

CITY OF CHATTANOOGA, TENNESSEE

DUPONT PUMP STATION AND BASIN IMPROVEMENTS-PHASE 2

CONTRACT A

CONTRACT NO. W-12-026-202

CONSENT DECREE PROGRAM

MAYOR

ANDY BERKE

CITY COUNCIL

- DISTRICT 1 - CHIP HENDERSON, VICE-CHAIR
- DISTRICT 2 - JERRY MITCHELL
- DISTRICT 3 - KEN SMITH
- DISTRICT 4 - DARRIN LEDFORD
- DISTRICT 5 - RUSSELL GILBERT, SR.
- DISTRICT 6 - DR. CAROL BERZ
- DISTRICT 7 - ERSKINE OGLESBY, JR., CHAIR
- DISTRICT 8 - ANTHONY BYRD
- DISTRICT 9 - DEMETRUS COONROD

DEPARTMENT OF PUBLIC WORKS

JUSTIN C. HOLLAND, ADMINISTRATOR



PREPARED BY:



651 EAST 4TH STREET SUITE 100
 CHATTANOOGA, TN 37403
 TEL: (423) 771-4495

NOVEMBER 2019

BID SET

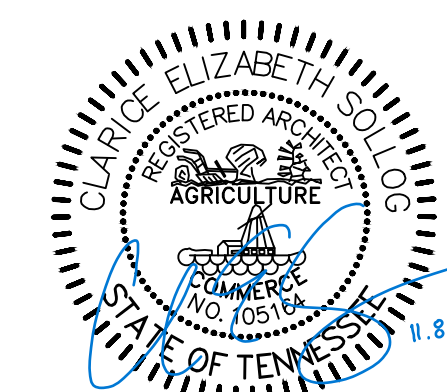
GENERAL / CIVIL
MECHANICAL



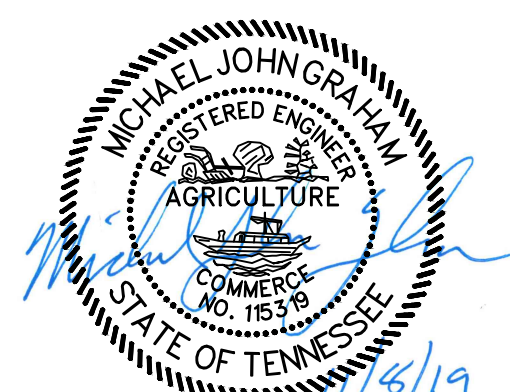
ELECTRICAL



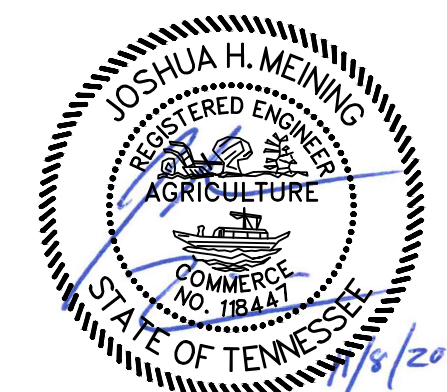
ARCHITECTURAL



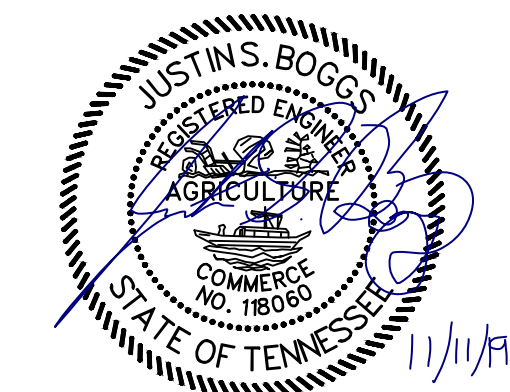
INSTRUMENTATION



HVAC



STRUCTURAL



PROJECT INFORMATION

1. PROJECT OWNER: CITY OF CHATTANOOGA, DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION
 SUITE 2100, DEVELOPMENT RESOURCE CENTER, 1250 MARKET STREET, CHATTANOOGA, TN 37402
 PHONE: (423) 643-6311
2. SITE ADDRESS: DIXIE DRIVE, CHATTANOOGA, TN 37415
3. SITE ZONING: R-1 & M-1
4. TOTAL SITE AREA: 60.6 ACRES
5. DISTURBED AREA: 4.7 ACRES
6. RECEIVING STREAM: TENNESSEE RIVER

APPROVED FOR RELEASE

 WILLIAM C. PAYNE, P.E., CITY ENGINEER DATE

XREFs: [CDMS_2436, CD Program Border] Images: []
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SHEET	TITLE
GENERAL	
G-0	COVER SHEET
G-1	INDEX OF SHEETS
G-2	GENERAL SYMBOLS, NOTES AND ABBREVIATIONS

SHEET	TITLE
CIVIL	
C-1	EXISTING SITE CONDITIONS PLAN
C-2	SITE DEMOLITION PLAN
C-3	SITE LAYOUT AND GRADING PLAN WEST
C-4	PUMP STATION AND SITE LAYOUT AND GRADING PLAN EAST
C-5	YARD PIPING PLAN WEST
C-6	YARD PIPING PLAN EAST
C-7	YARD PIPING PLAN - NORTH I
C-8	YARD PIPING PLAN - NORTH II
C-9	YARD PIPING PROFILES 42" SANITARY SEWER
C-10	YARD PIPING PROFILES 24" SANITARY SEWER I
C-11	YARD PIPING PROFILES 24" SANITARY SEWER II
C-12	ODOR CONTROL DUCT PLAN
C-13	INITIAL EROSION AND SEDIMENT CONTROL PLAN
C-14	FINAL EROSION AND SEDIMENT CONTROL PLAN
C-15	INITIAL EROSION AND SEDIMENT CONTROL PLAN
C-16	FINAL EROSION AND SEDIMENT CONTROL PLAN
CD-1	CIVIL DETAILS I
CD-2	CIVIL DETAILS II
CD-3	CIVIL DETAILS III
CD-4	CIVIL DETAILS IV
CD-5	CIVIL DETAILS V
CD-6	CIVIL DETAILS VI
CD-7	CIVIL DETAILS VII

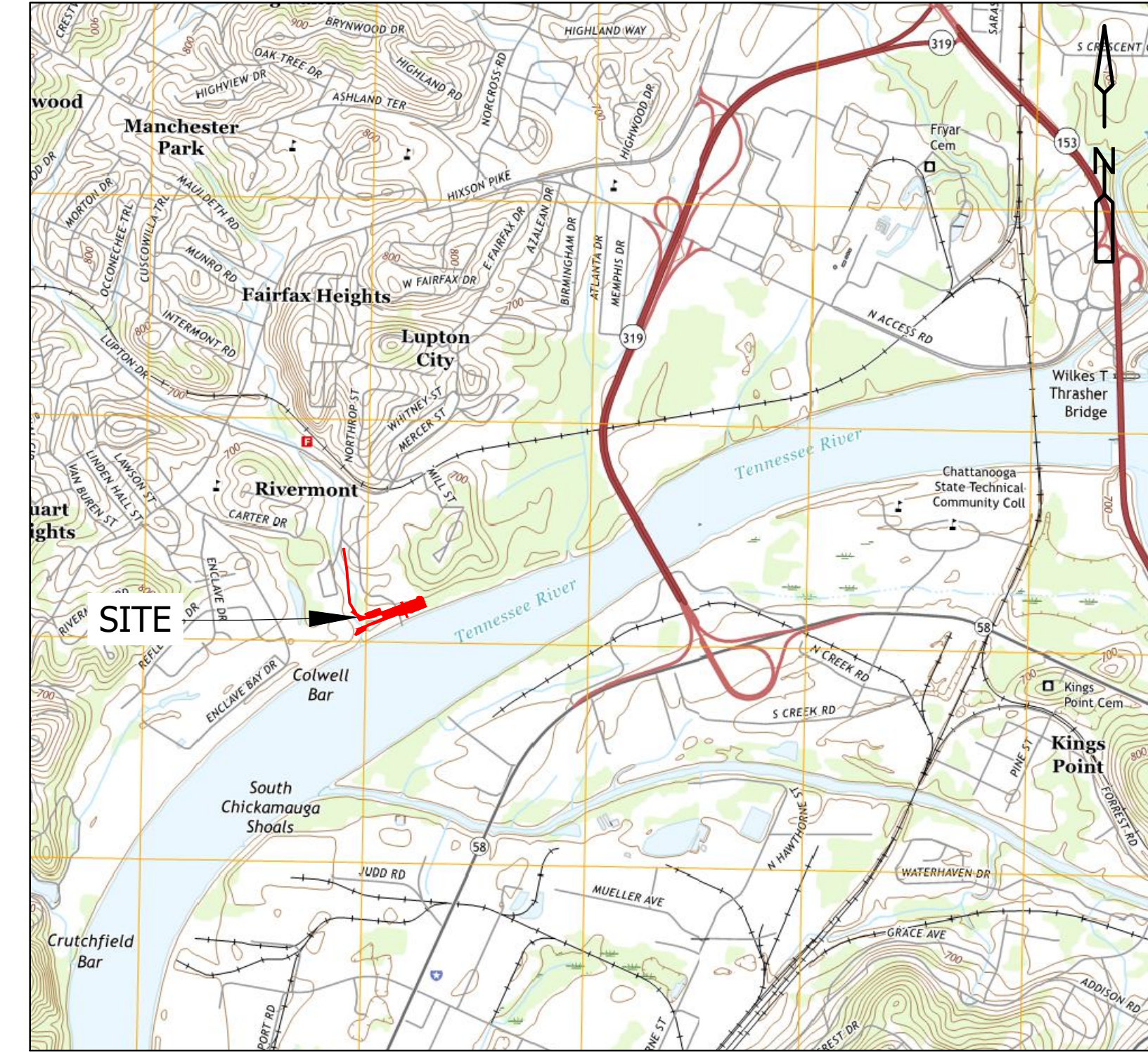
SHEET	TITLE
ARCHITECTURAL	
A-1	GENERAL NOTES, SYMBOLS AND ABBREVIATIONS
A-2	ELECTRICAL BUILDING FLOOR PLAN AND CODE KEY DETERMINATIONS
A-3	ELECTRICAL BUILDING ROOF PLAN
A-4	ELECTRICAL BUILDING EXTERIOR ELEVATIONS
A-5	ELECTRICAL BUILDING BUILDING SECTIONS
A-6	ELECTRICAL BUILDING WALL SECTIONS AND DETAILS
A-7	ELECTRICAL BUILDING TOILET ROOM ENLARGED PLAN AND INTERIOR ELEVATIONS
AD-1	ELECTRICAL BUILDING SCHEDULES AND TYPES AND DETAILS

SHEET	TITLE
STRUCTURAL	
S-1	STANDARD STRUCTURAL NOTES AND ABBREVIATIONS
S-2	DIVERSION STRUCTURE FOUNDATION AND TOP PLANS
S-3	DIVERSION STRUCTURE SECTIONS
S-4	WET-WEATHER PUMP STATION FOUNDATION AND TOP PLANS
S-5	WET-WEATHER PUMP STATION SECTIONS
S-6	ELECTRICAL BUILDING PLANS
S-7	ELECTRICAL BUILDING SECTIONS AND DETAILS
S-8	ELECTRICAL BUILDING ELEVATIONS
S-9	MISCELLANEOUS PADS PLANS AND SECTIONS
S-10	STREAM CROSSING PIER FOUNDATION PLAN
SD-1	STANDARD STRUCTURAL DETAILS
SD-2	STANDARD STRUCTURAL DETAILS
SD-3	STANDARD STRUCTURAL DETAILS
SD-4	STANDARD STRUCTURAL DETAILS
SD-5	SPECIAL INSPECTIONS TABLES AND NOTES
SD-6	SPECIAL INSPECTIONS TABLES AND NOTES

SHEET	TITLE
MECHANICAL	
M-1	MECHANICAL ABBREVIATIONS, SYMBOLS, AND GENERAL NOTES
M-2	HYDRAULIC PROFILE I
M-3	HYDRAULIC PROFILE II
M-4	DIVERSION STRUCTURE PLAN
M-5	DIVERSION STRUCTURE SECTION
M-6	WET-WEATHER PUMP STATION PLAN
M-7	WET-WEATHER PUMP STATION SECTIONS
M-8	PUMP STATION ODOR CONTROL PLAN AND SECTION
MD-1	MISCELLANEOUS DETAILS
MD-2	MISCELLANEOUS DETAILS
MD-3	PIPE SUPPORT DETAILS
MD-4	ODOR CONTROL DETAILS
MD-5	SLIDE GATE DETAILS

SHEET	TITLE
HVAC	
H-1	ELECTRICAL BUILDING HVAC SYMBOLS AND ABBREVIATIONS
H-2	ELECTRICAL BUILDING HVAC PLAN
HD-1	ELECTRICAL BUILDING HVAC SCHEDULES AND DETAILS

SHEET	TITLE
PLUMBING	
P-1	ELECTRICAL BUILDING PLUMBING SYMBOLS AND ABBREVIATIONS
P-2	ELECTRICAL BUILDING PLUMBING PLAN
PD-1	ELECTRICAL BUILDING PLUMBING DETAILS

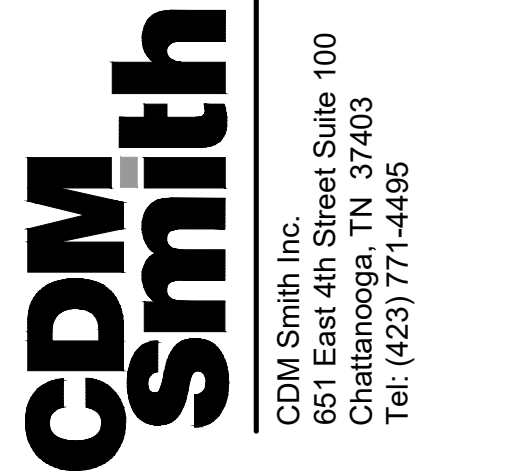


VICINITY MAP

IMAGE TAKEN FROM USGS QUADRANGLE "CHATTANOOGA" AND "EAST CHATTANOOGA"

SHEET	TITLE
ELECTRICAL	
E-1	ELECTRICAL LEGEND I
E-2	ELECTRICAL LEGEND II
E-3	HAZARDOUS AREA CLASSIFICATION PLAN
E-4	ELECTRICAL SITE PLAN
E-5	480V SWITCHGEAR SWGR-1 ONE LINE POWER DIAGRAM
E-6	MCC-A AND MCC-B ONE LINE POWER DIAGRAM
E-7	PANELBOARD AND LIGHTING FIXTURE SCHEDULES AND POLE MOUNTED DETAIL
E-8	INSTRUMENTATION AND CONTROL RISER DIAGRAM
E-9	ELECTRICAL SCHEMATICS
E-10	ELECTRICAL BUILDING POWER PLAN
E-11	ELECTRICAL BUILDING LIGHTING PLAN
E-12	DIVERSION STRUCTURE STANDBY GENERATOR AND ODOR CONTROL ELECTRICAL PLANS
E-13	WET-WEATHER PUMP STATION ELECTRICAL PLAN
ED-1	ELECTRICAL DETAILS I
ED-2	ELECTRICAL DETAILS II
ED-3	ELECTRICAL DETAILS III

SHEET	TITLE
INSTRUMENTATION	
I-1	INSTRUMENTATION LEGEND (1 OF 2)
I-2	INSTRUMENTATION LEGEND (2 OF 2)
I-3	CONTROL BLOCK DIAGRAM
I-4	DIVERSION STRUCTURE P&ID
I-5	WET WEATHER PUMP STATION P&ID
I-6	ELECTRICAL DETAILS
I-7	INSTRUMENTATION DETAILS



DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM



REV	DATE	REVISION DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.

