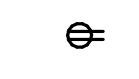







Sheet Number:

H-5.01

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AC	ALTERNATING CURRENT
A	AMPERE
ATC	AUTOMATIC TEMPERATURE CONTROLS
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
C	CONDUIT
CKT	CIRCUIT
CB	CIRCUIT BREAKER
EC	ELECTRICAL CONTRACTOR
EMT	ELECTRIC METALLIC TUBING
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EF	EXHAUST FAN
FL	FLOOR
FLA	FULL LOAD AMPERE
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
IG	ISOLATED GROUND
JB	JUNCTION BOX
KVA	KILOVOLT AMPERES
KW	KILOWATT
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MC	MECHANICAL CONTRACTOR
MTD	MOUNTED
MTG	MOUNTING
NMC	NON-METALLIC CONDUIT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PNL	PANELBOARD
PH	PHASE
PVC	POLYVINYL CHLORIDE CONDUIT
RSC	RIGID GALVANIZED STEEL CONDUIT
SF	SUPPLY FAN
SS	SAFETY SWITCH
TEL	TELEPHONE
TRF	TRANSFORMER
V	VOLTS
W	WATTS OR WIRE
WP	WEATHERPROOF
4WSN	4-WIRE SOLID NEUTRAL

RECEPTACLE ABBREVIATIONS	
GFI	GROUND FAULT CIRCUIT INTERRUPTER, PERSONAL PROTECTION
WP	WEATHERPROOF RECEPTACLE WITH COVERPLATE LISTED FOR WET LOCATION WITH AN ATTACHMENT PLUG INSERTED.

ELECTRICAL LEGEND	
<b>RACEWAY AND WIRING</b>	
	HOMERUN TO PANELBOARD. NUMBER OF TICKS INDICATES NUMBER OF #12 AWG CONDUCTORS CONTAINED IN RACEWAY. TWO (2) #12 AWG SHALL NOT BE INDICATED BY TICKS. NUMERALS 1 AND 3 INDICATE CIRCUITS IN PANELBOARD. RACEWAYS LARGER THAN 1/2" AND CONDUCTORS LARGER THAN #12 AWG SHALL BE INDICATED ON THE DRAWINGS. PROVIDE AN INSULATED GREEN GROUND WIRE IN ALL RACEWAYS MINIMUM SIZE TO BE #12AWG.
	RACEWAY EXPOSED
	RACEWAY CONCEALED IN SLAB, WALL OR LOCATED IN THE CEILING OF THE FLOOR BELOW
	FLEXIBLE CONNECTION
<b>LIGHTING FIXTURES</b>	
	WALL MOUNTED FIXTURE. SEE NOMENCLATURE ABOVE FOR LED FIXTURE.
	PENDANT OR SURFACE EMERGENCY LED DOWNLIGHT FIXTURE WITH EMERGENCY BATTERY BACKUP BALLAST. PROVIDE THIRD WIRE FOR EMERGENCY MODE BYPASS IF SWITCHED (TYPICAL).
	POLE MOUNTED SITE LIGHTING FIXTURE
	EXIT SIGN CEILING OR PENDANT MOUNTED. ARROWS DENOTE DIRECTION OF EGRESS. NUMERAL DENOTES CIRCUIT NUMBER. SHADED CHEVRONS DENOTE EXIT FACES.
	WALL MOUNTED EXIT SIGN. ARROWS DENOTE DIRECTION OF EGRESS. NUMERAL DENOTES CIRCUIT NUMBER. SHADED CHEVRONS DENOTE EXIT FACES.
	WALL MOUNTED FLOOD LIGHT
	1'X1' SURFACE MOUNTED FIXTURE ON EMERGENCY POWER
	1'X1' SURFACE MOUNTED FIXTURE
<b>LIGHTING CONTROL SWITCHES</b>	
(MOUNT 4'-0" AFF UNLESS NOTED OTHERWISE.)	
	SINGLE POLE SWITCH (120/277V) MOUNTED 4'-0" ABOVE FINISHED FLOOR. ALL OTHER MOUNTING HEIGHTS SHALL BE AS NOTED ON THE DRAWINGS. "a" SUBSCRIPT DENOTES CIRCUITS CONTROLLED.
	PHOTO-ELECTRIC CELL
<b>ONE-LINE POWER DIAGRAM SYMBOLS</b>	
	GROUND - SYSTEM AND/OR EQUIPMENT
	GROUND BAR
<b>RECEPTACLES</b>	
(MOUNT 18" AFF TO CENTER LINE UNLESS NOTED OTHERWISE)	
	DUPLEX CONVENIENCE OUTLET RATED 20A, 125V, U-SLOT GROUNDED TYPE MOUNTED 18" ABOVE FINISHED FLOOR TO CENTER LINE. ALL OTHER MOUNTING HEIGHTS SHALL BE AS NOTED ADJACENT TO THE SYMBOL. REFER TO RECEPTACLE ABBREVIATIONS FOR SPECIAL PURPOSE RECEPTACLES.
<b>POWER DISTRIBUTION EQUIPMENT</b>	
	DISTRIBUTION PANEL
	PANELBOARD-SURFACE MOUNTED
	FUSIBLE SAFETY SWITCH - RATING AND TYPE AS NOTED ON THE DRAWING. (30 AMP, 20 AMP FUSE, 3 POLE)
	UTILITY METER
<b>MISCELLANEOUS</b>	
	JUNCTION BOX WITH BLANK COVERPLATE, SIZE AS REQUIRED BY N.E.C.
	PULL BOX. TYPE AS NOTED ON THE DRAWINGS OR AS REQUIRED BY N.E.C.
	DRAWING REFERENCE. "3" INDICATED DETAIL NUMBER, "E1.02" INDICATES DRAWING NUMBER.