PROJECT NO: 129699-109746

DATE: NOVEMBER 2019

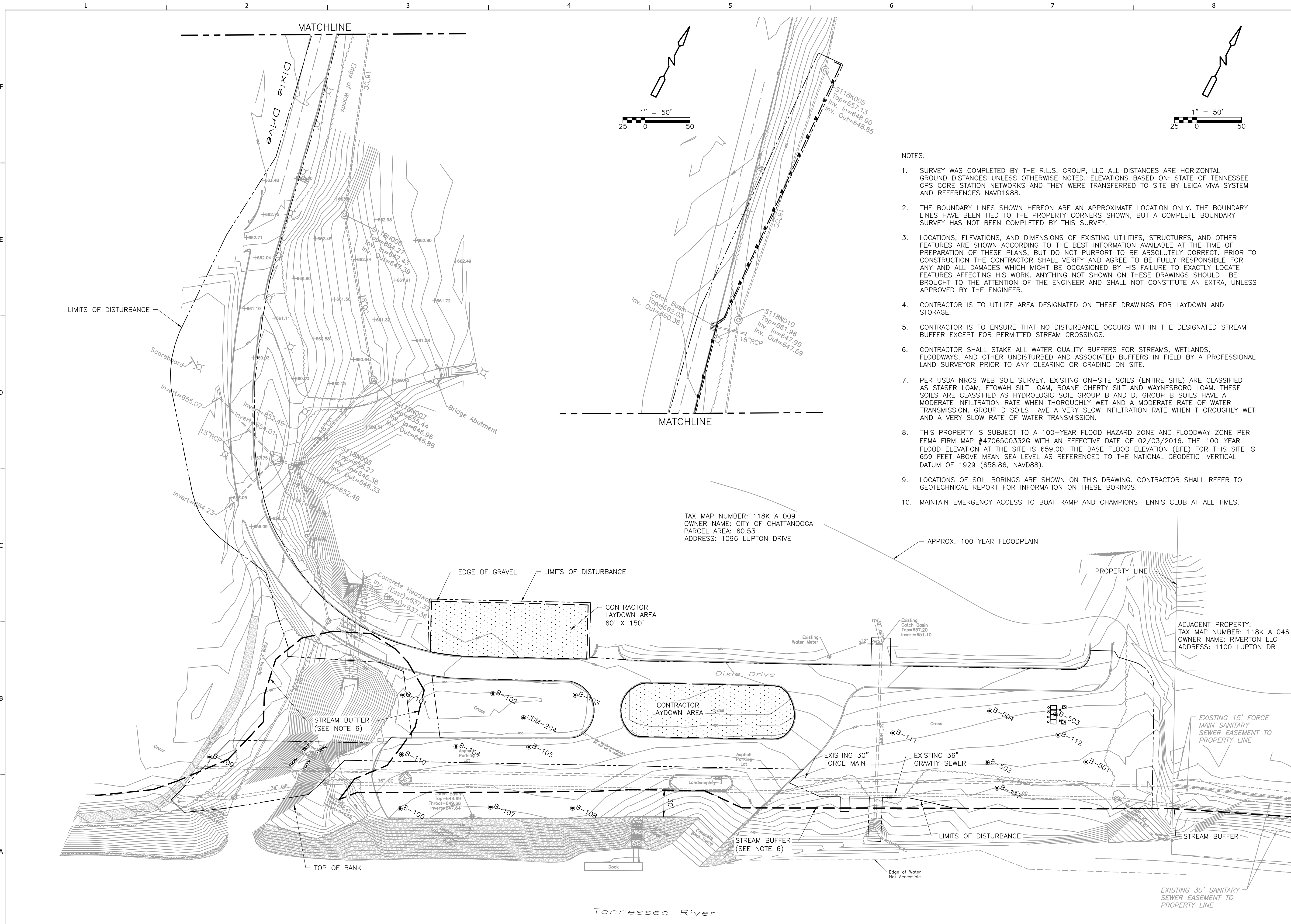
DISC. LEAD:	DESIGNER:	CHECKER:
DU	VF	CF/MT

SHEET TITLE: GENERAL

INDEX OF SHEETS

SHEET: G-1

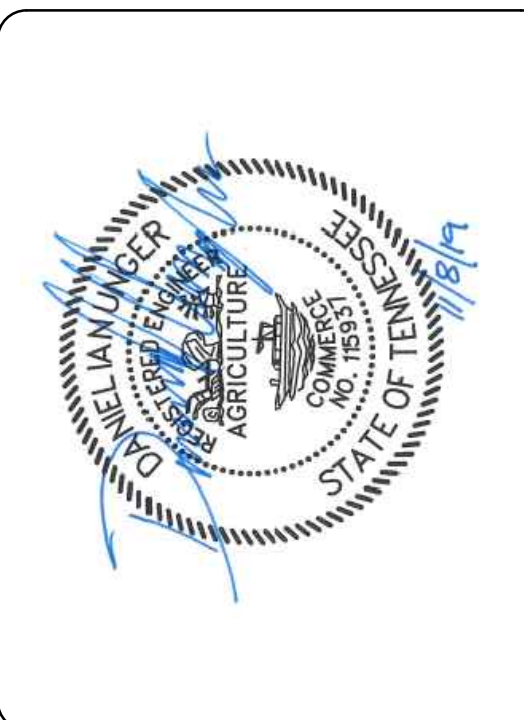
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TAX MAP NUMBER: 118K A 009
 OWNER NAME: CITY OF CHATTANOOGA
 PARCEL AREA: 60.53
 ADDRESS: 1096 LUPTON DRIVE

NOTES:

1. SURVEY WAS COMPLETED BY THE R.L.S. GROUP, LLC ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED. ELEVATIONS BASED ON: STATE OF TENNESSEE GPS CORE STATION NETWORKS AND THEY WERE TRANSFERRED TO SITE BY LEICA VIVA SYSTEM AND REFERENCES NAVD1988.
2. THE BOUNDARY LINES SHOWN HEREON ARE AN APPROXIMATE LOCATION ONLY. THE BOUNDARY LINES HAVE BEEN TIED TO THE PROPERTY CORNERS SHOWN, BUT A COMPLETE BOUNDARY SURVEY HAS NOT BEEN COMPLETED BY THIS SURVEY.
3. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY AND AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE FEATURES AFFECTING HIS WORK. ANYTHING NOT SHOWN ON THESE DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND SHALL NOT CONSTITUTE AN EXTRA, UNLESS APPROVED BY THE ENGINEER.
4. CONTRACTOR IS TO UTILIZE AREA DESIGNATED ON THESE DRAWINGS FOR LAYDOWN AND STORAGE.
5. CONTRACTOR IS TO ENSURE THAT NO DISTURBANCE OCCURS WITHIN THE DESIGNATED STREAM BUFFER EXCEPT FOR PERMITTED STREAM CROSSINGS.
6. CONTRACTOR SHALL STAKE ALL WATER QUALITY BUFFERS FOR STREAMS, WETLANDS, FLOODWAYS, AND OTHER UNDISTURBED AND ASSOCIATED BUFFERS IN FIELD BY A PROFESSIONAL LAND SURVEYOR PRIOR TO ANY CLEARING OR GRADING ON SITE.
7. PER USDA NRCS WEB SOIL SURVEY, EXISTING ON-SITE SOILS (ENTIRE SITE) ARE CLASSIFIED AS STASER LOAM, ETOWAH SILT LOAM, ROANE CHERTY SILT AND WAYNESBORO LOAM. THESE SOILS ARE CLASSIFIED AS HYDROLOGIC SOIL GROUP B AND D. GROUP B SOILS HAVE A MODERATE INFILTRATION RATE WHEN THOROUGHLY WET AND A MODERATE RATE OF WATER TRANSMISSION. GROUP D SOILS HAVE A VERY SLOW INFILTRATION RATE WHEN THOROUGHLY WET AND A VERY SLOW RATE OF WATER TRANSMISSION.
8. THIS PROPERTY IS SUBJECT TO A 100-YEAR FLOOD HAZARD ZONE AND FLOODWAY ZONE PER FEMA FIRM MAP #47065C0332G WITH AN EFFECTIVE DATE OF 02/03/2016. THE 100-YEAR FLOOD ELEVATION AT THE SITE IS 659.00. THE BASE FLOOD ELEVATION (BFE) FOR THIS SITE IS 659 FEET ABOVE MEAN SEA LEVEL AS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (658.86, NAVD88).
9. LOCATIONS OF SOIL BORINGS ARE SHOWN ON THIS DRAWING. CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT FOR INFORMATION ON THESE BORINGS.
10. MAINTAIN EMERGENCY ACCESS TO BOAT RAMP AND CHAMPIONS TENNIS CLUB AT ALL TIMES.



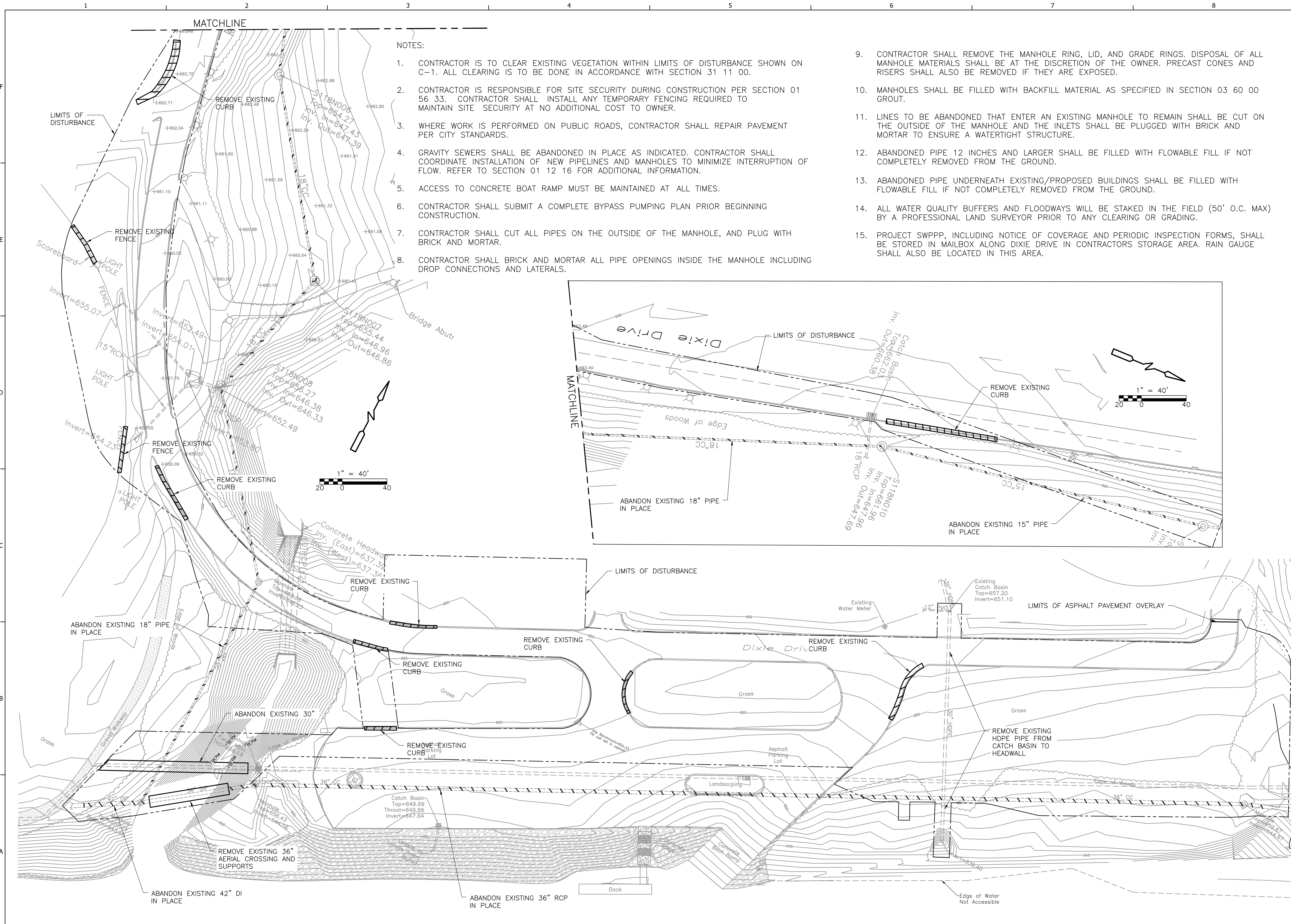
DUPONT PUMP STATION AND
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 CONSENT DECREE PROGRAM

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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: DU DESIGNER: VF CHECKER: CF/MT

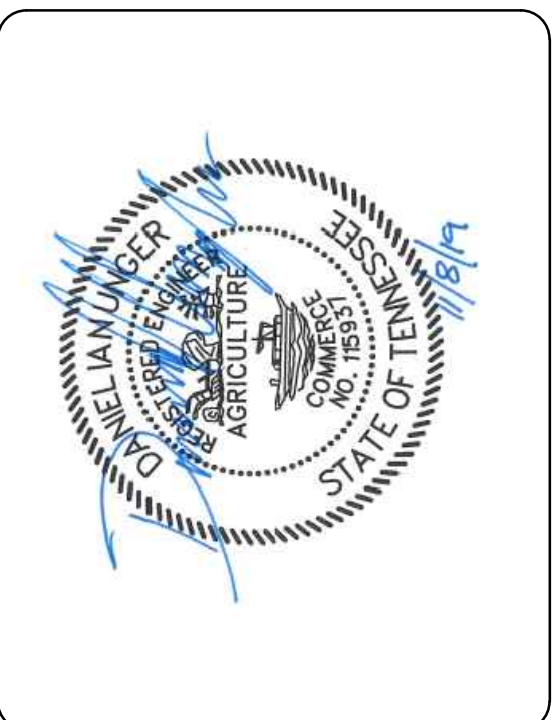
SHEET TITLE: CIVIL
 EXISTING SITE CONDITIONS PLAN
 SHEET: C-1

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NOTES:

- CONTRACTOR IS TO CLEAR EXISTING VEGETATION WITHIN LIMITS OF DISTURBANCE SHOWN ON C-1. ALL CLEARING IS TO BE DONE IN ACCORDANCE WITH SECTION 31 11 00.
- CONTRACTOR IS RESPONSIBLE FOR SITE SECURITY DURING CONSTRUCTION PER SECTION 01 56 33. CONTRACTOR SHALL INSTALL ANY TEMPORARY FENCING REQUIRED TO MAINTAIN SITE SECURITY AT NO ADDITIONAL COST TO OWNER.
- WHERE WORK IS PERFORMED ON PUBLIC ROADS, CONTRACTOR SHALL REPAIR PAVEMENT PER CITY STANDARDS.
- GRAVITY SEWERS SHALL BE ABANDONED IN PLACE AS INDICATED. CONTRACTOR SHALL COORDINATE INSTALLATION OF NEW PIPELINES AND MANHOLES TO MINIMIZE INTERRUPTION OF FLOW. REFER TO SECTION 01 12 16 FOR ADDITIONAL INFORMATION.
- ACCESS TO CONCRETE BOAT RAMP MUST BE MAINTAINED AT ALL TIMES.
- CONTRACTOR SHALL SUBMIT A COMPLETE BYPASS PUMPING PLAN PRIOR BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL CUT ALL PIPES ON THE OUTSIDE OF THE MANHOLE, AND PLUG WITH BRICK AND MORTAR.
- CONTRACTOR SHALL BRICK AND MORTAR ALL PIPE OPENINGS INSIDE THE MANHOLE INCLUDING DROP CONNECTIONS AND LATERALS.
- CONTRACTOR SHALL REMOVE THE MANHOLE RING, LID, AND GRADE RINGS. DISPOSAL OF ALL MANHOLE MATERIALS SHALL BE AT THE DISCRETION OF THE OWNER. PRECAST CONES AND RISERS SHALL ALSO BE REMOVED IF THEY ARE EXPOSED.
- MANHOLES SHALL BE FILLED WITH BACKFILL MATERIAL AS SPECIFIED IN SECTION 03 60 00 GROUT.
- LINES TO BE ABANDONED THAT ENTER AN EXISTING MANHOLE TO REMAIN SHALL BE CUT ON THE OUTSIDE OF THE MANHOLE AND THE INLETS SHALL BE PLUGGED WITH BRICK AND MORTAR TO ENSURE A WATERTIGHT STRUCTURE.
- ABANDONED PIPE 12 INCHES AND LARGER SHALL BE FILLED WITH FLOWABLE FILL IF NOT COMPLETELY REMOVED FROM THE GROUND.
- ABANDONED PIPE UNDERNEATH EXISTING/PROPOSED BUILDINGS SHALL BE FILLED WITH FLOWABLE FILL IF NOT COMPLETELY REMOVED FROM THE GROUND.
- ALL WATER QUALITY BUFFERS AND FLOODWAYS WILL BE STAKED IN THE FIELD (50' O.C. MAX) BY A PROFESSIONAL LAND SURVEYOR PRIOR TO ANY CLEARING OR GRADING.
- PROJECT SWPPP, INCLUDING NOTICE OF COVERAGE AND PERIODIC INSPECTION FORMS, SHALL BE STORED IN MAILBOX ALONG DIXIE DRIVE IN CONTRACTORS STORAGE AREA. RAIN GAUGE SHALL ALSO BE LOCATED IN THIS AREA.



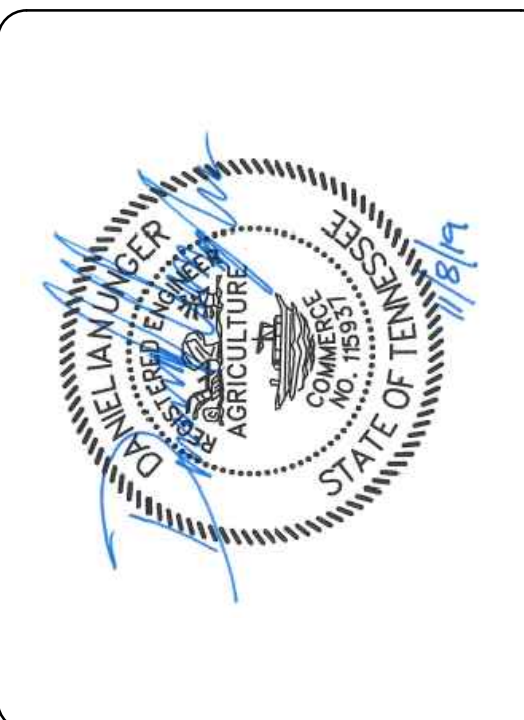
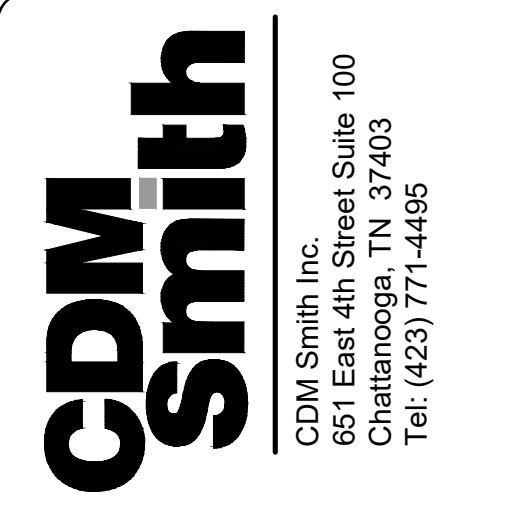
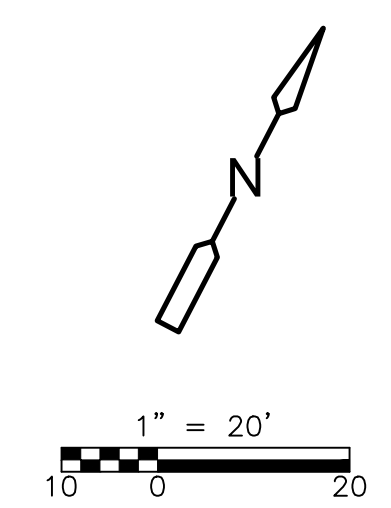
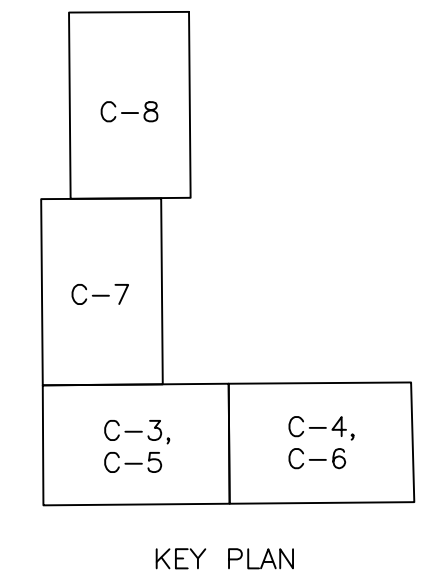
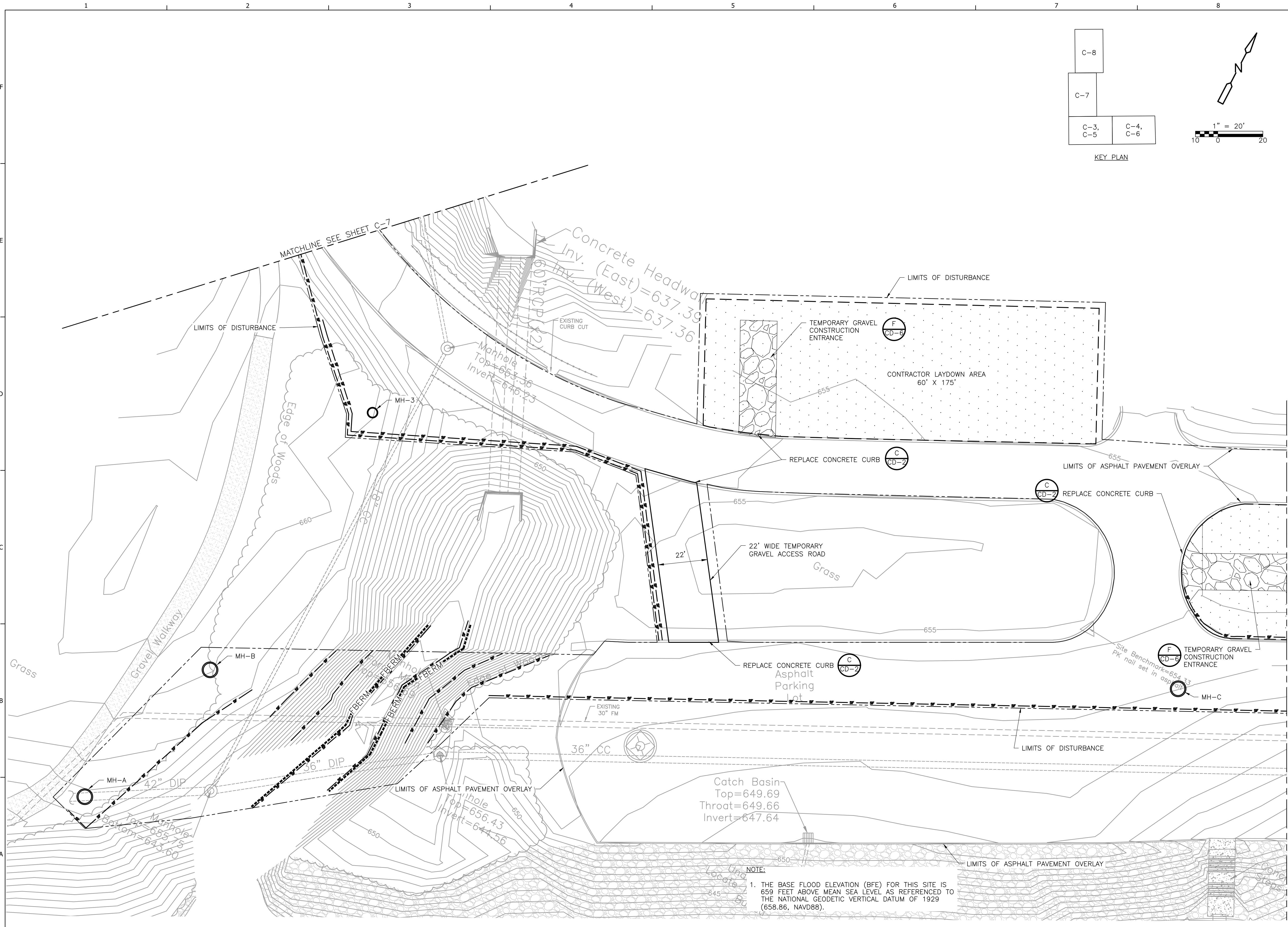
DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: DU
 DESIGNER: VF
 CHECKER: CF/MT

SHEET TITLE: CIVIL
 SHEET: C-2
 ISSUED FOR BID

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DUPONT PUMP STATION AND
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DATE: NOVEMBER 2019
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SHEET TITLE
 CIVIL
SITE LAYOUT AND GRADING PLAN WEST

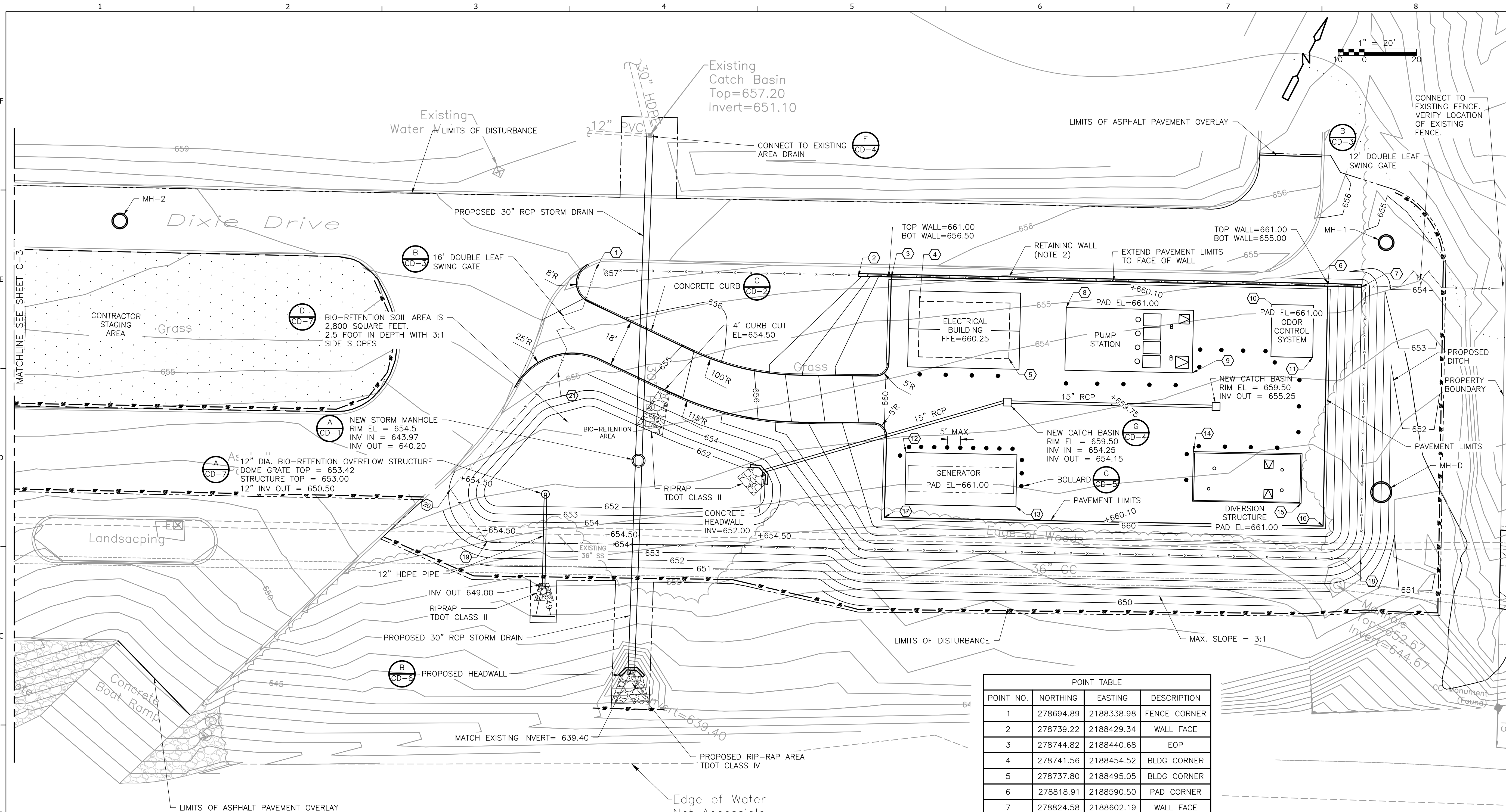
SHEET C-3

NOTE:
 1. THE BASE FLOOD ELEVATION (BFE) FOR THIS SITE IS 659 FEET ABOVE MEAN SEA LEVEL AS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (658.86, NAVD88).

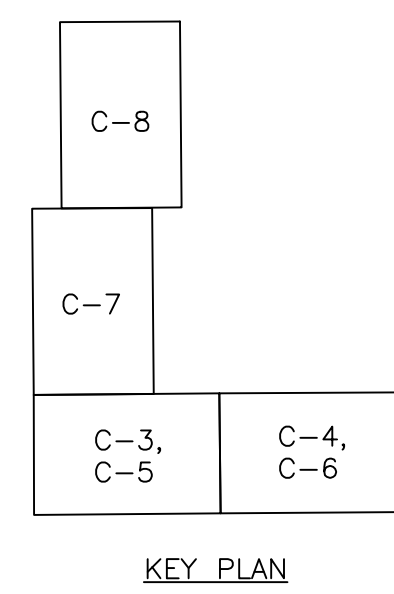
MATCHLINE SEE SHEET C-4

MATCHLINE SEE SHEET C-7

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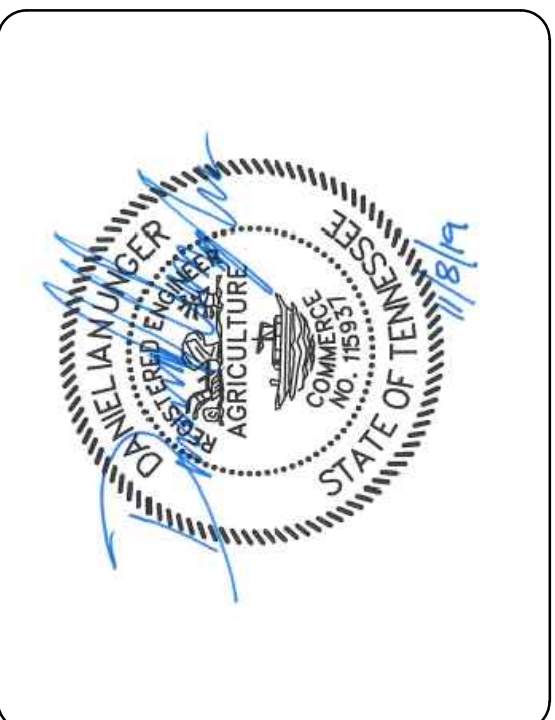


POINT TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1	278694.89	2188338.98	FENCE CORNER
2	278739.22	2188429.34	WALL FACE
3	278744.82	2188440.68	EOP
4	278741.56	2188454.52	BLDG CORNER
5	278737.80	2188495.05	BLDG CORNER
6	278818.91	2188590.50	PAD CORNER
7	278824.58	2188602.19	WALL FACE
8	278765.36	2188505.50	PAD CORNER
9	278765.45	2188559.84	PAD CORNER
10	278802.78	2188574.77	PAD CORNER
11	278792.02	2188598.01	PAD CORNER
12	278687.75	2188476.73	PAD CORNER
13	278688.81	2188523.65	PAD CORNER
14	278738.93	2188574.14	PAD CORNER
15	278740.44	2188619.91	PAD CORNER
16	278736.57	2188631.38	EOP
17	278661.83	2188480.86	EOP
18	278732.05	2188650.03	FENCE CORNER
19	278583.28	2188350.21	FENCE CORNER
20	278594.59	2188328.59	FENCE CORNER
21	278653.70	2188344.20	FENCE CORNER



- NOTES:**
- FINISHED LANDSCAPING SHALL BE INSTALLED AS APPROVED BY OWNER AND SHALL BE PAID FOR UNDER LANDSCAPING ALLOWANCE.
 - REFER TO SPECIFICATION 32 32 23 FOR RETAINING WALL REQUIREMENTS.
 - BIORETENTION AREA SHALL BE INSTALLED AFTER FINAL STABILIZATION OF THE SITE HAS OCCURRED.
 - COMPLY WITH ALL BUFFER AND TREE PROTECTION REQUIREMENTS, AND SCHEDULE A PRE-CONSTRUCTION INSPECTION WITH THE CITY OF CHATTANOOGA'S STORMWATER INSPECTOR, PRIOR TO THE ONSET OF CONSTRUCTION OR LAND DISTURBANCE. AN APPOINTMENT MAY BE SCHEDULED BY CALLING THE STORMWATER INSPECTOR A MINIMUM OF TWO BUSINESS DAYS BEFORE THE DESIRED INSPECTION APPOINTMENT.
 - ADDITIONAL IMPERVIOUS AREA = 0.41 AC

- PRIOR TO FINAL ACCEPTANCE BY THE CITY ENGINEER, THE OWNER OR OWNER'S AGENT SHALL:
 - SUBMIT AN INVENTORY OF THE CONSTRUCTED STORMWATER DRAINAGE SYSTEM, WHETHER PUBLIC OR PRIVATE, TO THE CITY OF CHATTANOOGA IN ELECTRONIC FORMAT. ELECTRONIC AS-BUILT DRAWINGS IN TENNESSEE STATE PLANE COORDINATES SHALL BE SUBMITTED IN AUTOCAD AND PDF FORMAT AND SHALL SHOW PLAINLY THE APPROVED AND CONSTRUCTED LAYOUT OF THE STORMWATER SYSTEMS. THE AS-BUILT DRAWINGS SHALL INCLUDE ALL STORMWATER FEATURES, WHETHER NEW OR EXISTING, INCLUDING THE OUTFALL TO THE CITY DRAINAGE SYSTEM (EX. CATCH BASINS, CONDUITS, HYDROLOGIC FEATURES INCLUDING PONDS, STREAMS, CULVERT INLETS AND OUTFALLS, ALL PERVIOUS SURFACES, ETC.)
 - COMPLY WITH ALL PERMANENT LANDSCAPE REQUIREMENTS AND SCHEDULE A LANDSCAPE INSPECTION WITH THE CITY OF CHATTANOOGA'S STORMWATER INSPECTOR. AN APPOINTMENT MAY BE MADE BY CALLING THE STORMWATER INSPECTOR A MINIMUM OF TWO BUSINESS DAYS BEFORE THE DESIRED INSPECTION APPOINTMENT.
 - ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST COMPLY WITH THE CURRENT EDITION OF THE TN EROSION AND SEDIMENT CONTROL MANUAL, THE CITY OF CHATTANOOGA BMP MANUAL, AND THE TDEC CONSTRUCTION GENERAL PERMIT



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 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

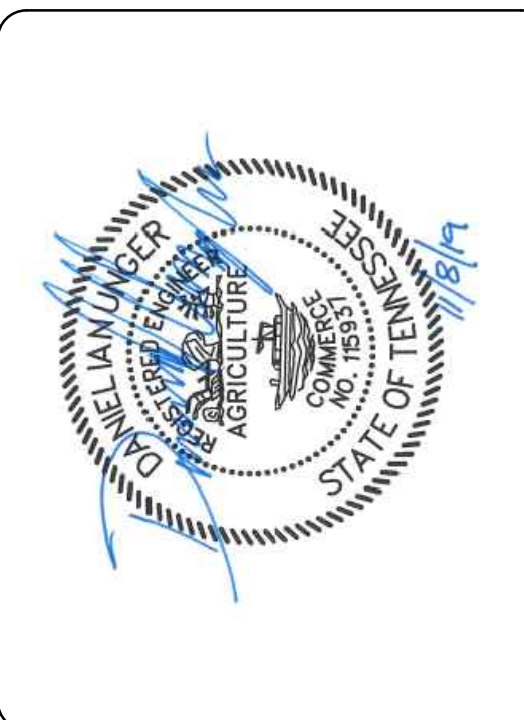
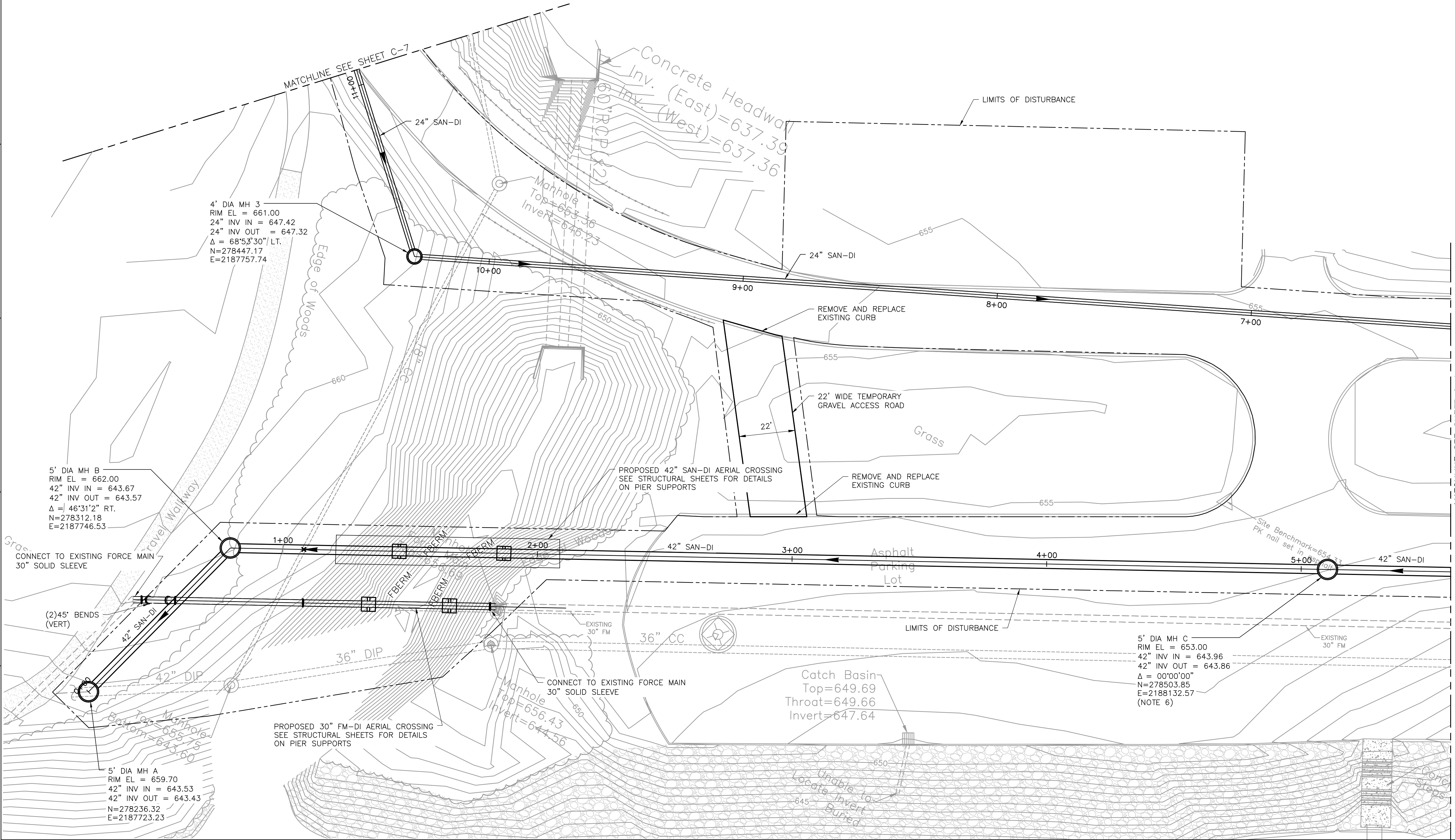
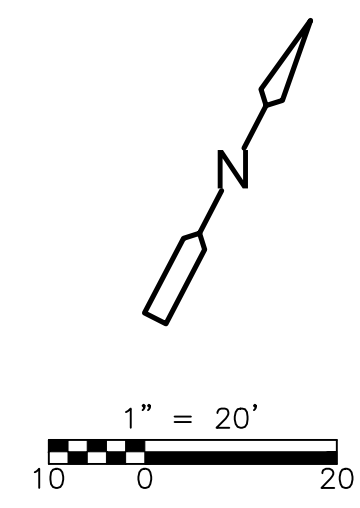
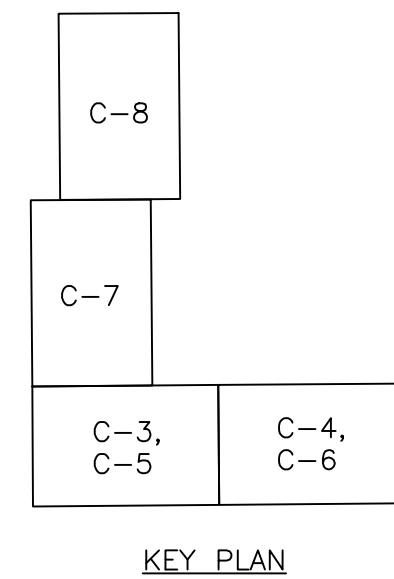
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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: DU DESIGNER: VF CHECKER: CF/MT
 SHEET TITLE: CIVIL
PUMP STATION SITE LAYOUT AND GRADING PLAN EAST
 SHEET: C-4