- GENERAL NOTES**
- DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHTS, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
  - ALL STRAIGHT FEEDER, BRANCH CIRCUIT AND AUXILIARY SYSTEM CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 150 FEET. EXACT SIZES OF PULL BOXES AND LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ELECTRICAL CONTRACTOR.
  - ALL LIGHTING FIXTURES, ELECTRICAL DEVICES, CABLES AND RACEWAYS ARE TO BE INDEPENDENTLY SUPPORTED OF THE CEILING SYSTEM. FIXTURES ARE TO BE SUPPORTED FROM THE STRUCTURE BY THE USE OF JACK CHAIN, THREADED ROD OR OTHER MEANS APPROVED BY THE ENGINEER. CEILING SYSTEM WIRES AND GRID ARE NOT TO BE UTILIZED FOR THE SUPPORT OF ELECTRICAL DEVICES, CABLES AND RACEWAYS. APPROVED SUPPORTS, HANGERS, CLIPS, ETC. ARE TO BE UTILIZED.
  - WORK SHALL CONFORM TO THE MASSACHUSETTS ELECTRICAL CODE, MASSACHUSETTS BUILDING CODE, NFPA AND REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION.
  - THE WORD "CONTRACTOR" AS USED IN THE "ELECTRICAL WORK" SHALL MEAN THE ELECTRICAL SUBCONTRACTOR.
  - CONTRACTOR SHALL PAY FOR ALL PERMITS, INSURANCE AND TESTS, AND SHALL PROVIDE LABOR AND MATERIAL TO COMPLETE THE ELECTRICAL WORK SHOWN.
  - CONTRACTOR SHALL PAY ELECTRIC UTILITY COMPANY BACKCHARGES AND PROVIDED COORDINATION WITH SAME.
  - DURING CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL KEEP HIS PORTION OF THE WORK NEAT, CLEAN AND ORDERLY.
  - ALL SYSTEMS SHALL BE TESTED FOR SHORT CIRCUIT AND GROUNDS PRIOR TO ENERGIZING AND ANY DEFECTS SHALL BE CORRECTED.
  - COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED FOR ELECTRICAL EQUIPMENT. WHERE SPECIFIED ELECTRICAL EQUIPMENT IS SUBSTITUTED, THE ELECTRICAL CONTRACTOR SHALL SUBMIT COMPLETE SPECIFICATIONS ON THE SUBSTITUTE AS WELL AS THE ITEM ORIGINALLY SPECIFIED.
  - MATERIALS SHALL BE SPECIFICATION GRADE AND UL LISTED.
  - WHERE MATERIAL IS CALLED OUT IN THE LEGEND BY MANUFACTURER, TYPE OR CATALOG NUMBER, SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OR DESIRED QUALITY. ACCEPTANCE OR REJECTIONS OF PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER.
  - WORK SHALL BE COORDINATED WITH THAT OF OTHER TRADES TO ELIMINATE INTERFERENCES.
  - ELECTRICAL CONTRACTOR SHALL OBTAIN SHOP DRAWINGS/SPECIFICATIONS OF ALL EQUIPMENT FROM THE GENERAL CONTRACTOR PRIOR TO PURCHASING AND INSTALLING ELECTRICAL EQUIPMENT FOR SAME. NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN ACTUAL EQUIPMENT INSTALLED AND CONTRACT DOCUMENTS.
  - ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF WHICH SYSTEM IS PUT INTO SERVICE.
  - WORK SHALL BE GROUNDED IN ACCORDANCE WITH CODE REQUIREMENTS. COMPLETE EQUIPMENT (INSULATED GREEN WIRE) GROUNDING SYSTEM SHALL BE INSTALLED.
  - WIRE SHALL BE TYPE "THHN-THWN" INSULATED FOR 600 VOLTS, MINIMUM SIZE #12 AWG COPPER UNLESS SPECIFICALLY NOTED OTHERWISE.
  - UNLESS NOTED OTHERWISE ALL BRANCH CIRCUIT WIRING SHALL BE IN RMC CONDUIT ABOVE GRADE AND SCH-80 PVC BELOW GRADE
  - BOXES SHALL BE GALVANIZED STEEL AND SHALL BE SIZED TO ACCOMMODATE THE EQUIPMENT OR APPARATUS TO BE INSTALLED. WHERE BOXES OF A STANDARD MAKE ARE NOT AVAILABLE, SPECIAL BOXES SHALL BE MANUFACTURED. FIXTURES SUPPORTED ON THE CEILING OR ON THE WALL SHALL HAVE SUITABLE FIXTURE SUPPORT FOR THE SPECIFIC FIXTURE.
  - PANELBOARDS SHALL BE DEAD FRONT, THERMAL MAGNETIC BOLT-ON CIRCUIT BREAKER TYPE, DESIGNED FOR SURFACE OR FLUSH MOUNTING AS INDICATED ON PLAN, AND HAVING CONNECTIONS TO 120/208 OR 277/480 VOLT, 3 PHASE, 4 WIRE SERVICE. ALL BUS BARS SHALL BE COPPER. CABINETS SHALL BE MADE OF CODE GAUGE GALVANIZED SHEET STEEL, WITH A MINIMUM OF 4 INCH GUTTERS, DOOR IN DOOR CONSTRUCTION, LOCKED DOOR, AND FLUSH HINGES. TYPEWRITTEN INDEX SHALL BE MOUNTED ON DOOR INSIDE TRANSPARENT COVER INDICATING LOAD SERVED. PANELS SHALL INCLUDE SEPARATE EQUIPMENT GROUND BUS.
  - PANELBOARDS, DISCONNECT SWITCHES, AND CONTROLLERS SHALL HAVE NAMEPLATES OF BLACK LAMINATED PLASTIC WITH ENGRAVED WHITE LETTERS, SECURED WITH SELF-TAPPING SCREWS.
  - CONTRACTOR SHALL PHASE BALANCE PANELBOARDS IN THE FIELD. LOAD ON EACH PHASE SHALL BE BALANCED WITHIN 10% OF EACH OTHER.
  - WALL PLATES SHALL BE PROVIDED FOR EACH SWITCH, RECEPTACLE, DATA AND TELEPHONE OUTLET. PROVIDE WALL PLATES WITH STAINLESS STEEL FINISH FOR ALL DEVICES IN FINISHED AREAS. FOR DEVICES IN UNFINISHED AREAS, PROVIDE CAST IRON OR ALLOY OF SUITABLE TYPE TO MATCH OUTLET BOXES SPECIFIED.
  - TOGGLE SWITCHES SHALL BE OF THE SINGLE POLE A.C. QUIET TOGGLE TYPE FOR MOUNTING IN A SINGLE-GANG SPACING. TOGGLE SWITCHES SHALL BE FULLY RATED 20 AMPERES AT 120/277 VOLT.
  - DUPLEX WALL RECEPTACLES SHALL BE 2 POLE, 3 WIRE, GROUNDING TYPE 20 AMPERE, 125 VOLT WITH METAL PLASTER EARS. RECEPTACLES SHALL BE NEMA STANDARD CONFIGURATION 5-20R.
  - FUSED OR UNFUSED SAFETY SWITCHES SHALL BE TOTALLY ENCLOSED, HEAVY DUTY TYPE. SWITCHES SHALL HAVE VOLTAGE, HORSEPOWER AND AMPERE RATING SUITABLE FOR THE APPLICATION. PROVIDE NUMBER OF POLES AS REQUIRED. SWITCHES LOCATED EXTERIOR TO THE BUILDING OR IN DAMP/WET LOCATIONS SHALL BE IN A NEMA 3R ENCLOSURE.
  - FUSES SHALL BE DUAL ELEMENT, TIME DELAY TYPE, AS MANUFACTURED BY BUSSMAN, RELIANCE OR APPROVED EQUAL.
  - FURNISH AND INSTALL SLEEVES IN FLOORS, BEAMS, WALLS, ETC. REQUIRED FOR INSTALLING THIS WORK.
  - LIGHTING FIXTURES SHALL BE INDIVIDUALLY SUPPORTED FROM THE STRUCTURAL SLAB OR STRUCTURAL BUILDING MEMBER. FIXTURES WILL NOT BE PERMITTED TO BE SUPPORTED FROM SUSPENDED CEILING OR ROOF DECK.
  - CONDUIT RUNS AS SHOWN ON THE PLANS ARE DIAGRAMMATIC ONLY; EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED IN THE FIELD.