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NOTES:

- CONTRACTOR SHALL FIELD VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF PIPES AND PIPE CROSSING OF NEW AND EXISTING PIPING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER/OWNER OF ANY DISCREPANCIES.
- ALL NEW 30" FM-DI PIPING AND FITTINGS SHALL BE RESTRAINED.
- CONTRACTOR SHALL COORDINATE WITH UTILITY AND OWNER ON RELOCATION OF ANY GUY WIRES OR UTILITY POLES TO BE RELOCATED AS PART OF THE WORK. ALL COSTS ASSOCIATED WITH RELOCATIONS SHALL BE PAID BY CONTRACTOR.
- ELECTRICAL DUCTBANKS ARE NOT SHOW FOR CLARITY PURPOSES. CONTRACTOR SHALL REFER TO ELECTRICAL DRAWINGS FOR DUCTBANK LAYOUT AND COORDINATE INSTALLATION TO AVOID ANY POTENTIAL CONFLICTS WITH PROCESS PIPING.
- MAINTAIN EMERGENCY ACCESS TO BOAT RAMP AND CHAMPIONS TENNIS CLUB AT ALL TIMES.
- FE-1030 AND FIT-1030 ARE LOCATED IN MANHOLE C
- CONTRACTOR SHALL NOTIFY SURVEYOR AND CITY STORMWATER INSPECTOR AT LEAST 48 HOURS PRIOR TO ANY COVER PLACED ON UNDERGROUND SYSTEMS. FAILURE TO DO SO MAY RESULT IN RE-EXCAVATION AND/OR RE-CONSTRUCTION AT THE CONTRACTORS' EXPENSE.



DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
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PROJECT NO: 129699-109746

DATE: NOVEMBER 2019

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DU	VF	CF/MT

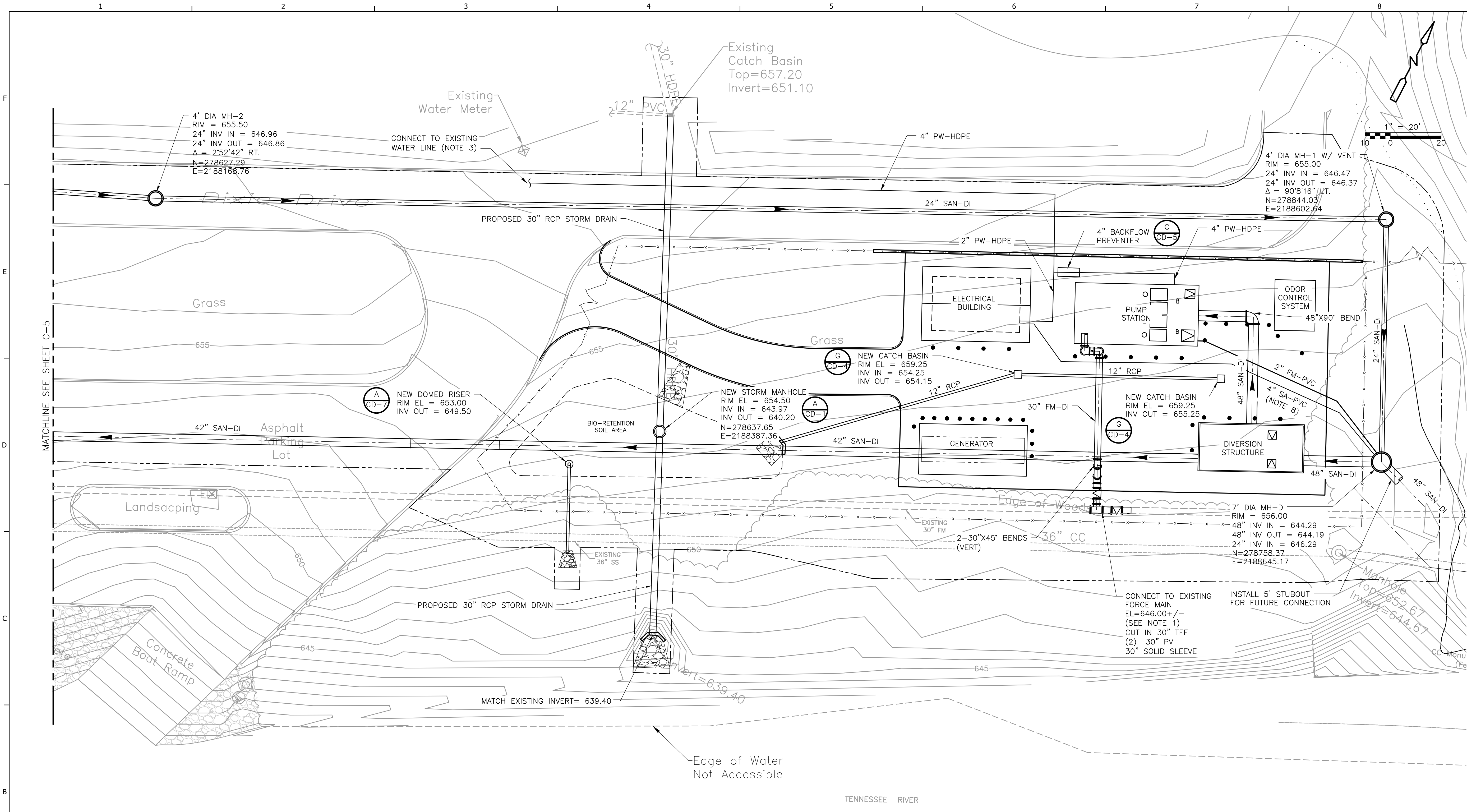
SHEET TITLE: CIVIL

YARD PIPING PLAN WEST

SHEET: C-5

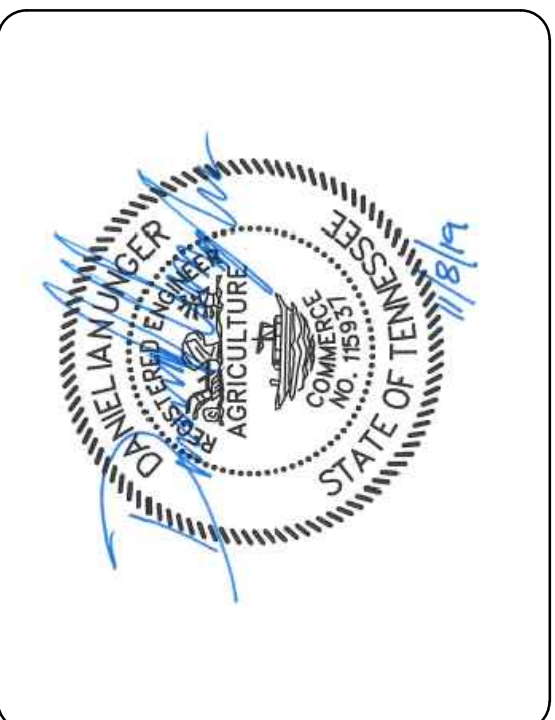
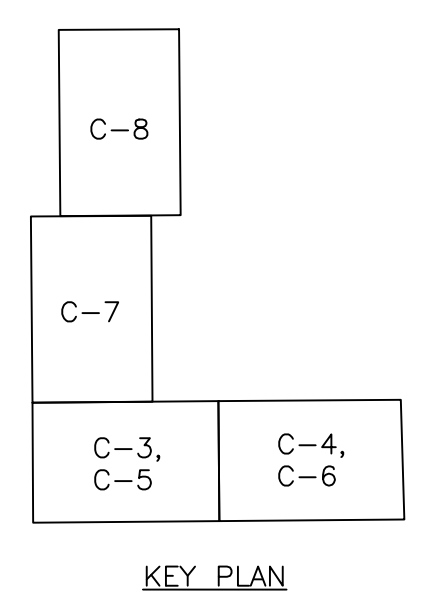
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- NOTES:**
- CONTRACTOR SHALL FIELD VERIFY LOCATIONS (HORIZONTAL AND VERTICAL) OF PIPES AND PIPE CROSSING OF NEW AND EXISTING PIPING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER/OWNER OF ANY DISCREPANCIES.
 - CONTRACTOR SHALL COORDINATE WITH UTILITY AND OWNER ON RELOCATION OF ANY GUY WIRES OR UTILITY POLES TO BE RELOCATED AS PART OF THE WORK. ALL COSTS ASSOCIATED WITH RELOCATIONS SHALL BE PAID BY CONTRACTOR.
 - CONTRACTOR TO LOCATE EXISTING 4" WATER LINE AND TIE IN USING A 4" RJ TEE AND 4" GATE VALVE.
 - CONTRACTOR SHALL RUN 2" SCHEDULE 80 PVC PIPE FROM SUMP PUMP DISCHARGE TO MH-D. EXACT ROUTING TO BE COORDINATED IN THE FIELD. PIPE SHALL HAVE A MINIMUM 2 FOOT COVER AND POSITIVE SLOPES TO PUMP.

- ELECTRICAL DUCTBANKS ARE NOT SHOW FOR CLARITY PURPOSES. CONTRACTOR SHALL REFER TO ELECTRICAL DRAWINGS FOR DUCTBANK LAYOUT AND COORDINATE INSTALLATION TO AVOID ANY POTENTIAL CONFLICTS WITH PROCESS PIPING.
- THE BASE FLOOD ELEVATION (BFE) FOR THIS SITE IS 659 FEET ABOVE MEAN SEA LEVEL AS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (658.86, NAVD88).
- MAINTAIN EMERGENCY ACCESS TO BOAT RAMP AND CHAMPIONS TENNIS CLUB AT ALL TIMES.
- CONTRACTOR SHALL RUN 4" SA-PVC FROM ELECTRICAL BUILDING TO MH-D. EXACT ROUTING TO BE COORDINATED IN THE FIELD. PIPE SHALL HAVE MINIMUM 1% SLOPE AND MINIMUM 3 FEET OF COVER.

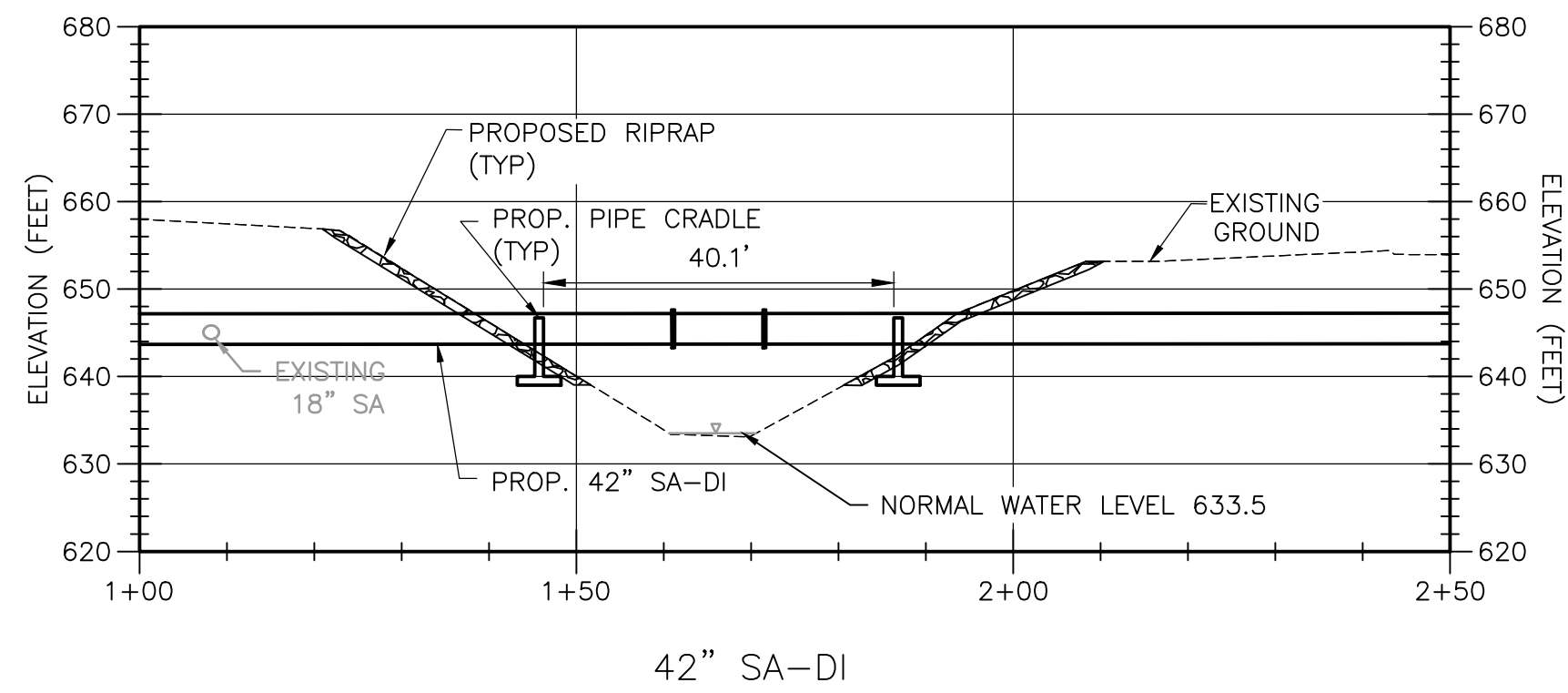


**DUPONT PUMP STATION AND
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 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

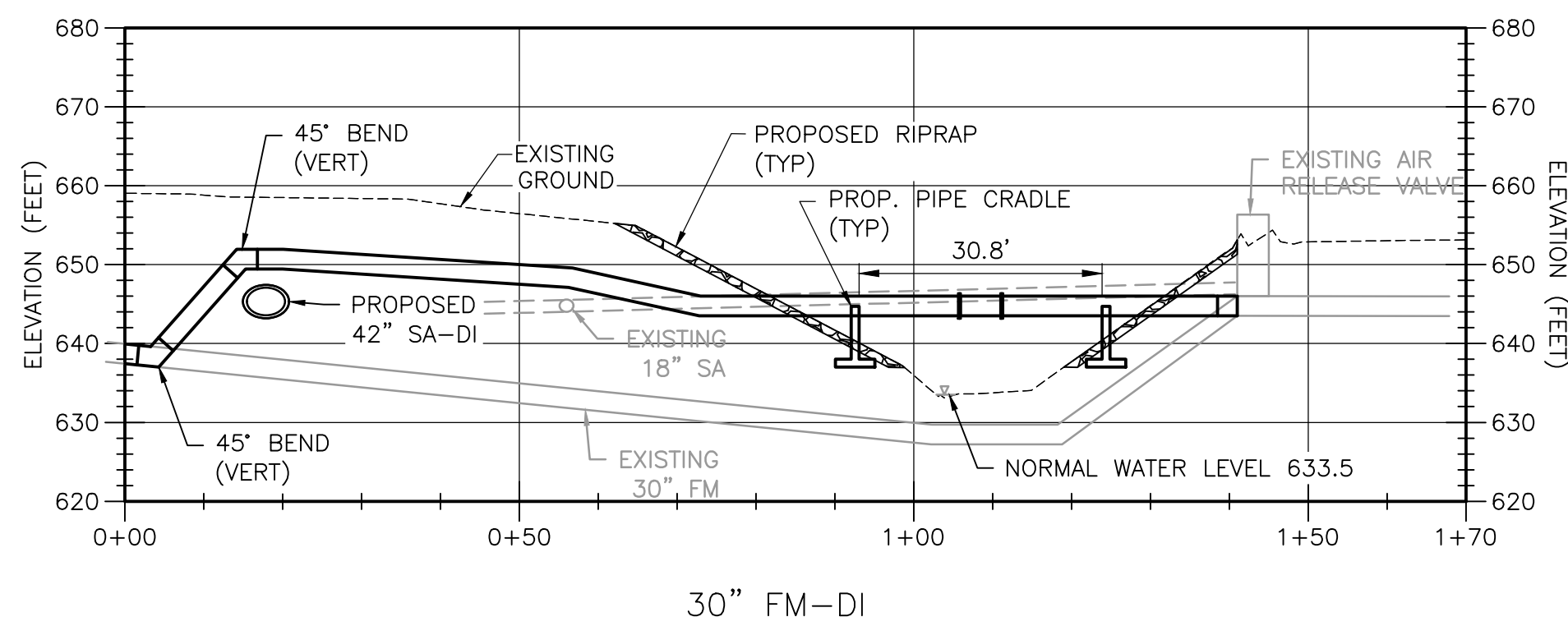
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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: DU DESIGNER: VF CHECKER: CF/MT
 SHEET TITLE: CIVIL
YARD PIPING PLAN EAST
 SHEET: C-6

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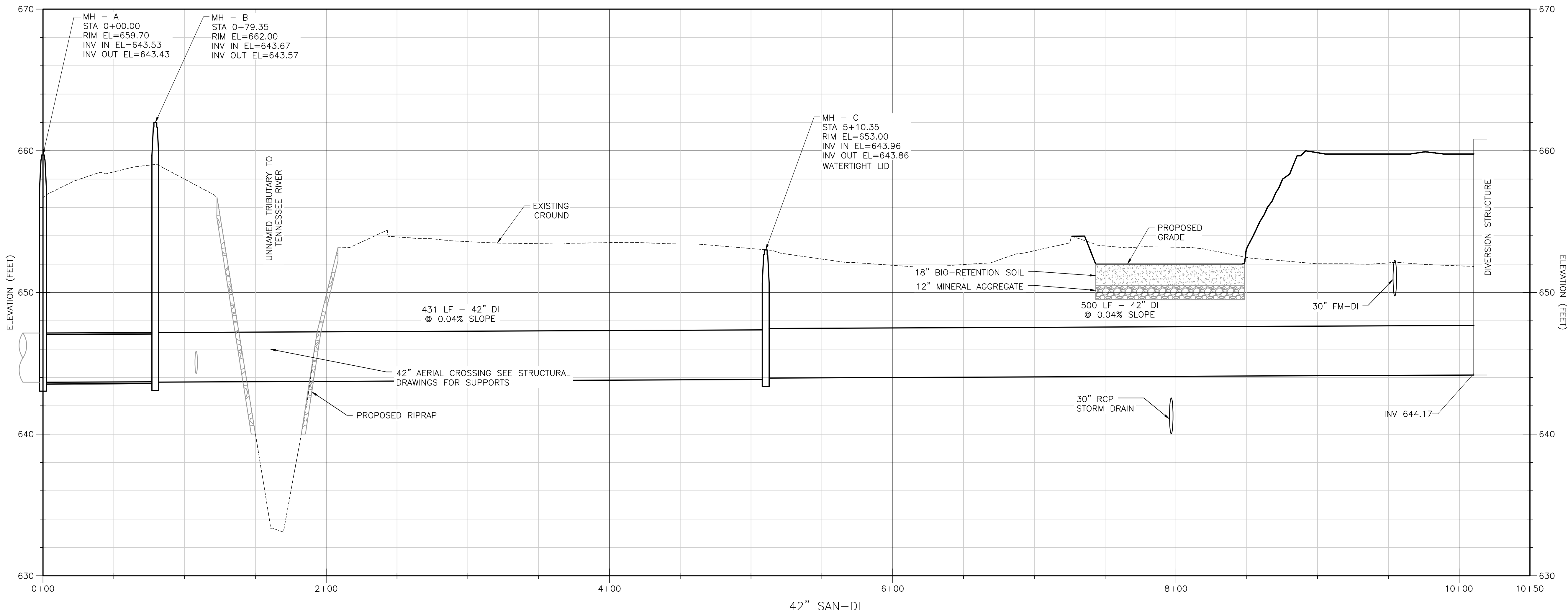


42" SA-DI

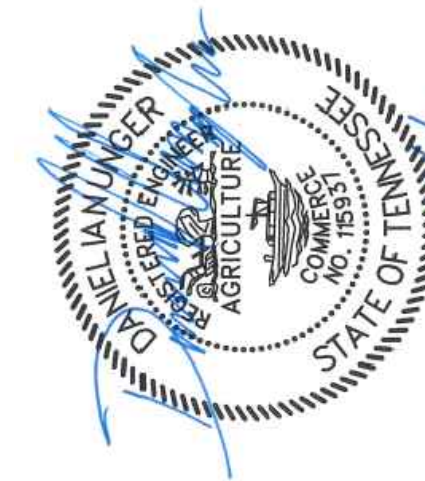
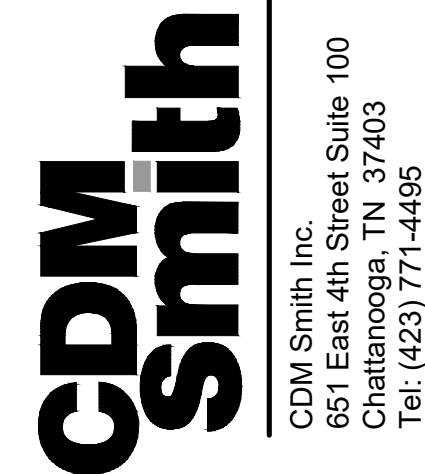


30" FM-DI

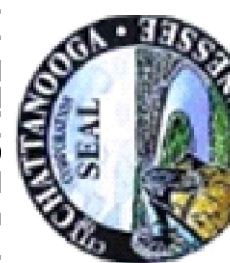
- NOTE:
1. AERIAL CROSSINGS SHALL BE CLASS 53 DI IN ACCORDANCE WITH SECTION 40 05 18.



42" SAN-DI



DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM



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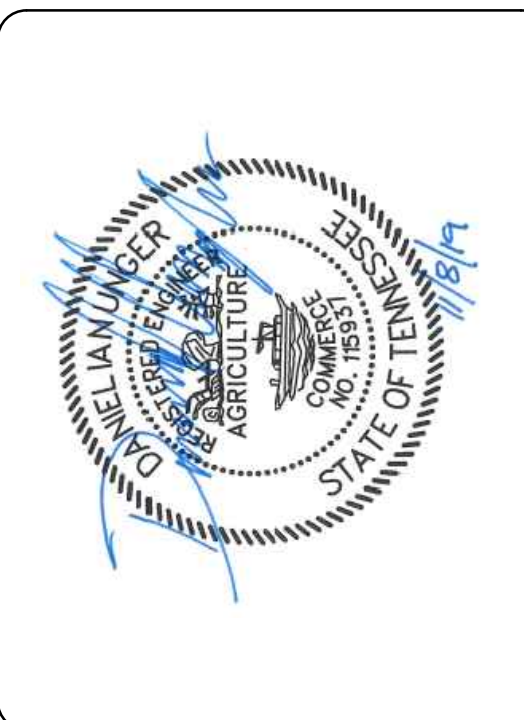
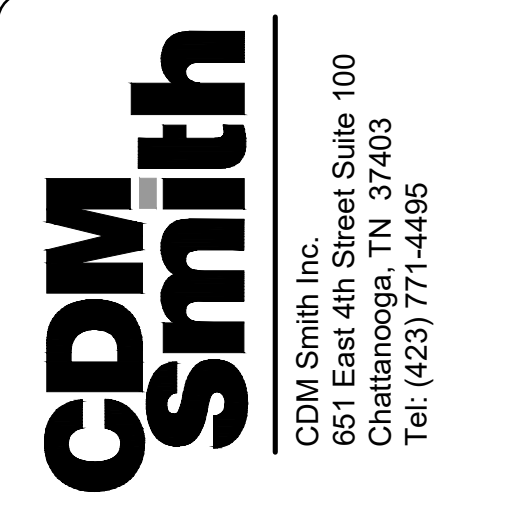
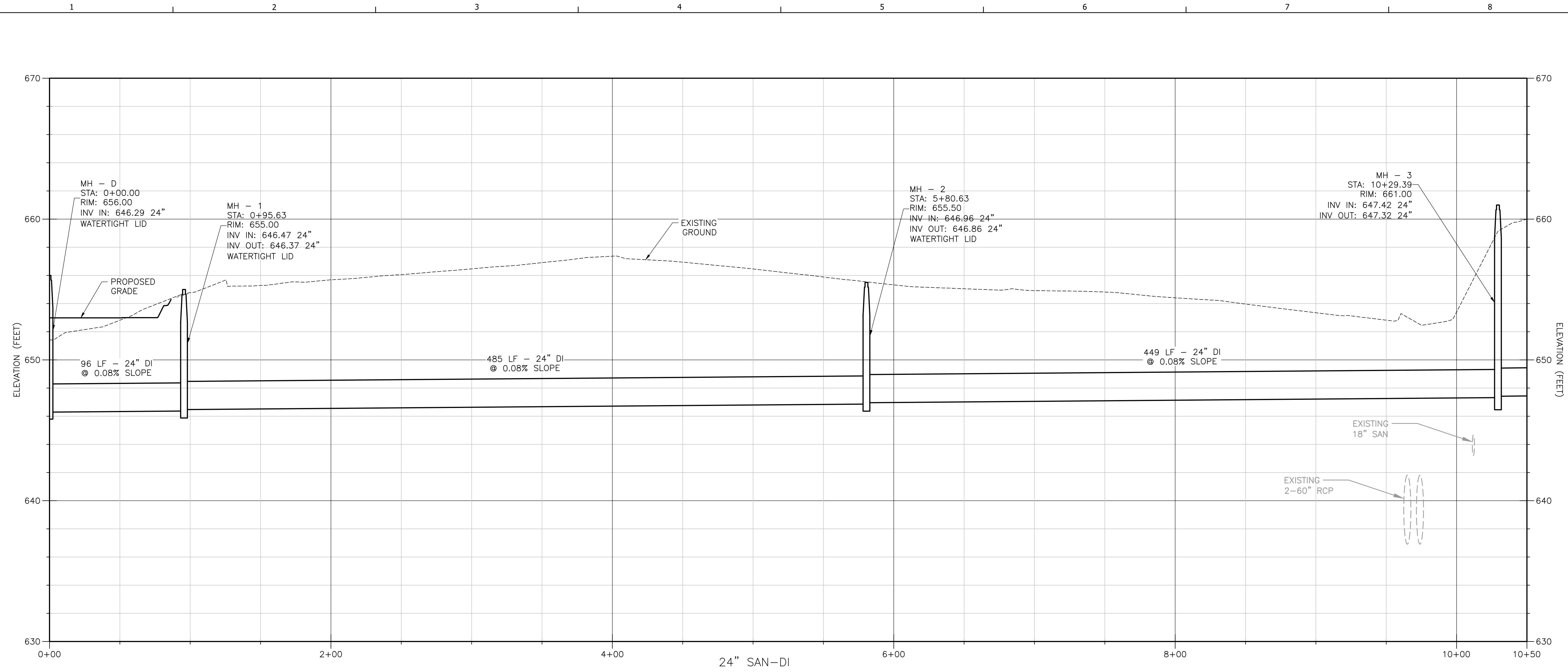
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PROJECT NO: 129699-109746
DATE: NOVEMBER 2019
DISC. LEAD: DU DESIGNER: VF CHECKER: CF/MT

SHEET TITLE CIVIL
YARD PIPING PROFILES
42" SANITARY SEWER


SHEET C-9

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DATE: NOVEMBER 2019

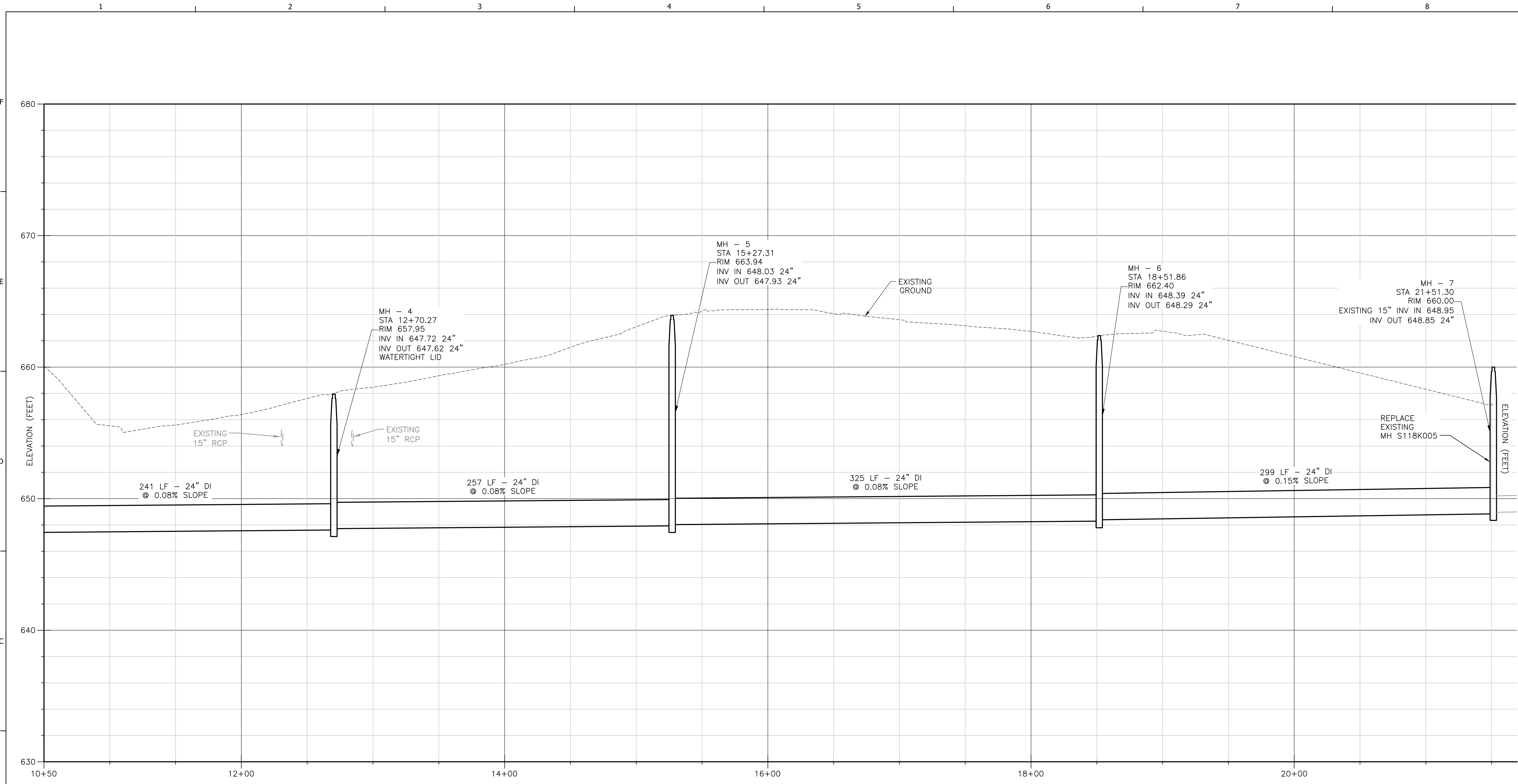
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SHEET TITLE: CIVIL

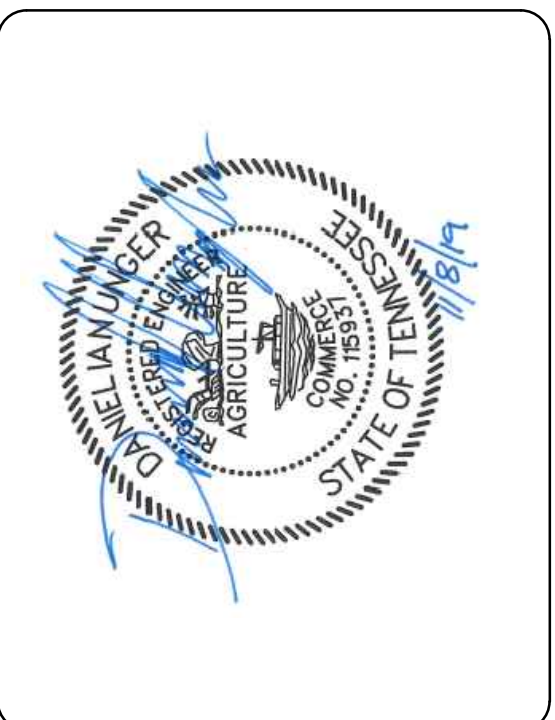
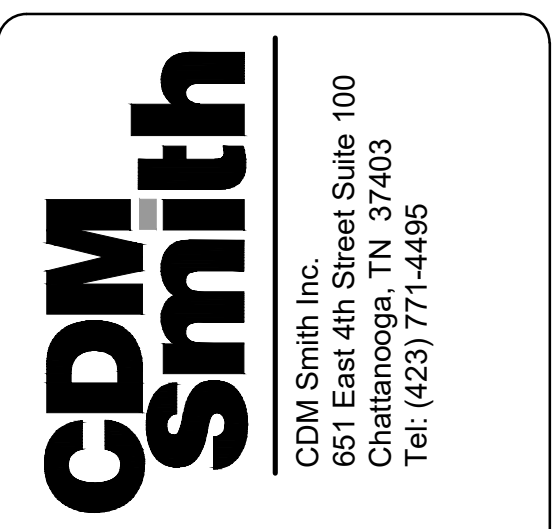
YARD PIPING PROFILES
24" SANITARY SEWER I