Project:



AYER COMMUTER RAIL PARKING FACILITY  
AYER, MA

Weston & Sampson

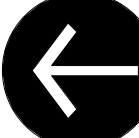
100 Foxborough Boulevard Suite 250  
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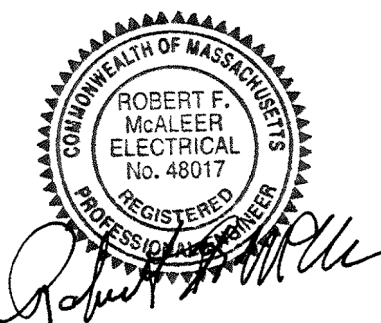
North:



Revisions:

Rev	Date	Description

Seal:



CONSTRUCTION DOCUMENTS

Date: **12/05/18**

Scale: AS NOTED

Drawn By: ICA

Reviewed By: RFM

Checked By: RFM

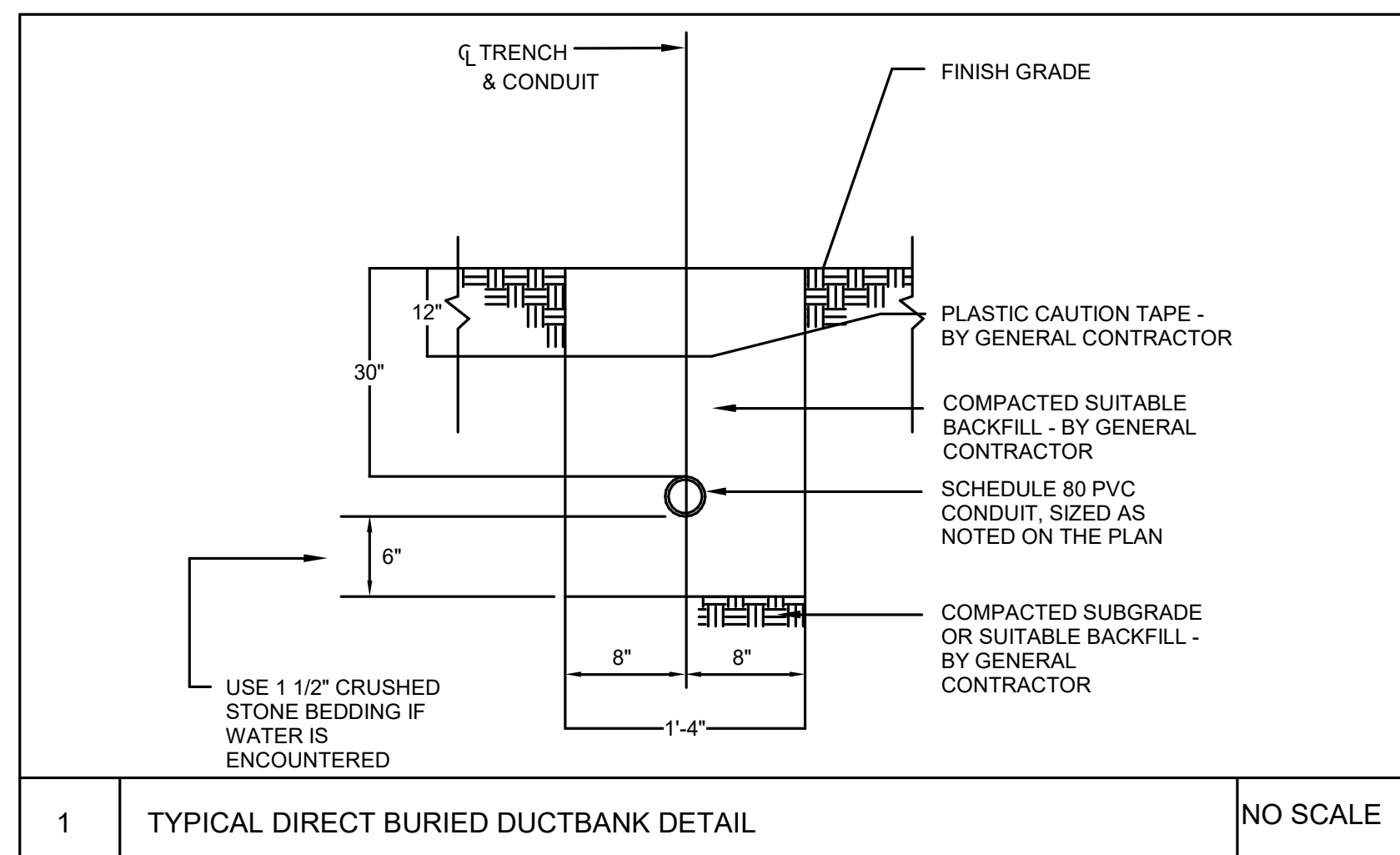
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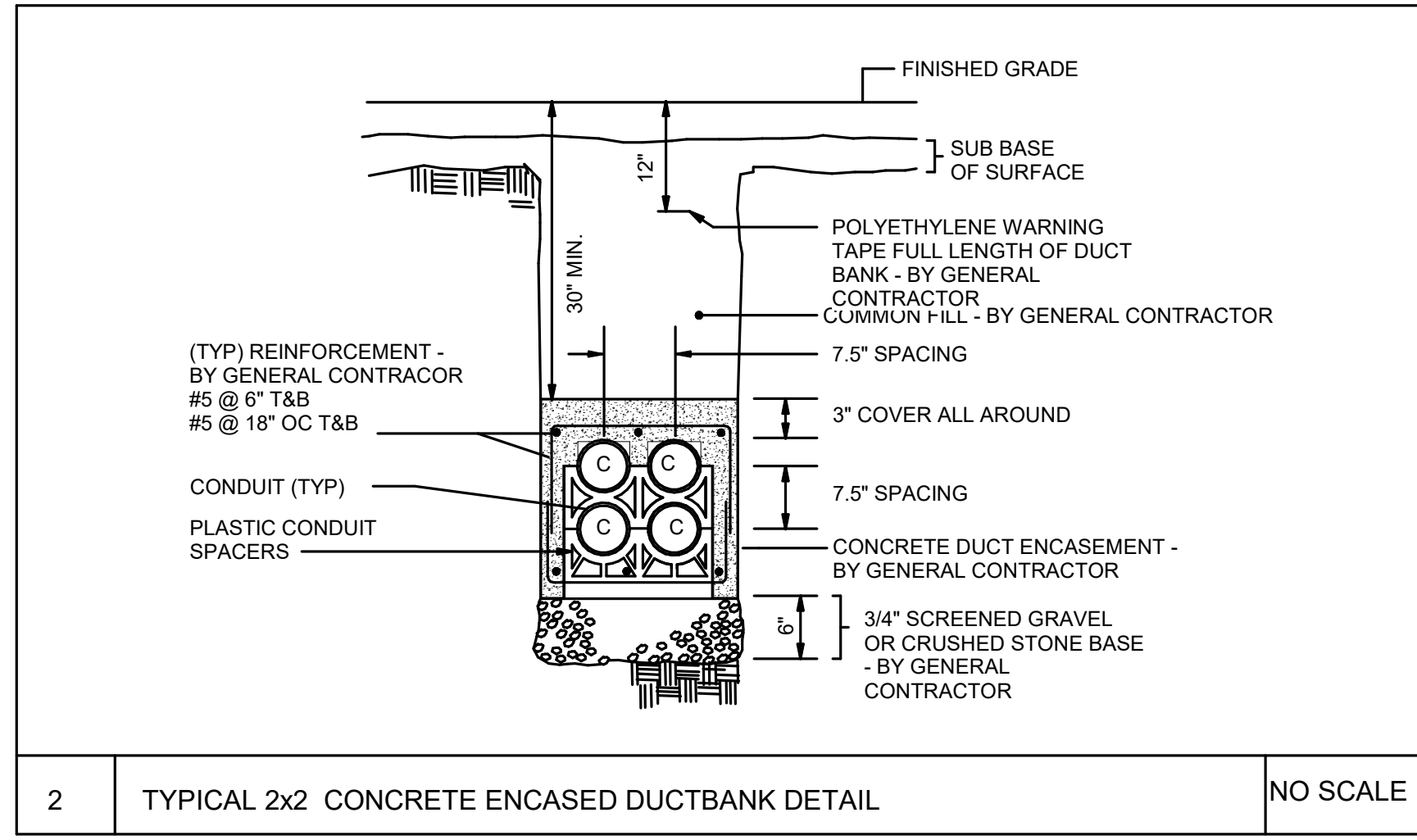
**ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES**

Sheet Number:

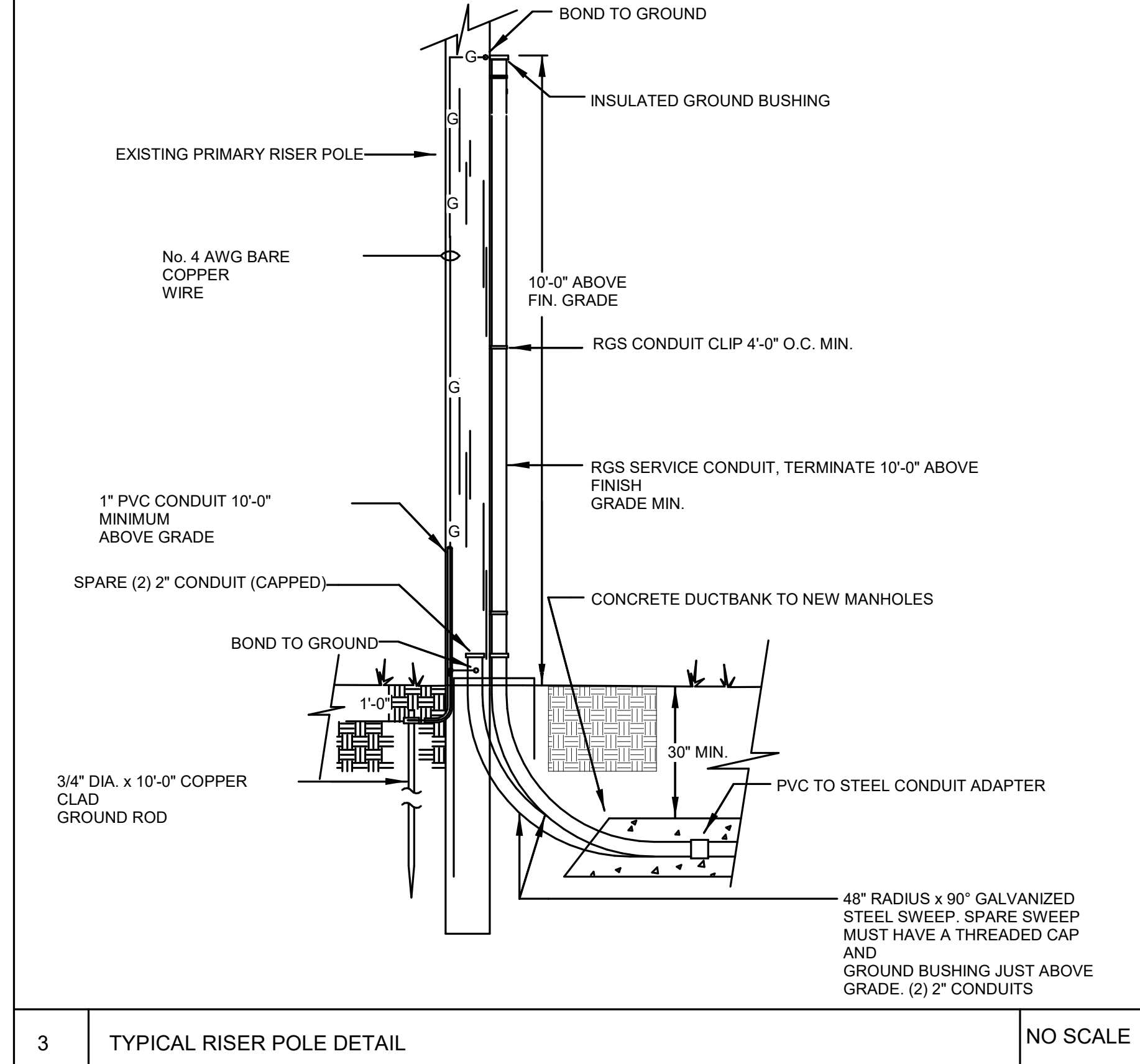
**E0.01**



1 TYPICAL DIRECT BURIED DUCTBANK DETAIL NO SCALE

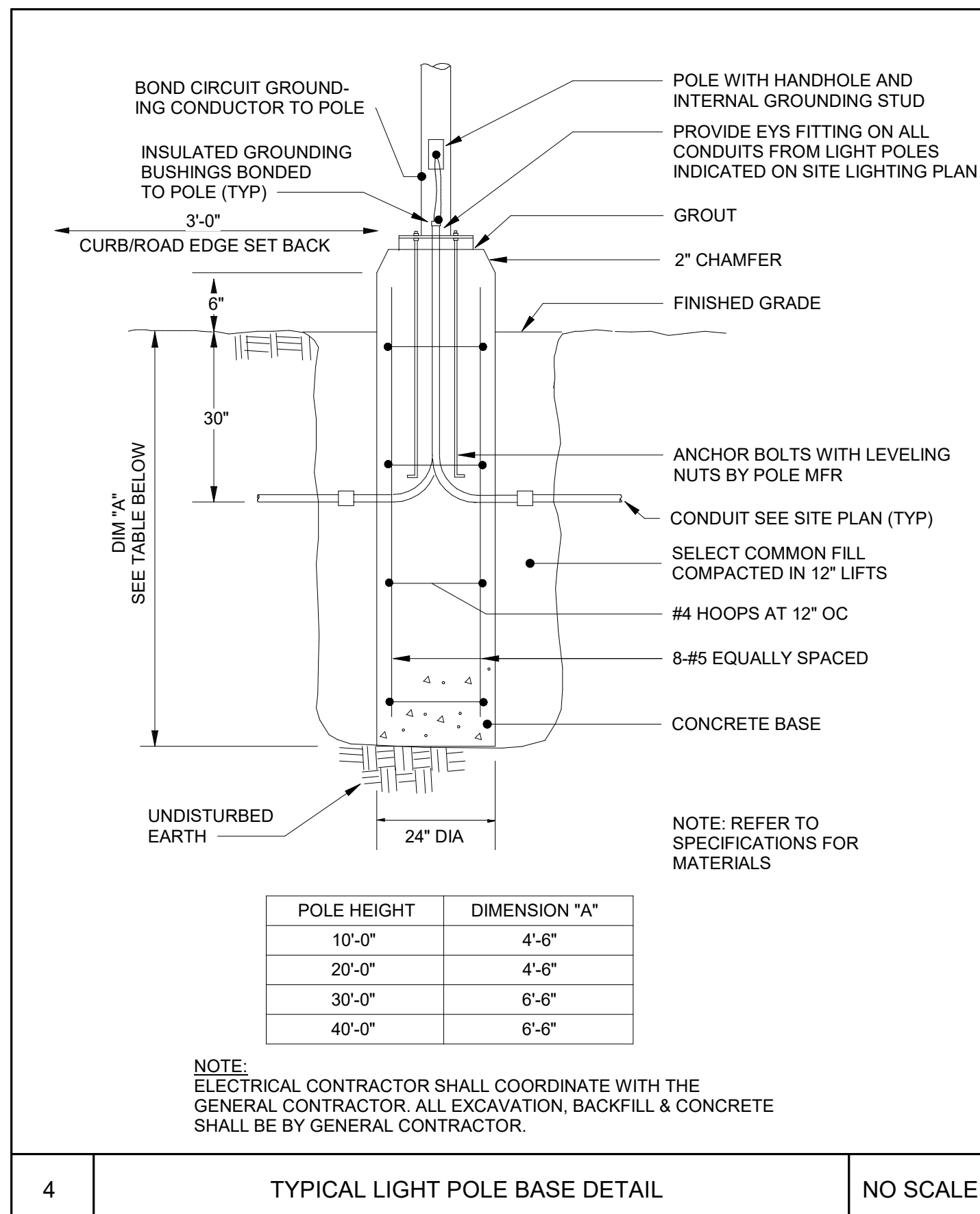


2 TYPICAL 2x2 CONCRETE ENCASED DUCTBANK DETAIL NO SCALE

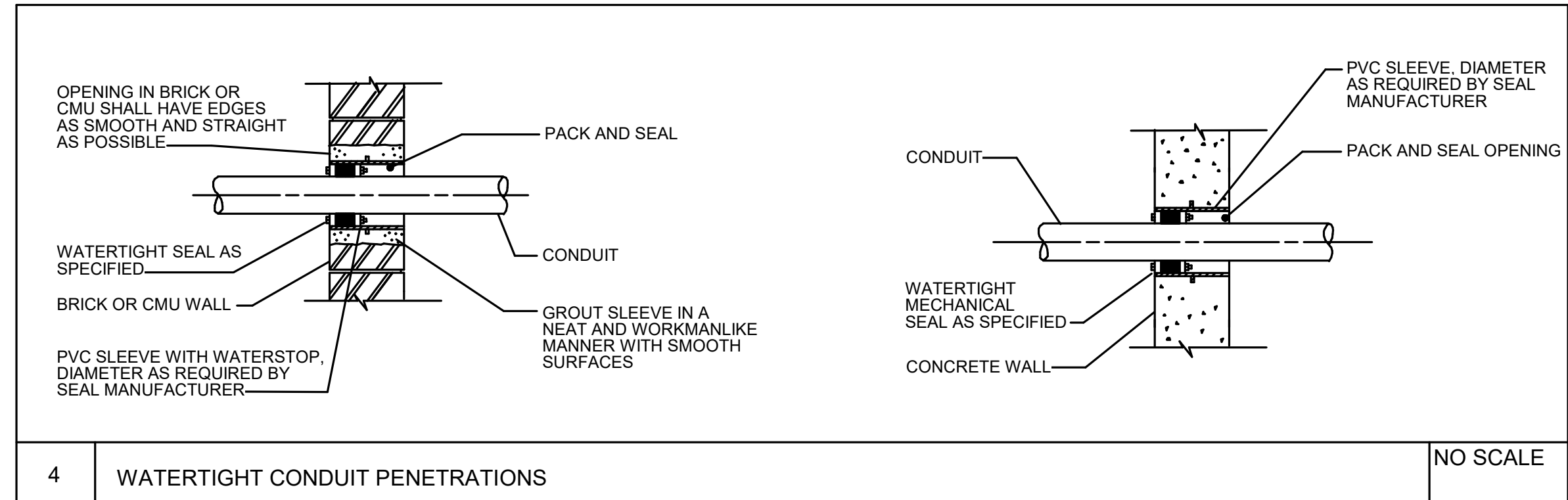


3 TYPICAL RISER POLE DETAIL NO SCALE

LIGHTING CONTROL RELAY PANEL "LCP1"											
RELAY	VOLTAGE	BRANCH CIRCUIT NUMBER	DESCRIPTION	RELAY	VOLTAGE	BRANCH CIRCUIT NUMBER	DESCRIPTION				
RELAY 1	120V	PP1-1	GROUND/STAIR LIGHTING	RELAY 2	120V	PP1-2	GROUND LIGHTING				
RELAY 3	120V	PP1-3	ROOF LEVEL LIGHTING	RELAY 4	120V	PP1-4	ROOF LEVEL LIGHTING				
RELAY 5	120V	PP1-7	PERIMETER LIGHTING	RELAY 6	120V	PP1-8	SITE LIGHTING				
RELAY 7	120V	PP1-5	STAIR EM. LIGHTING	RELAY 8	120V	PP1-6	GROUND EM. LIGHTING				
RELAY 9	120V	PP1-5	GROUND EM. LIGHTING	RELAY 10	120V	PP1-18	SIGNAGE				
RELAY 11			SPARE	RELAY 12			SPARE				