SHEET: C-10

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24" SAN-DI



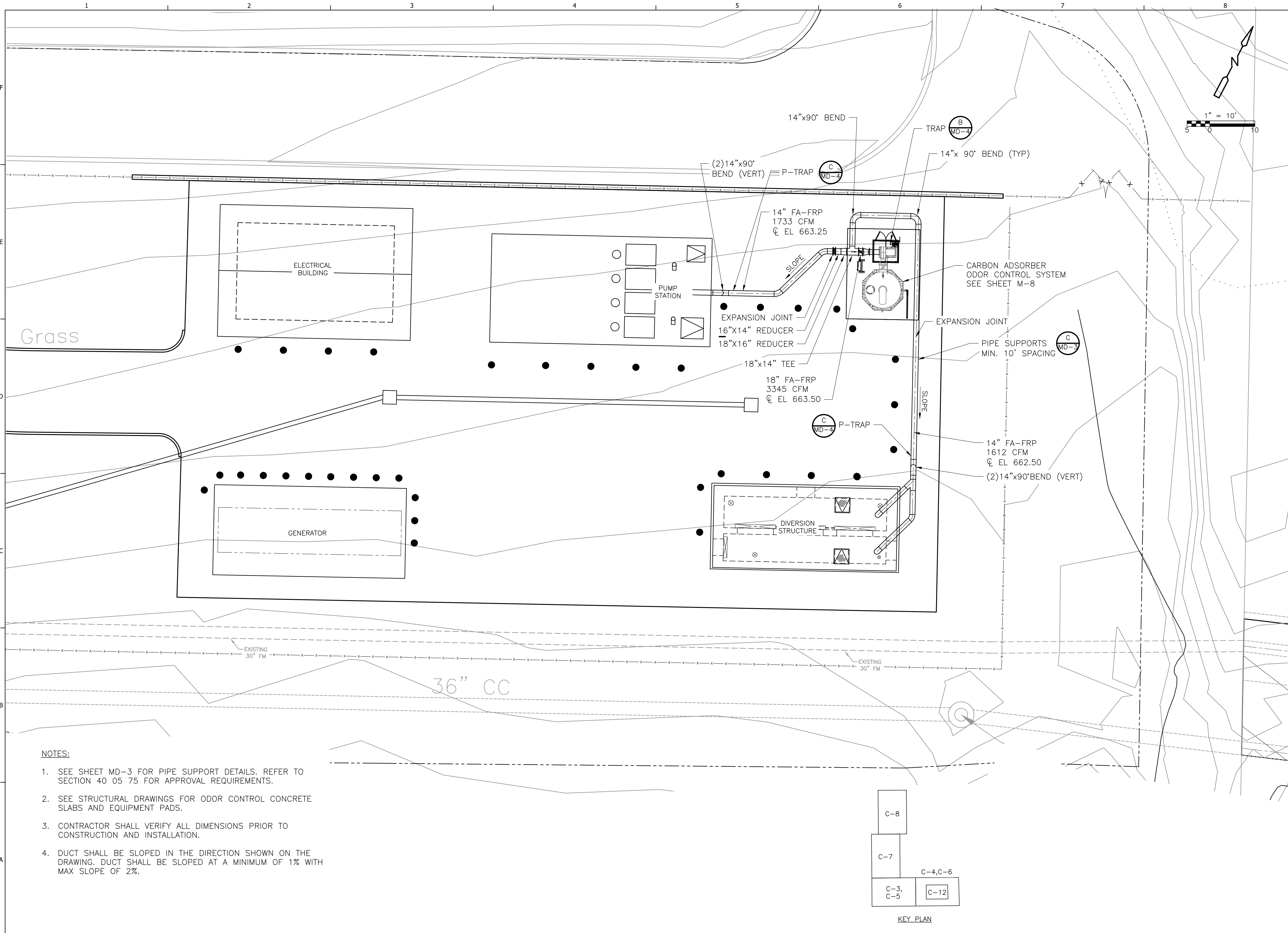
DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM



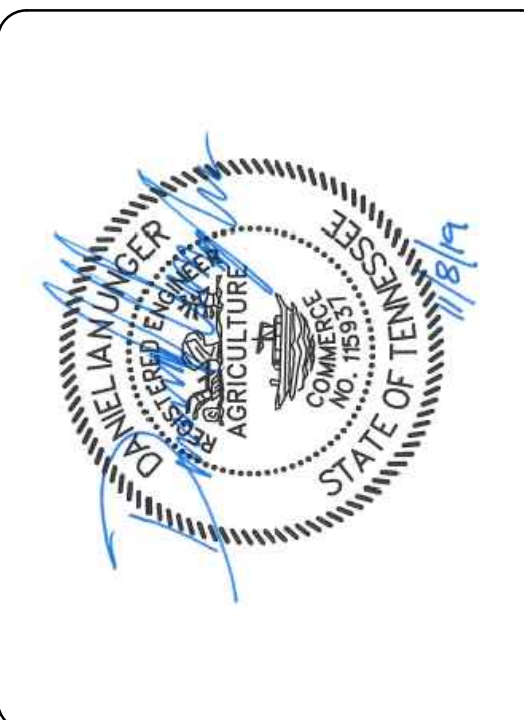
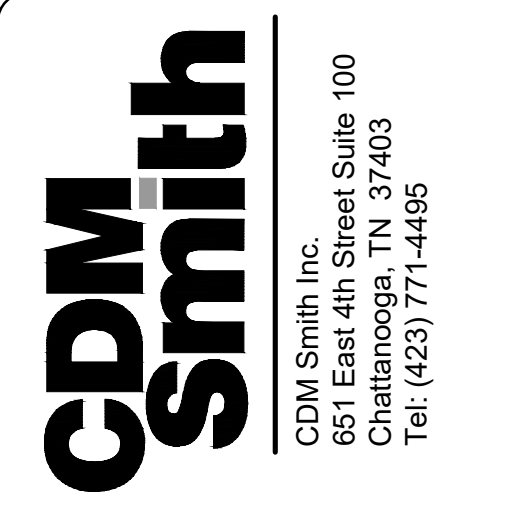
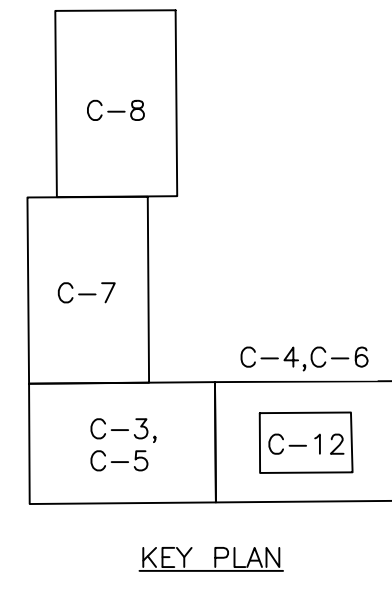
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 DATE: NOVEMBER 2019
 DISC. LEAD: DU DESIGNER: VF CHECKER: CF/MT
 SHEET TITLE: CIVIL
 YARD PIPING PROFILES
 24" SANITARY SEWER II
 SHEET: C-11

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- NOTES:**
- SEE SHEET MD-3 FOR PIPE SUPPORT DETAILS. REFER TO SECTION 40 05 75 FOR APPROVAL REQUIREMENTS.
 - SEE STRUCTURAL DRAWINGS FOR ODOR CONTROL CONCRETE SLABS AND EQUIPMENT PADS.
 - CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION AND INSTALLATION.
 - DUCT SHALL BE SLOPED IN THE DIRECTION SHOWN ON THE DRAWING. DUCT SHALL BE SLOPED AT A MINIMUM OF 1% WITH MAX SLOPE OF 2%.

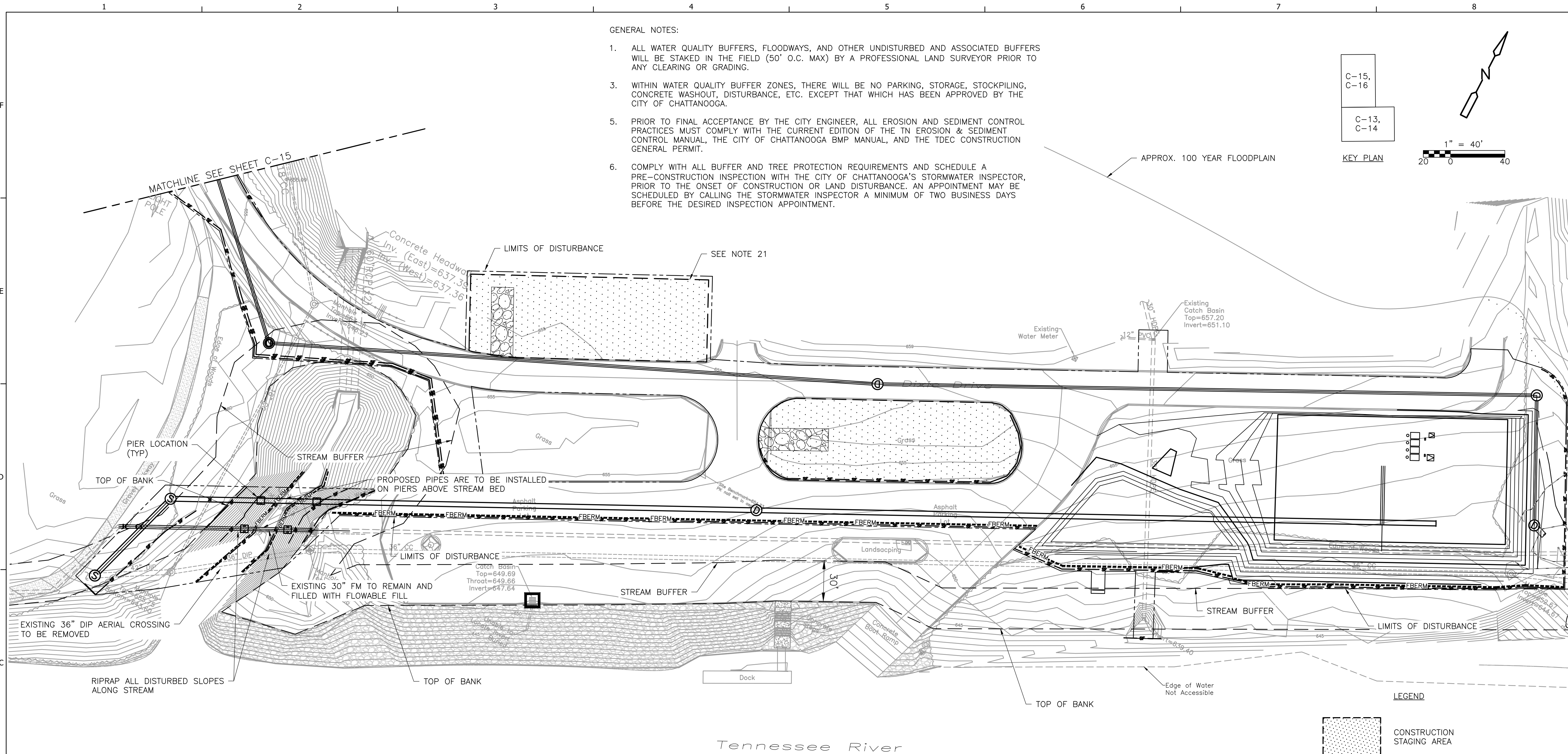


DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
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 SHEET TITLE: CIVIL
ODOR CONTROL DUCT PLAN
 SHEET: C-12

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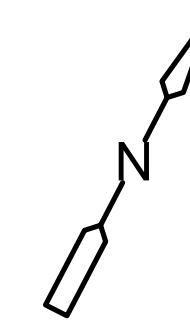
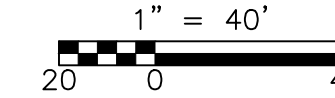
GENERAL NOTES:

- ALL WATER QUALITY BUFFERS, FLOODWAYS, AND OTHER UNDISTURBED AND ASSOCIATED BUFFERS WILL BE STAKED IN THE FIELD (50' O.C. MAX) BY A PROFESSIONAL LAND SURVEYOR PRIOR TO ANY CLEARING OR GRADING.
- WITHIN WATER QUALITY BUFFER ZONES, THERE WILL BE NO PARKING, STORAGE, STOCKPILING, CONCRETE WASHOUT, DISTURBANCE, ETC. EXCEPT THAT WHICH HAS BEEN APPROVED BY THE CITY OF CHATTANOOGA.
- PRIOR TO FINAL ACCEPTANCE BY THE CITY ENGINEER, ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST COMPLY WITH THE CURRENT EDITION OF THE TN EROSION & SEDIMENT CONTROL MANUAL, THE CITY OF CHATTANOOGA BMP MANUAL, AND THE TDEC CONSTRUCTION GENERAL PERMIT.
- COMPLY WITH ALL BUFFER AND TREE PROTECTION REQUIREMENTS AND SCHEDULE A PRE-CONSTRUCTION INSPECTION WITH THE CITY OF CHATTANOOGA'S STORMWATER INSPECTOR, PRIOR TO THE ONSET OF CONSTRUCTION OR LAND DISTURBANCE. AN APPOINTMENT MAY BE SCHEDULED BY CALLING THE STORMWATER INSPECTOR A MINIMUM OF TWO BUSINESS DAYS BEFORE THE DESIRED INSPECTION APPOINTMENT.

C-15,
C-16

C-13,
C-14

KEY PLAN



EROSION PREVENTION AND SEDIMENT CONTROL NOTES:

- TOTAL SITE AREA: 60.6 ACRES. TOTAL DISTURBED AREA: 4.7 ACRES.
- THERE ARE NO WETLANDS LOCATED ON OR ADJACENT TO THE AREA OF DISTURBANCE.
- NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, SHALL BE PLACED IN WATERS OF THE STATE EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT AND/OR AQUATIC RESOURCES ALTERATION PERMIT.
- PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 14 DAYS PRIOR TO GRADING OR EARTH MOVING ACTIVITIES UNLESS THE AREA IS SUBSEQUENTLY TEMPORARILY OR PERMANENTLY STABILIZED.
- TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO GRADING WORK IN ORDER TO PROTECT EXISTING INLETS AND ADJACENT PROPERTIES FROM SEDIMENT EROSION. ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS.
- DUST CONTROL ON SITE SHALL BE KEPT WITHIN ACCEPTABLE LIMITS BY SPRINKLING WITH WATER OR OTHER ACCEPTABLE METHODS.
- CONTRACTOR LAYDOWN/STAGING AREA SHALL BE LOCATED WITHIN THE LIMITS OF DISTURBANCE.
- MAXIMUM SLOPE CUTS SHALL NOT EXCEED 3:1 UNLESS APPROVED BY THE OWNERS REPRESENTATIVE. CUT AND FILL SLOPES 3:1 OR GREATER SHALL BE STABILIZED BY EROSION CONTROL FABRIC, HYDROSEEDING, SOD, OR OTHER ACCEPTABLE METHODS.
- THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTORS RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- THE LOCATIONS OF EROSION CONTROL DEVICES SHALL BE ADJUSTED AS CONSTRUCTION PROGRESSES TO MAINTAIN A FUNCTIONAL EROSION CONTROL SYSTEM.
- ALL BMPs WITH A HYDRAULIC DESIGN COMPONENT, AND ALL REVISIONS TO SUCH BMPs, SHALL BE DESIGNED BY THE ENGINEER OF RECORD.
- ALL BMPs SHOWN ON THIS PLAN HAVE BEEN DESIGNED TO CONTROL THE RAINFALL AND RUNOFF FROM THE 2-YEAR, 24-HOUR STORM EVENT. FAILURE OF ANY EROSION CONTROL DEVICE TO FUNCTION AS INTENDED FOR ANY REASON SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- ALL EROSION CONTROL DEVICES AND OUTFALLS SHALL BE INSPECTED BY A TDEC LEVEL 1 CERTIFIED PERSON AT LEAST TWICE WEEKLY AND AT LEAST 72 HOURS APART.
- TRAPPED SEDIMENT SHALL BE REMOVED FROM DEVICES WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.
- EROSION CONTROL DEVICES SHALL BE RESTORED OR REPAIRED AS NECESSARY WITHIN 7 DAYS AFTER THE NEED FOR MAINTENANCE IS IDENTIFIED.
- TEMPORARY OR PERMANENT SOIL STABILIZATION SHALL BE COMPLETED NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN A PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED (7 DAYS FOR SLOPES GREATER THAN 35%). REFER TO DETAIL A, SHEET CD-6 FOR GROUND STABILIZATION REQUIREMENTS.
- EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED AND THEN REMOVED SO THAT DRAINAGE OF THE SITE IS NOT IMPEDED.
- TOPSOIL SHALL BE RE-SPREAD A MINIMUM DEPTH OF 6" OVER ALL DISTURBED AREAS TO BE VEGETATED.
- AREAS THAT HAVE BEEN STRIPPED, CUT SLOPES, FILL SLOPES OR AREAS OTHERWISE DISTURBED SHALL HAVE PERMANENT STABILIZATION APPLIED (GRASS, SOD, ETC.). PERMANENT STABILIZATION SHALL BE PLACED PRIOR TO ACCEPTANCE OF FINAL GRADING.
- CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM DRAINAGE STRUCTURES PRIOR TO ACCEPTANCE BY THE OWNER.
- PROJECT SWPPP, INCLUDING NOTICE OF COVERAGE AND PERIODIC INSPECTION FORMS, SHALL BE STORED IN MAILBOX IN CONTRACTOR LAYDOWN AREA. RAIN GAUGE SHALL ALSO BE LOCATED IN THIS AREA.
- DEWATERING SHALL BE PROVIDED ALONG PIPE INSTALLATION AS NEEDED BY UTILIZING A PUMP AND DISCHARGE TO A SEDIMENT FILTER BAG. DISCHARGE MUST BE DONE IN A NON-EROSIVE MANNER.

WATER QUALITY RIPARIAN BUFFER ZONE REQUIREMENTS:

THE UNNAMED TRIBUTARY TO TENNESSEE RIVER ADJACENT TO THE PROJECT SITE IS SUBJECT TO THE CITY OF CHATTANOOGA'S WATER QUALITY BUFFER REQUIREMENTS (SEC. 31-324.2) WHICH EXCEED THE MINIMUM WATER QUALITY RIPARIAN BUFFER ZONE REQUIREMENTS OF TENNESSEE GENERAL PERMIT NO. TNR100000.

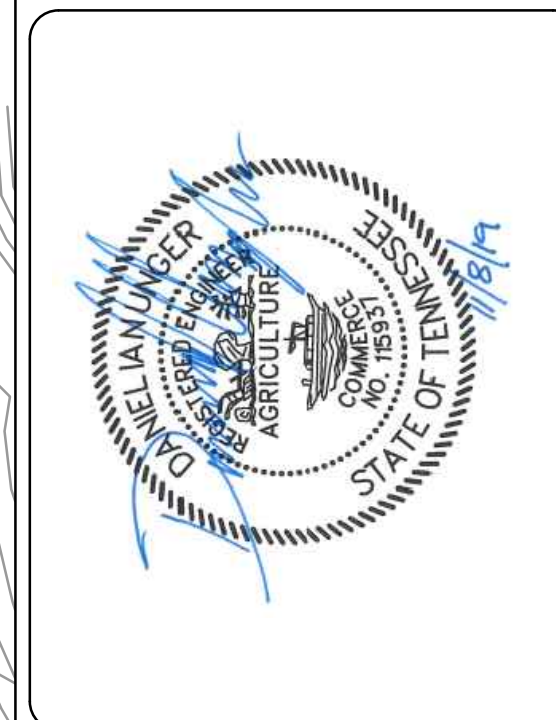
CITY OF CHATTANOOGA WATER QUALITY BUFFER REQUIREMENTS FOR DRAINAGE BASINS GREATER THAN ONE SQUARE MILE ARE SIXTY (60) LINEAR FEET MEASURED PERPENDICULAR FROM THE TOP OF BANK ON BOTH SIDES. THE WATER QUALITY BUFFER CAN BE AVERAGED AS LONG AS THE MINIMUM IS NO LESS THAN THIRTY (30) FEET.

THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTURBANCE OF VEGETATION EXCEPT AS PERMITTED IN WRITING BY THE CITY OF CHATTANOOGA'S SITE DEVELOPMENT MANAGER.

LEGEND

	CONSTRUCTION STAGING AREA
	STREAM BUFFER
	SILT FENCE (SEE DETAIL)
	FILTER BERM (SEE DETAIL)
	CONSTRUCTION ENTRANCE (SEE DETAIL)
	INLET PROTECTION (SEE DETAIL)
	AREA OUTFALL

CDM Smith
 CDM Smith Inc.
 651 East 4th Street Suite 100
 Chattanooga, TN 37403
 Tel: (423) 771-4495



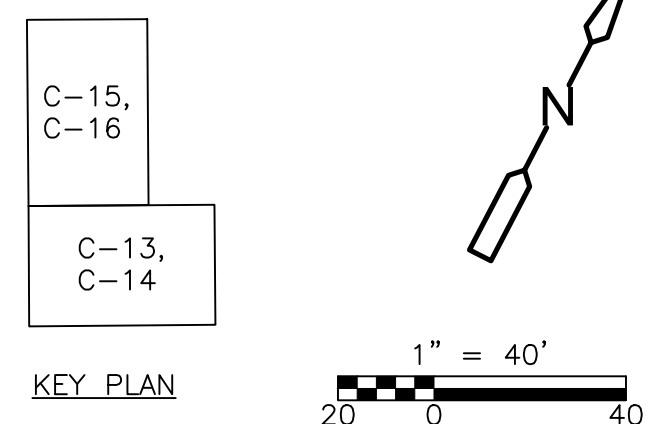
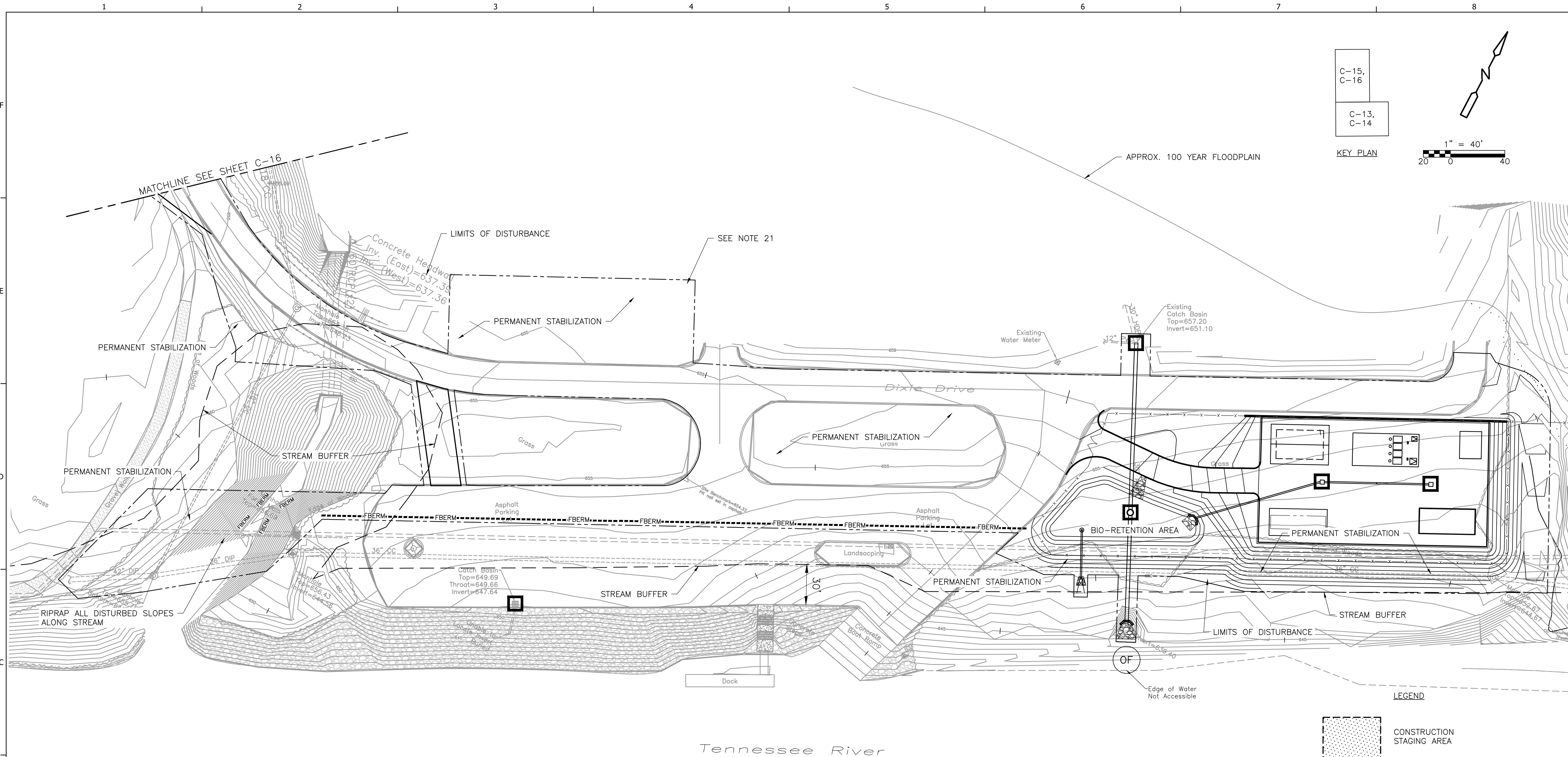
DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
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SHEET TITLE CIVIL
INITIAL EROSION AND SEDIMENT CONTROL PLAN
 SHEET C-13

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EROSION PREVENTION AND SEDIMENT CONTROL NOTES:

- TOTAL SITE AREA: 60.53 ACRES. TOTAL DISTURBED AREA: 3.5 ACRES.
- THERE ARE NO WETLANDS LOCATED ON OR ADJACENT TO THE AREA OF DISTURBANCE.
- NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, SHALL BE PLACED IN WATERS OF THE STATE EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT AND/OR AQUATIC RESOURCES ALTERATION PERMIT.
- PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 14 DAYS PRIOR TO GRADING OR EARTH MOVING ACTIVITIES UNLESS THE AREA IS SUBSEQUENTLY TEMPORARILY OR PERMANENTLY STABILIZED.
- TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO GRADING WORK IN ORDER TO PROTECT EXISTING INLETS AND ADJACENT PROPERTIES FROM SEDIMENT EROSION. ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS.
- DUST CONTROL ON SITE SHALL BE KEPT WITHIN ACCEPTABLE LIMITS BY SPRINKLING WITH WATER OR OTHER ACCEPTABLE METHODS.
- CONTRACTOR LAYDOWN/STAGING AREA SHALL BE LOCATED WITHIN THE LIMITS OF DISTURBANCE.
- MAXIMUM SLOPE CUTS SHALL NOT EXCEED 3:1 UNLESS APPROVED BY THE OWNERS REPRESENTATIVE. CUT AND FILL SLOPES 3:1 OR GREATER SHALL BE STABILIZED BY EROSION CONTROL FABRIC, HYDROSEEDING, SOD, OR OTHER ACCEPTABLE METHODS.
- THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTORS RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- THE LOCATIONS OF EROSION CONTROL DEVICES SHALL BE ADJUSTED AS CONSTRUCTION PROGRESSES TO MAINTAIN A FUNCTIONAL EROSION CONTROL SYSTEM.

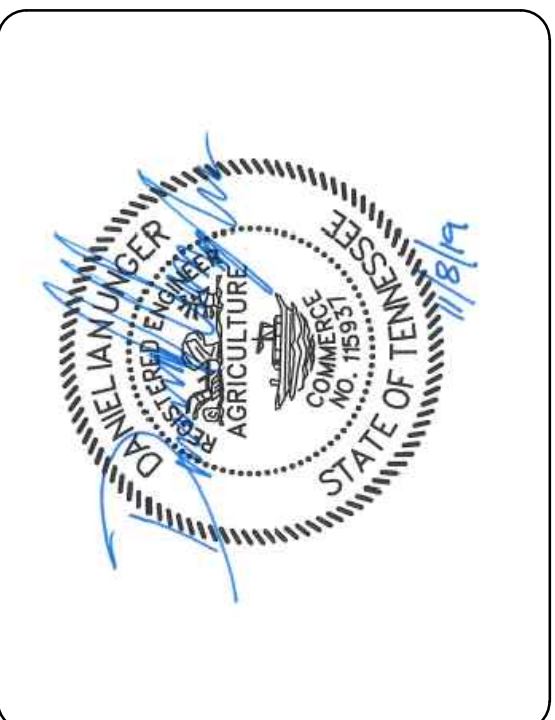
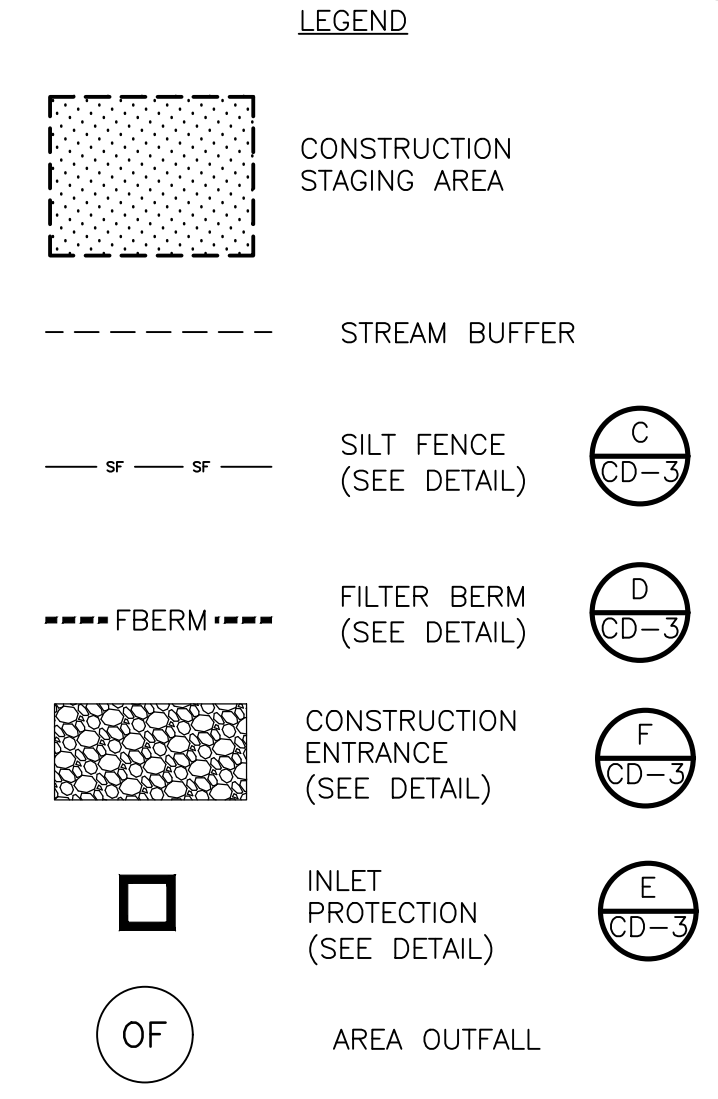
- ALL BMPs WITH A HYDRAULIC DESIGN COMPONENT, AND ALL REVISIONS TO SUCH BMPs, SHALL BE DESIGNED BY THE ENGINEER OF RECORD.
- ALL BMPs SHOWN ON THIS PLAN HAVE BEEN DESIGNED TO CONTROL THE RAINFALL AND RUNOFF FROM THE 2-YEAR, 24-HOUR STORM EVENT. FAILURE OF ANY EROSION CONTROL DEVICE TO FUNCTION AS INTENDED FOR ANY REASON SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- ALL EROSION CONTROL DEVICES AND OUTFALLS SHALL BE INSPECTED BY QUALIFIED PERSONNEL AT LEAST TWICE WEEKLY AND AT LEAST 72 HOURS APART.
- TRAPPED SEDIMENT SHALL BE REMOVED FROM DEVICES WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.
- EROSION CONTROL DEVICES SHALL BE RESTORED OR REPAIRED AS NECESSARY WITHIN 7 DAYS AFTER THE NEED FOR MAINTENANCE IS IDENTIFIED.
- TEMPORARY OR PERMANENT SOIL STABILIZATION SHALL BE COMPLETED NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN A PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED (7 DAYS FOR SLOPES GREATER THAN 35%). REFER TO DETAIL A, SHEET CD-3 FOR GROUND STABILIZATION REQUIREMENTS.
- EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED AND THEN REMOVED SO THAT DRAINAGE OF THE SITE IS NOT IMPEDED.
- TOPSOIL SHALL BE RE-SPREAD A MINIMUM DEPTH OF 6" OVER ALL DISTURBED AREAS TO BE VEGETATED.
- AREAS THAT HAVE BEEN STRIPPED, CUT SLOPES, FILL SLOPES OR AREAS OTHERWISE DISTURBED SHALL HAVE PERMANENT STABILIZATION APPLIED (GRASS, SOD, ETC.). PERMANENT STABILIZATION SHALL BE PLACED PRIOR TO ACCEPTANCE OF FINAL GRADING.
- CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM DRAINAGE STRUCTURES PRIOR TO ACCEPTANCE BY THE OWNER.
- PROJECT SWPPP, INCLUDING NOTICE OF COVERAGE AND PERIODIC INSPECTION FORMS, SHALL BE STORED IN MAILBOX IN CONTRACTOR LAYDOWN AREA. RAIN GAUGE SHALL ALSO BE LOCATED IN THIS AREA.

WATER QUALITY RIPARIAN BUFFER ZONE REQUIREMENTS:

THE UNNAMED TRIBUTARY TO TENNESSEE RIVER ADJACENT TO THE PROJECT SITE IS SUBJECT TO THE CITY OF CHATTANOOGA'S WATER QUALITY BUFFER REQUIREMENTS (SEC. 31-324.2) WHICH EXCEED THE MINIMUM WATER QUALITY RIPARIAN BUFFER ZONE REQUIREMENTS OF TENNESSEE GENERAL PERMIT NO. TNR100000.

CITY OF CHATTANOOGA WATER QUALITY BUFFER REQUIREMENTS FOR DRAINAGE BASINS GREATER THAN ONE SQUARE MILE ARE SIXTY (60) LINEAR FEET MEASURED PERPENDICULAR FROM THE TOP OF BANK ON BOTH SIDES. THE WATER QUALITY BUFFER CAN BE AVERAGED AS LONG AS THE MINIMUM IS NO LESS THAN THIRTY (30) FEET.

THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTURBANCE OF VEGETATION EXCEPT AS PERMITTED IN WRITING BY THE CITY OF CHATTANOOGA'S SITE DEVELOPMENT MANAGER.