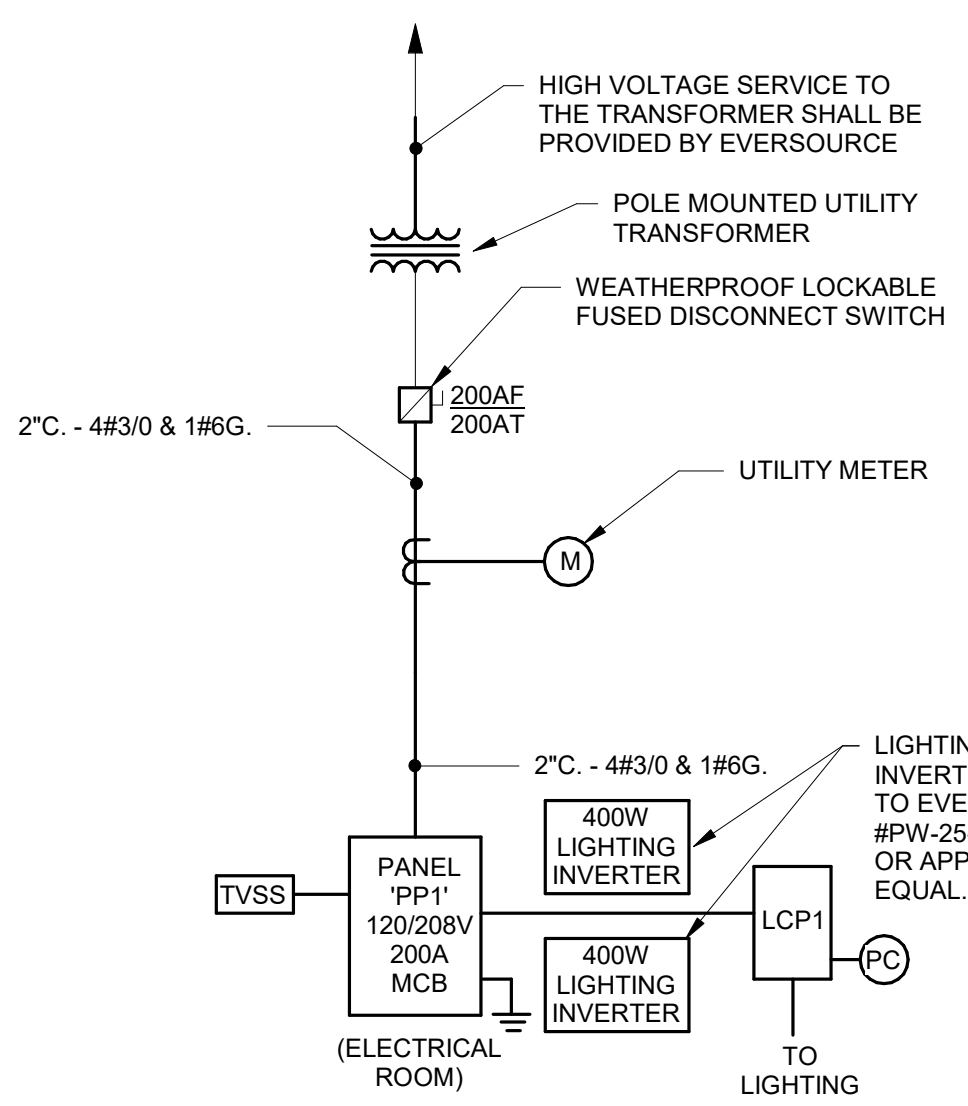


4 TYPICAL LIGHT POLE BASE DETAIL NO SCALE



4 WATERTIGHT CONDUIT PENETRATIONS NO SCALE

LIGHTING FIXTURE SCHEDULE									
TYPE	DESCRIPTION	MANUFACTURER	CATALOG NO.	LAMP	LAMP TYPE	MOUNTING	VOLTAGE	WATTAGE	NOTES
GA	PENDANT MOUNT PARKING GARAGE FIXTURE	CREE	IG-PD-SS-A-40K-UL-WH-P1L	1	LED	SURFACE	120V	33 VA	
P1	POLE MOUNTED SINGLE HEAD FIXTURE	CREE	OSQ-A-3ME-B-40K-UL-BK	1	LED	POLE	120V	86 VA	MOUNTED ON 12' POLE, PROVIDE WITH FULL CUTOFF
P2	POLE MOUNTED DUAL HEAD FIXTURE	CREE	OSQ-A-4ME-B-40K-UL-BK	1	LED	POLE	120V	86 VA	MOUNTED ON 12' POLE
P3	POLE MOUNTED SINGLE HEAD FIXTURE	CREE	OSQ-A-4ME-B-40K-UL-BK	1	LED	POLE	120V	86 VA	MOUNTED ON 12' POLE, PROVIDE WITH FULL CUTOFF
P4	POLE MOUNTED SINGLE HEAD FIXTURE	CREE	ARE-EDR-5M-R4-10-E-UL-BK-700 POLE PSSR12C	1	LED	POLE	120V	110 VA	MOUNTED ON 12' POLE, PROVIDE WITH FULL CUTOFF
S1	SURFACE MOUNTED 1X1'	CREE	C-CP-A-SQ-49L-40K-DB	1	LED	SURFACE	120V	74 VA	
S2	SURFACE MOUNTED LINEAR STRIP FIXTURE WITH INTEGRAL EMERGENCY BATTERY	CREE	LS4-40L-35K-10V-EB14	1	LED	SURFACE	120V	40 VA	
W1	FLOOD LIGHT	CREE	XSPW-A-0-2-F-C-U-T	1	LED	WALL	120V	42 VA	
X1	SINGLE FACE EXIT SIGN	ISOLITE	RWLC-R-U-WH	1	LED	WALL	120V	3 VA	



POWER RISER DIAGRAM NOT TO SCALE

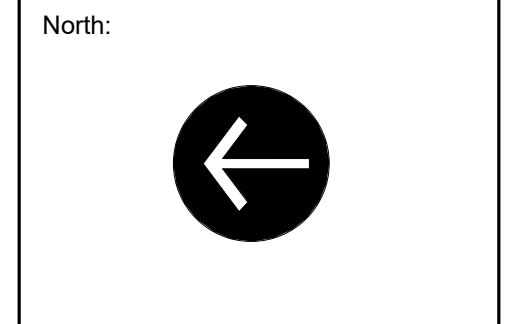
New Panel: PP1														
Location: Supply From: Mounting: Enclosure:					Volts: 120/208 Wye Phases: 3 Wires: 4					A.I.C. Rating: 22K Mains Type: 200 A MCB Rating: 200 A				
Notes: SERVICE ENTRANCE RATED														
CKT	Circuit Description	Trip	Poles	A (VA)	B (VA)	C (VA)	Poles	Trip	Circuit Description	CKT				
1	GROUND LIGHTING	20 A	1	462	429			1	20 A	GROUND LIGHTING	2			
3	ROOF LEVEL LIGHTING	20 A	1		516	1248		1	20 A	ROOF LEVEL LIGHTING	4			
5	GROUND LEVEL EM LTG	20 A	1			461	132	1	20 A	GROUND LEVEL EM LTG	6			
7	PERIMETER LIGHTING	20 A	1	378	172			1	20 A	SITE LIGHTING	8			
9	ELEC. ROOM LIGHTING	20 A	1		120	180		1	20 A	ELEC ROOM...	10			
11	ELEC ROOM...	20 A	1			360					12			
13					3120			2	40 A	FUTURE EV CHARGER	14			
15	FUTURE EV CHARGER	40 A	2		3120	3120					16			
17						3120	1000	1	20 A	Power	18			
19	FUTURE EV CHARGER	40 A	2	3120	3120			2	40 A	FUTURE EV CHARGER	20			
21					3120	3120					22			
23	EUH-1	40 A	2			2500	300	1	20 A	EF-1	24			
25				2500	0			1	20 A	Spare	26			
27	Spare	20 A	1		0	0		1	20 A	Spare	28			
29	Spare	20 A	1			0	0	1	20 A	Spare	30			
31	Spare	20 A	1	0	0			1	20 A	Spare	32			
33	Space				0	0				Space	34			
35	Space					0	0			Space	36			
37	Space			0	0					Space	38			
39	Space				0	0				Space	40			
41	Space					0	0			Space	42			
Load Classification		Connected Load	Demand Factor	Est. Demand			Panel Totals							
Lighting		3872 VA	100.00%	3872 VA										
Power		31260 VA	100.00%	31260 VA			Total Conn. Load: 35647 VA							
Receptacle		540 VA	100.00%	540 VA			Total Est. Demand: 35647 VA							
				Total Conn.: 99 A			Total Est. Demand: 99 A							

- POWER DISTRIBUTION DIAGRAM NOTES:
- REFER TO DRAWING E0.01 FOR LEGEND, SYMBOLS AND GENERAL NOTES THAT MAY PERTAIN TO THIS DRAWING.
  - THIS DRAWING IS INTENDED TO ILLUSTRATE MAJOR EQUIPMENT AND REQUIRED INTERCONNECTIONS. REFER TO THE FLOOR PLANS FOR EXACT LOCATIONS AND THE SPECIFICATIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS.
  - THE SERVICE AND ALL SEPARATELY DERIVED SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 250 OF THE NEC. BOND ALL ELECTRICALLY CONDUCTIVE MATERIALS SUCH AS METAL PIPING SYSTEMS AND STRUCTURAL STEEL TO THE GROUNDING SYSTEM. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
  - PANELBOARDS AND ELECTRICAL EQUIPMENT SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE OF THE EQUIPMENT.

Project:  
**MMMM**  
 MONTACHUSETT REGIONAL TRANSIT AUTHORITY  
 AYER COMMUTER RAIL PARKING FACILITY  
 AYER, MA

Weston & Sampson  
 100 Foxborough Boulevard Suite 250  
 Foxborough, MA 02035  
 (508) 698-3034 (800) 544-5454  
 www.westonandsampson.com

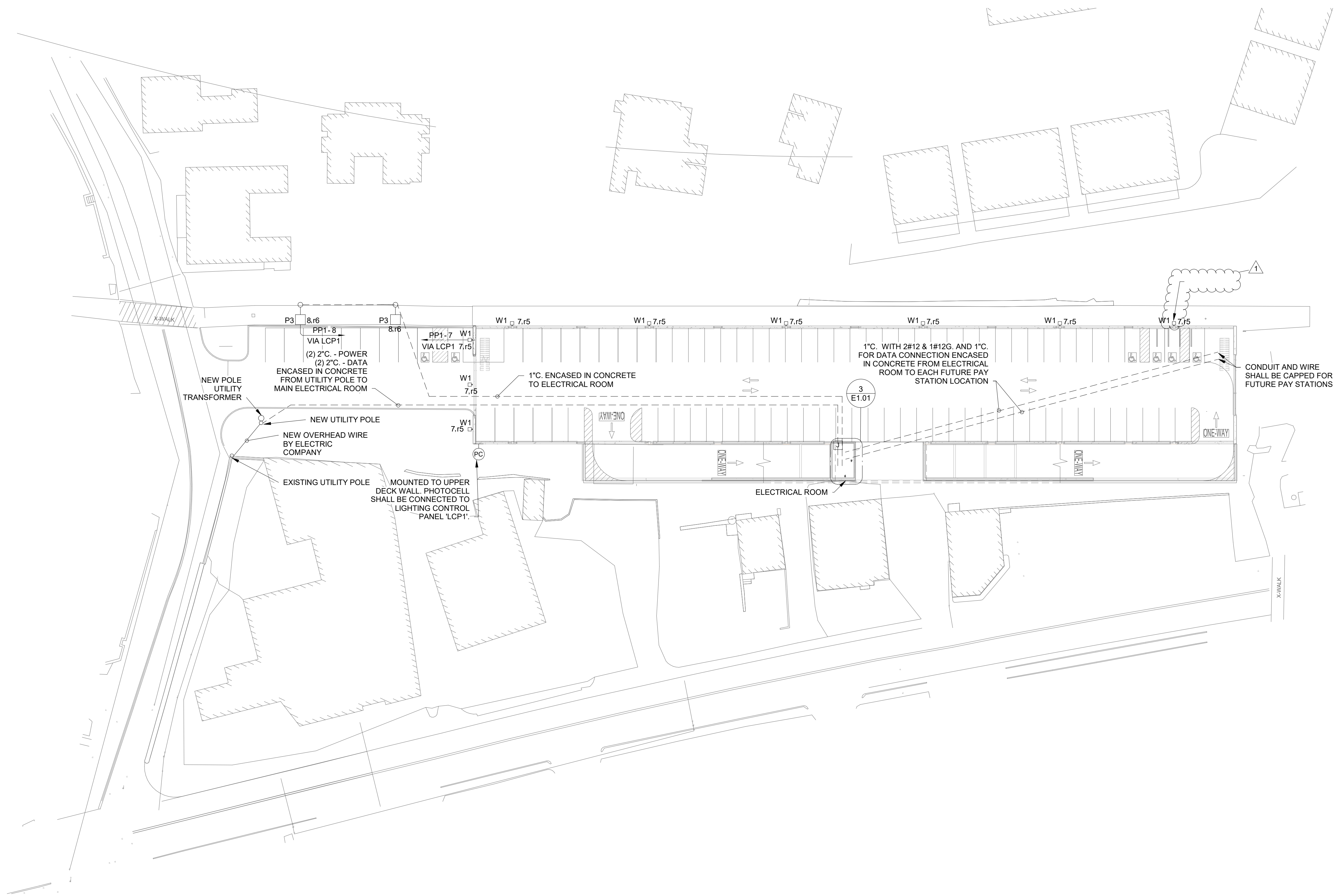
Consultants:  
**TimHaas**  
 550 Townshp Line Rd. Suite 100,  
 Foxborough, MA 02035  
 T: (508) 342-2200 F: (508) 342-0222  
 http://www.timhaas.com



Revisions:  
 Rev Date Description  
 Seal:  
 ROBERT F. MOLEER  
 ELECTRICAL  
 No. 48017  
 REGISTERED PROFESSIONAL ENGINEER

CONSTRUCTION DOCUMENTS  
 Date: 12/05/18  
 Scale: AS NOTED  
 Drawn By: ICA  
 Reviewed By: RFM  
 Checked By: RFM  
 Approved By: RFM

Drawing Title:  
**ELECTRICAL SCHEDULES AND DETAILS**  
 Sheet Number:  
**E0.02**



1 ELECTRICAL SITE PLAN - GARAGE  
1" = 30'-0"

Project:



AYER COMMUTER RAIL  
PARKING FACILITY  
AYER, MA



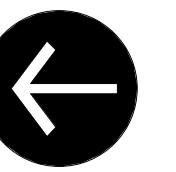
100 Foxborough Boulevard Suite 250  
Foxborough, MA 02035  
(508) 698-3034 (800) 544-5454  
www.westonandsampson.com

Consultants:



550 Townshill Lane, Rd. Suite 100,  
Blue Hill, MA 01922  
T: (413) 442-2200 F: (413) 442-0222  
http://www.timhaahs.com

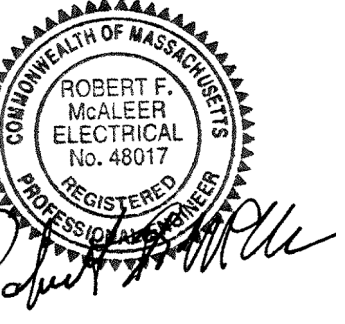
North:



Revisions:

Rev	Date	Description
1	01.03.2019	Addendum 3

Seal:



CONSTRUCTION  
DOCUMENTS

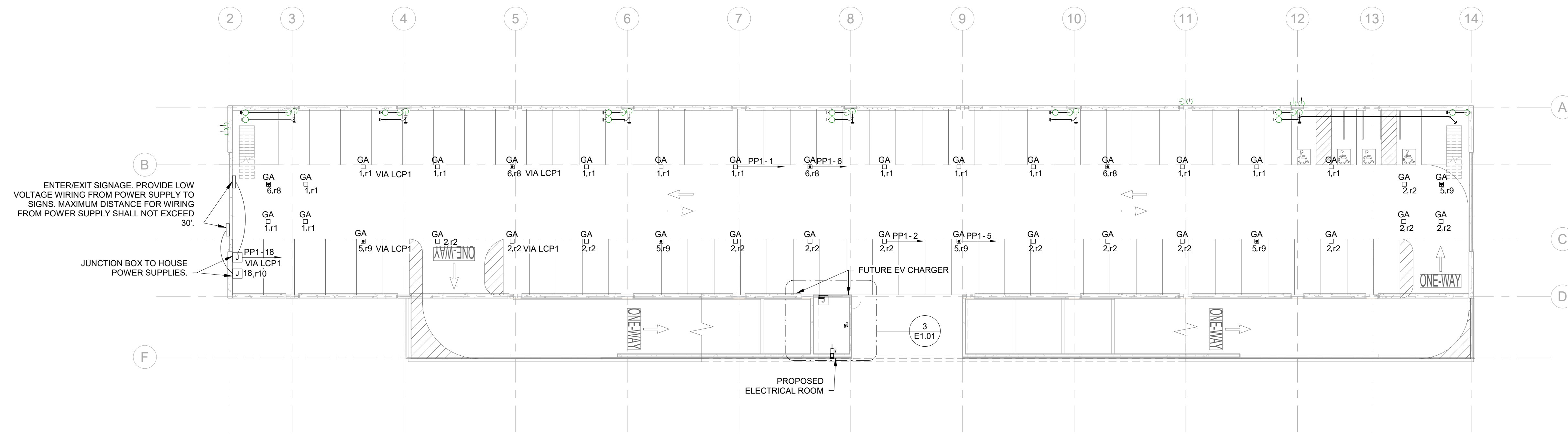
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Scale: AS NOTED  
Drawn By: ICA  
Reviewed By: RFM  
Checked By: RFM  
Approved By: RFM

Drawing Title:

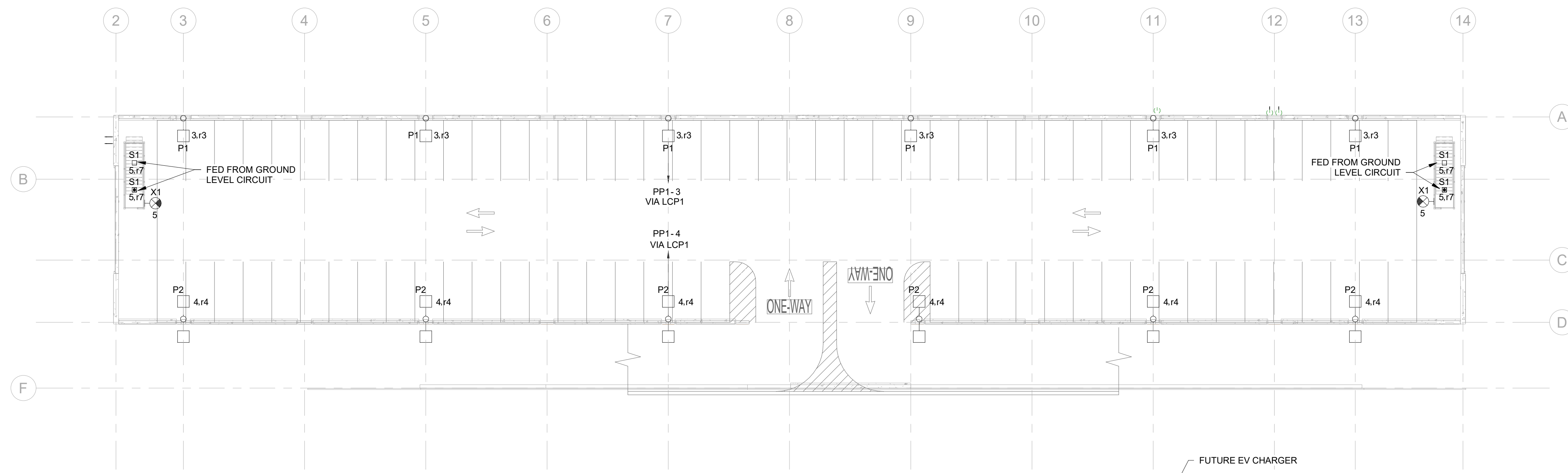
ELECTRICAL SITE  
PLAN - GARAGE

Sheet Number:

E1.00

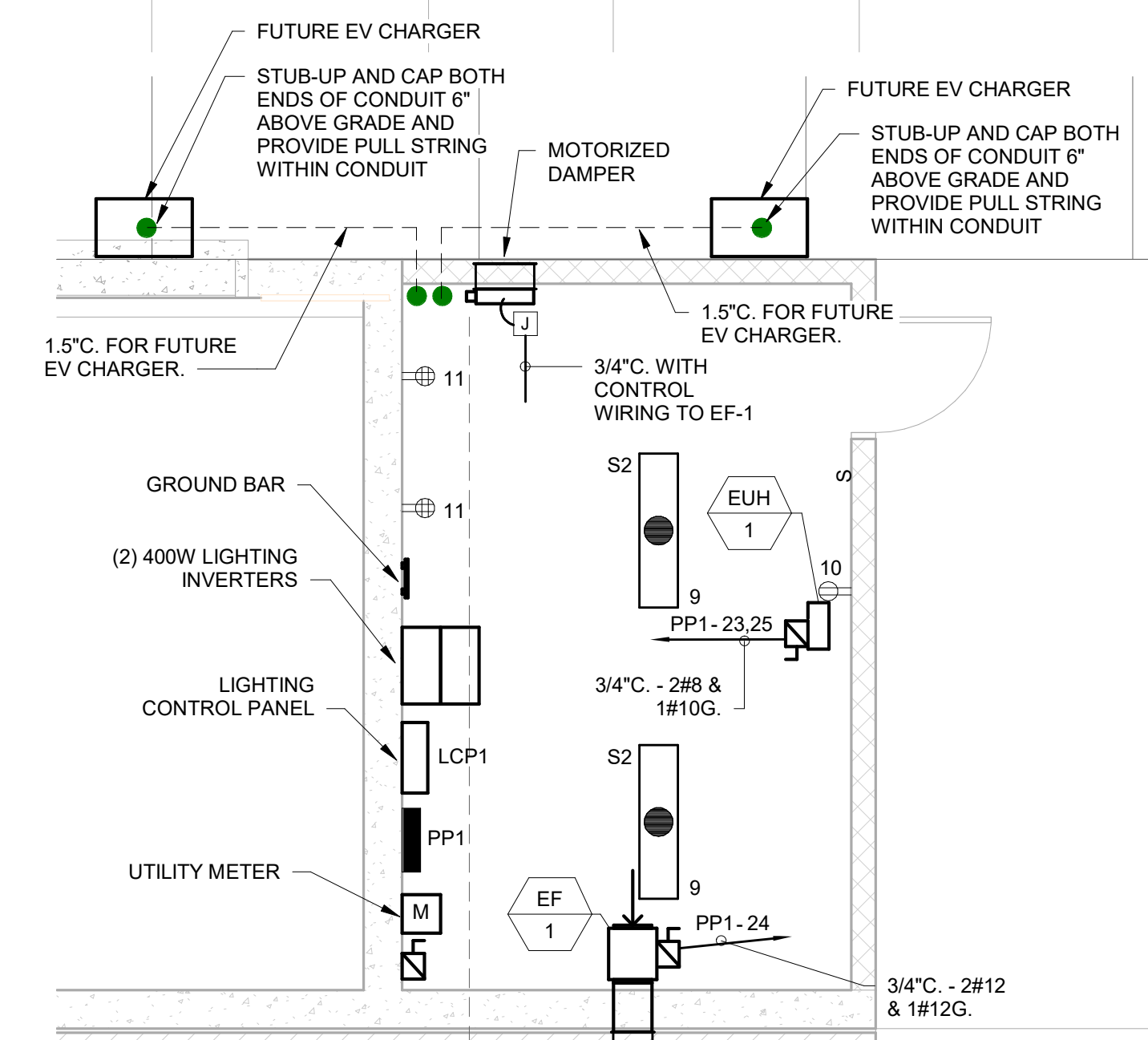


1 ELECTRICAL GROUND LEVEL PLAN  
1" = 20'-0"

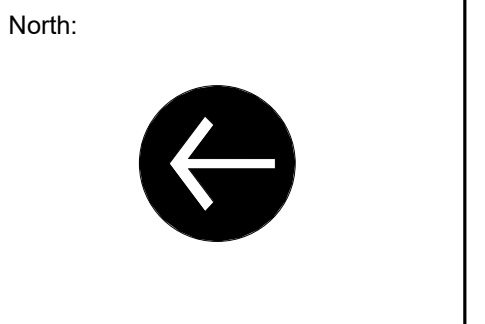


2 ELECTRICAL UPPER DECK PLAN  
1" = 20'-0"

- NOTES:
- REFER TO DRAWING E0.01 FOR LEGEND, GENERAL ABBREVIATIONS AND GENERAL NOTES.
  - FIXTURE SHALL BE MOUNTED BY PENDANT BETWEEN DOUBLE TEES.

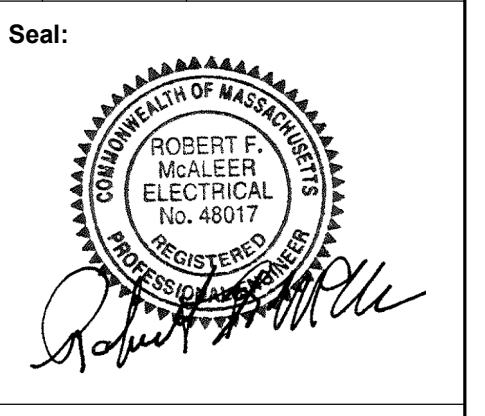


3 ENLARGED ROOM - POWER  
1/4" = 1'-0"



Revisions:

Rev	Date	Description



CONSTRUCTION DOCUMENTS

Date: 12/05/18  
 Scale: AS NOTED  
 Drawn By: ICA  
 Reviewed By: RFM  
 Checked By: RFM  
 Approved By: RFM

Drawing Title:  
 ELECTRICAL  
 POWER AND  
 LIGHTING PLANS  
 Sheet Number:  
**E1.01**  
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