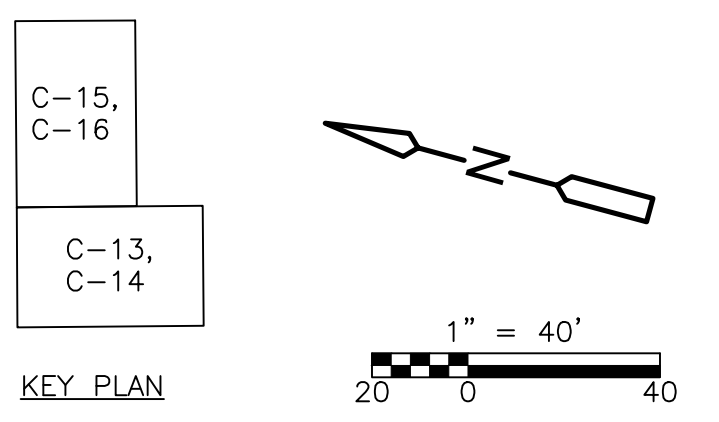
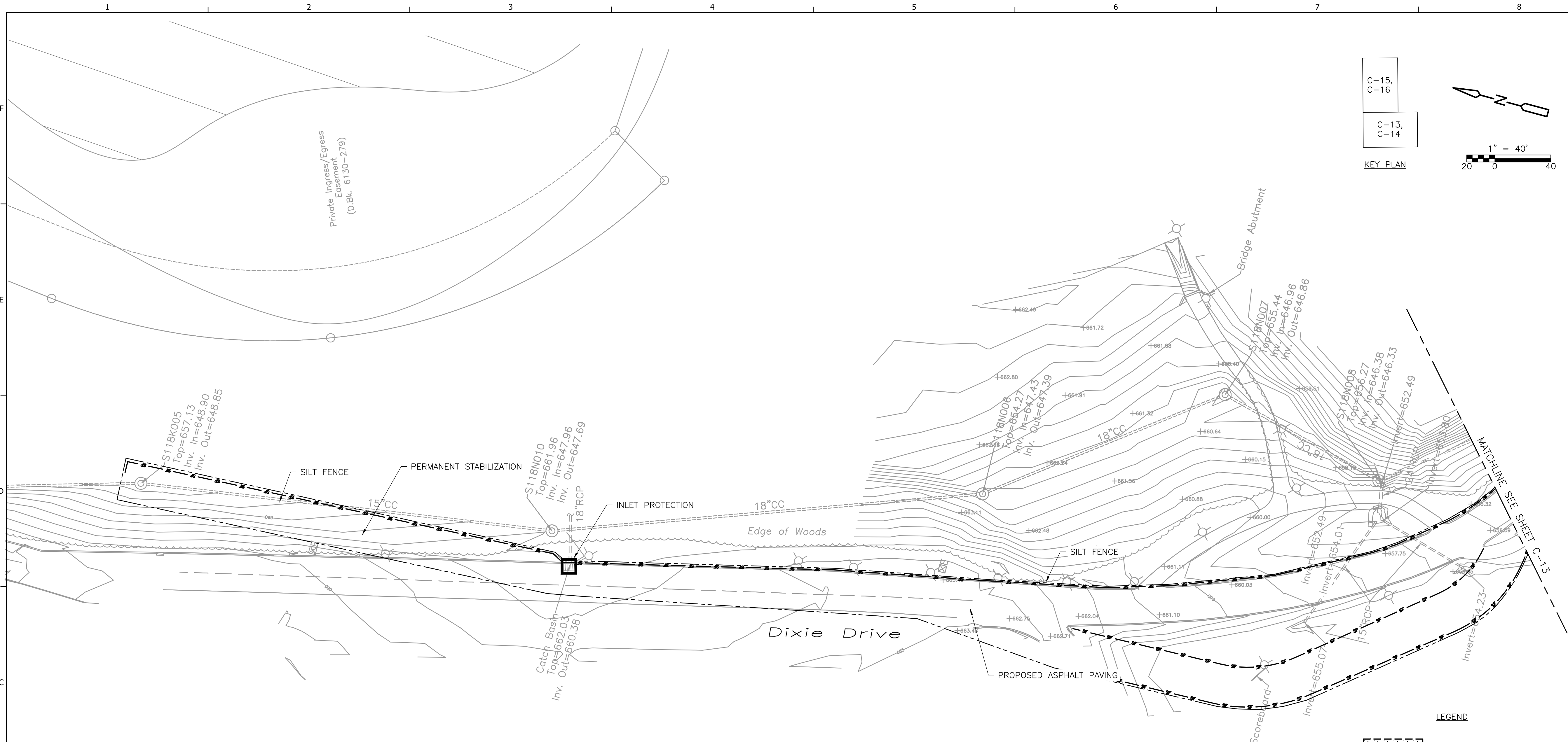


**DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM**

REV	DATE	REVISION DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE		
THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.		
PROJECT NO: 129699-109746		
DATE: NOVEMBER 2019		
DISC. LEAD: DU	DESIGNER: WB	CHECKER: CF/MT
SHEET TITLE CIVIL		
FINAL EROSION AND SEDIMENT CONTROL PLAN		
SHEET		C-14

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EROSION PREVENTION AND SEDIMENT CONTROL NOTES:

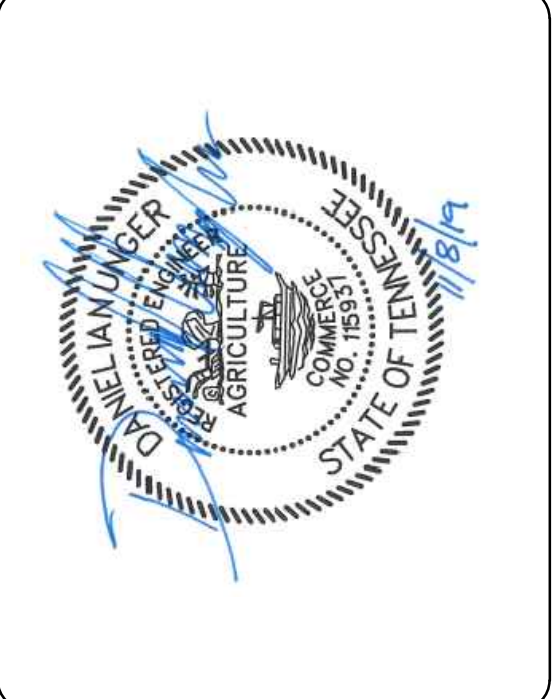
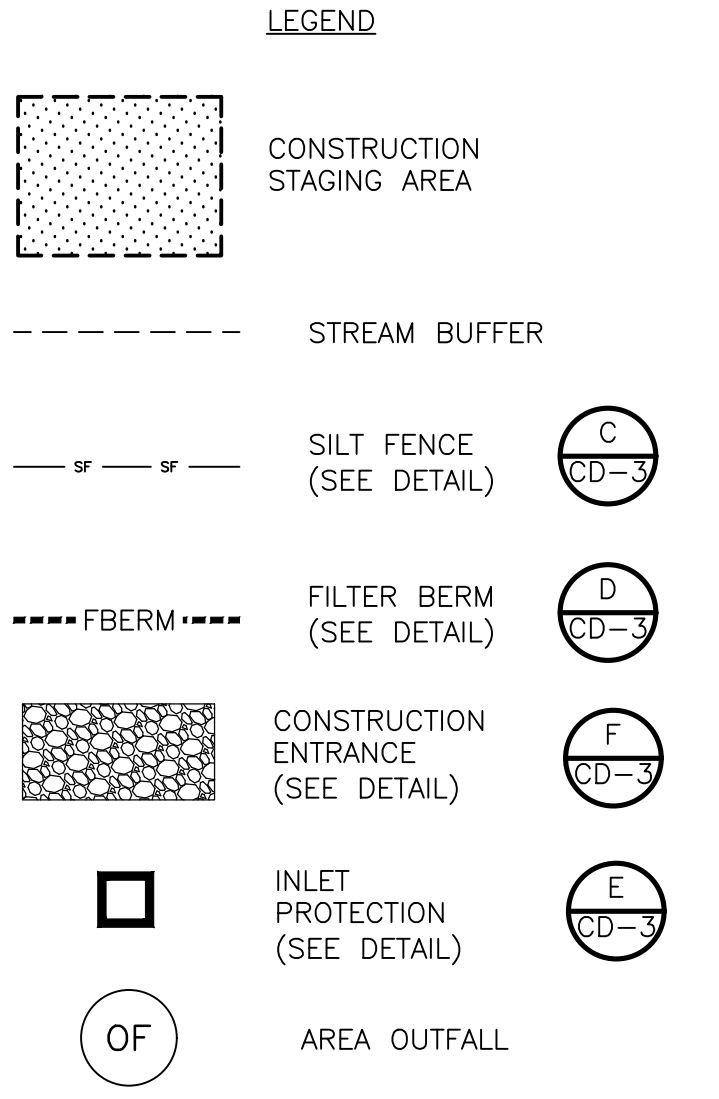
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THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTURBANCE OF VEGETATION EXCEPT AS PERMITTED IN WRITING BY THE CITY OF CHATTANOOGA'S SITE DEVELOPMENT MANAGER.



DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM

REV	DATE	REVISION DESCRIPTION

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PROJECT NO: 129699-109746

DATE: NOVEMBER 2019

DISC. LEAD:	DESIGNER:	CHECKER:
DU	WB	CF/MT

SHEET TITLE: CIVIL

FINAL EROSION AND SEDIMENT CONTROL PLAN

SHEET: C-16

CREATED: 11/11/2019 LAST SAVED: 11/11/2019 BY: BELEREW PLOT DATE: 11/11/2019 ©2018 CDM SMITH ALL RIGHTS RESERVED. REUSE OF DOCUMENTS, THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

NOTES

1. ALL MATERIALS, DESIGN, MANUFACTURE, PHYSICAL TEST REQUIREMENTS, FINISH, MARKING, INSPECTION, REJECTION, AND REPAIRS SHALL MEET A.S.T.M. C478 FOR PRECAST, REINFORCED CONCRETE MANHOLE RISERS AND TOPS EXCEPT AS MAY BE MODIFIED IN THESE SPECIFICATIONS.
2. SIZE AND LOCATE PIPE CUTOUTS AS REQUIRED.
3. MANHOLE STEPS - SEE MANHOLE STEPS DETAIL ON STANDARD NUMBER SD-301.04.
4. END-OF-LINE MANHOLES THAT HAVE FUTURE EXTENSIONS AND THAT ARE LOCATED IN PAVEMENT SHALL BE BACKFILLED WITH FLOWABLE FILL OR 33-P* STONE (PUG). THE BACKFILL SHALL BE COMPACTED TO 8-INCH LIFTS, AND SHALL EXTEND TEN (10) FEET FROM THE MANHOLE ALONG EACH TRENCH.
5. A MAXIMUM OF TWO CONCRETE RINGS MAY BE USED FOR ELEVATION ADJUSTMENT OF THE MANHOLE.
6. AN ECCENTRIC CONE MANHOLE SHALL NOT BE USED.

FRAME AND COVER AFTER PAVING

SPECIAL SHALLOW MANHOLE

CONCENTRIC CONE

ROOTED, TUR-BOTTOM MANHOLE

PRECAST CONCRETE MANHOLES

CITY OF CHATTANOOGA AND HAMILTON COUNTY
SANITARY/STORM MANHOLE (PRECAST)
 STANDARD NUMBER: SD-300.01

REVISIONS AS MARKED OR CLOUDED: 8/24/01 DATE OF ORIGINAL ISSUE: DECEMBER 10, 1999
 INITIAL ISSUE: 12/10/99
 REVISION: DATE

PRECAST MANHOLE
 DETAIL A
 NTS

INVERT SECTION

INVERT PLAN

NOTE
 H AND *T* DIMENSIONS APPLY AT BOTH THE UPSTREAM AND THE DOWNSTREAM EDGES OF MANHOLE. SEE TABLE 1.

INVERT DETAIL (WITH DROP LESS THAN 12")

INVERT DETAIL (WITH DROP OF 12" TO LESS THAN 24")

TABLE I

INSIDE DIAM. PIPE	VERTICAL TANGENT	HEIGHT OF INVERT
8"	2 1/2"	6 1/2"
10"	3"	8"
12"	3 1/2"	9 1/2"
15"	4 1/2"	12"
18"	5 1/2"	14 1/2"
21"	6 1/2"	17"
24"	7 1/2"	19 1/2"
30"	9"	24"
36"	11"	29"

TABLE II
 GOVERNING DIMENSIONS FOR MANHOLE INVERTS

PIPE SIZE	Δ° ANGLE	BASE DIAM.	R ⁴
8" THRU 12"	0° TO 90°	4'	1'-6"
15"	80° TO 90°	4'	1'-10"
18"	0° TO 60°	4'	2'-3"
18"	60° TO 90°	4'	1'-10"
21"	0° TO 60°	4'	2'-7"
21"	60° TO 90°	5'	2'-4"
24"	0° TO 45°	4'	3'-0"
24"	45° TO 90°	5'	2'-3"
30"	0° TO 60°	5'	3'-9"
30"	60° TO 90°	6'	2'-8"
36"	0° TO 30°	6'	4'-6"
LARGER THAN 36"	0° TO 90°	SEE PLANS	

CITY OF CHATTANOOGA AND HAMILTON COUNTY
SANITARY/STORM MANHOLE DETAILS
 STANDARD NUMBER: SD-301.01

REVISIONS AS MARKED OR CLOUDED: 8/24/01 DATE OF ORIGINAL ISSUE: DECEMBER 10, 1999
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MANHOLE DETAIL
 DETAIL B
 NTS

JOINT AND GASKET FOR PRECAST MANHOLE SECTIONS

OPEN JOINT

CLOSED JOINT

NOTES

1. CLEAN ALL DEBRIS FROM JOINTS PRIOR TO GASKET APPLICATION.
2. TRIM PROTRUDING GASKET INSIDE AND OUTSIDE.

CITY OF CHATTANOOGA AND HAMILTON COUNTY
SANITARY/STORM MANHOLE DETAILS
 STANDARD NUMBER: SD-301.04

REVISIONS AS MARKED OR CLOUDED: 8/24/01 DATE OF ORIGINAL ISSUE: DECEMBER 10, 1999
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MANHOLE GASKET
 DETAIL C
 NTS

AIR RELEASE VALVE (SANITARY FORCE MAIN)

SECTION STANDARD FRAME AND COVER

SECTION WATER-TIGHT FRAME AND COVER

MANHOLE FRAME AND COVER

NOTES

1. AIR RELEASE VALVE IS TO BE "CRISPIN SEWER VALVE", APOD 400 SEWER VALVE, OR EQUAL.
2. AIR-VACUUM VALVE INSTALLATION IS TO BE SIMILAR EXCEPT THAT THE VALVE IS TO BE APOD 402 SEWER VALVE, OR EQUAL.
3. 2" RELEASE LINE, GATE VALVE, AND CHECK VALVE ON AIR-VACUUM VALVE ONLY.

PLAN - FRAME AND COVER

PLAN - FRAME AND COVER

NOTES

1. THE MANUFACTURER SHALL CERTIFY THE TRAFFIC BEARING CAPACITY OF FRAMES AND COVERS.
2. MANHOLES IN PAVED AREAS MAY NOT REQUIRE ANCHOR BOLTS.
3. BEARING SURFACES BETWEEN COVER AND FRAME SHALL BE MACHINED TO PREVENT ROCKING.

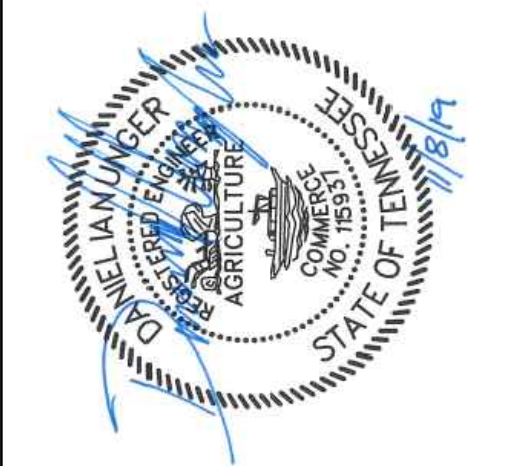
MANHOLE FRAME AND COVER

CITY OF CHATTANOOGA AND HAMILTON COUNTY
SANITARY/STORM MANHOLE DETAILS
 STANDARD NUMBER: SD-301.03

REVISIONS AS MARKED OR CLOUDED: 8/24/01 DATE OF ORIGINAL ISSUE: DECEMBER 10, 1999
 INITIAL ISSUE: 12/10/99
 REVISION: DATE

MANHOLE FRAME AND COVER
 DETAIL D
 NTS

CDM Smith
 CDM Smith Inc.
 651 East 4th Street Suite 100
 Chattanooga, TN 37403
 Tel: (423) 771-4495



DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM



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PROJECT NO: 129699-109746

DATE: NOVEMBER 2019

DISC. LEAD: DU DESIGNER: VF CHECKER: CF/MT

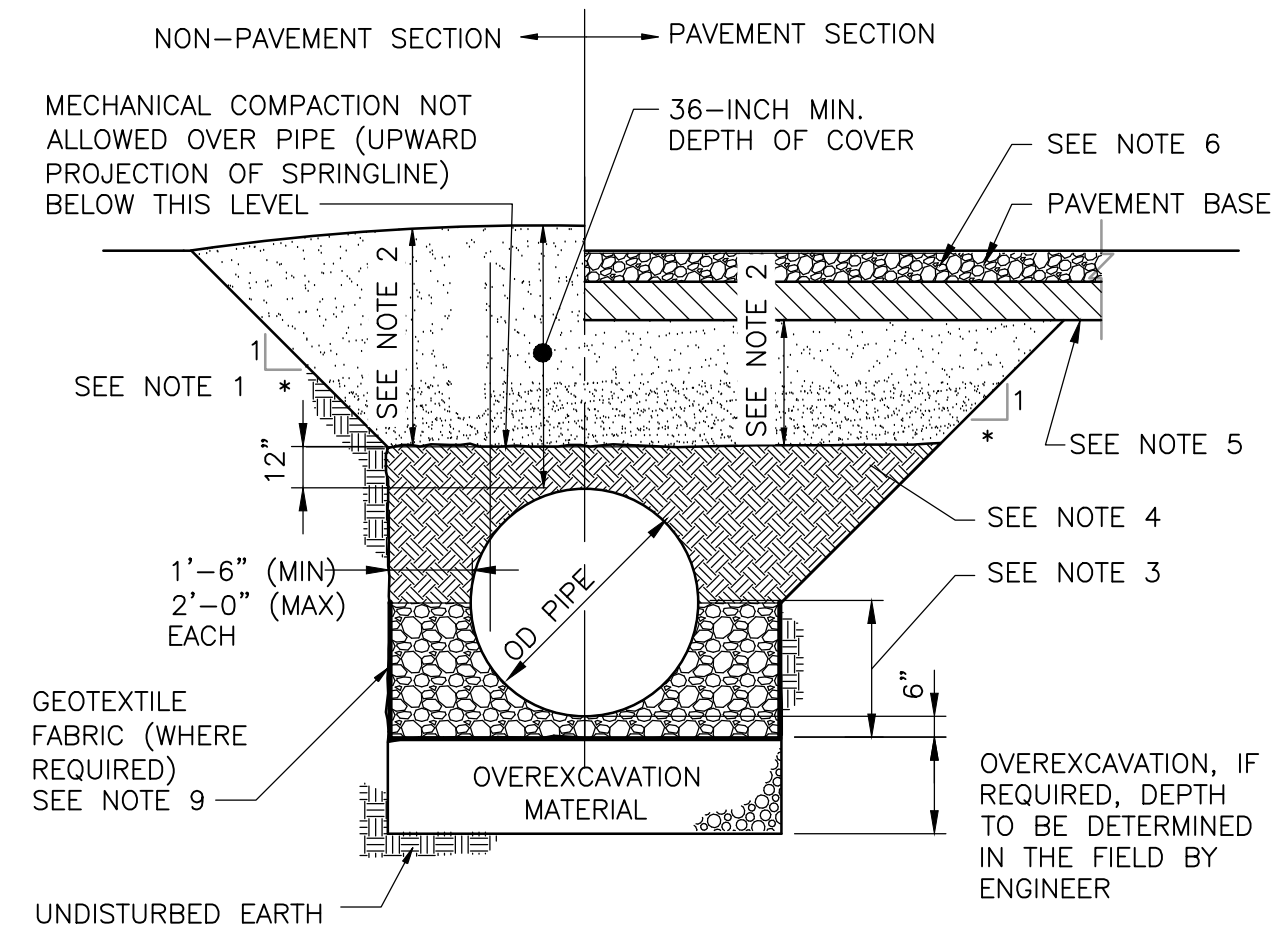
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CIVIL DETAILS

SHEET: CD-1

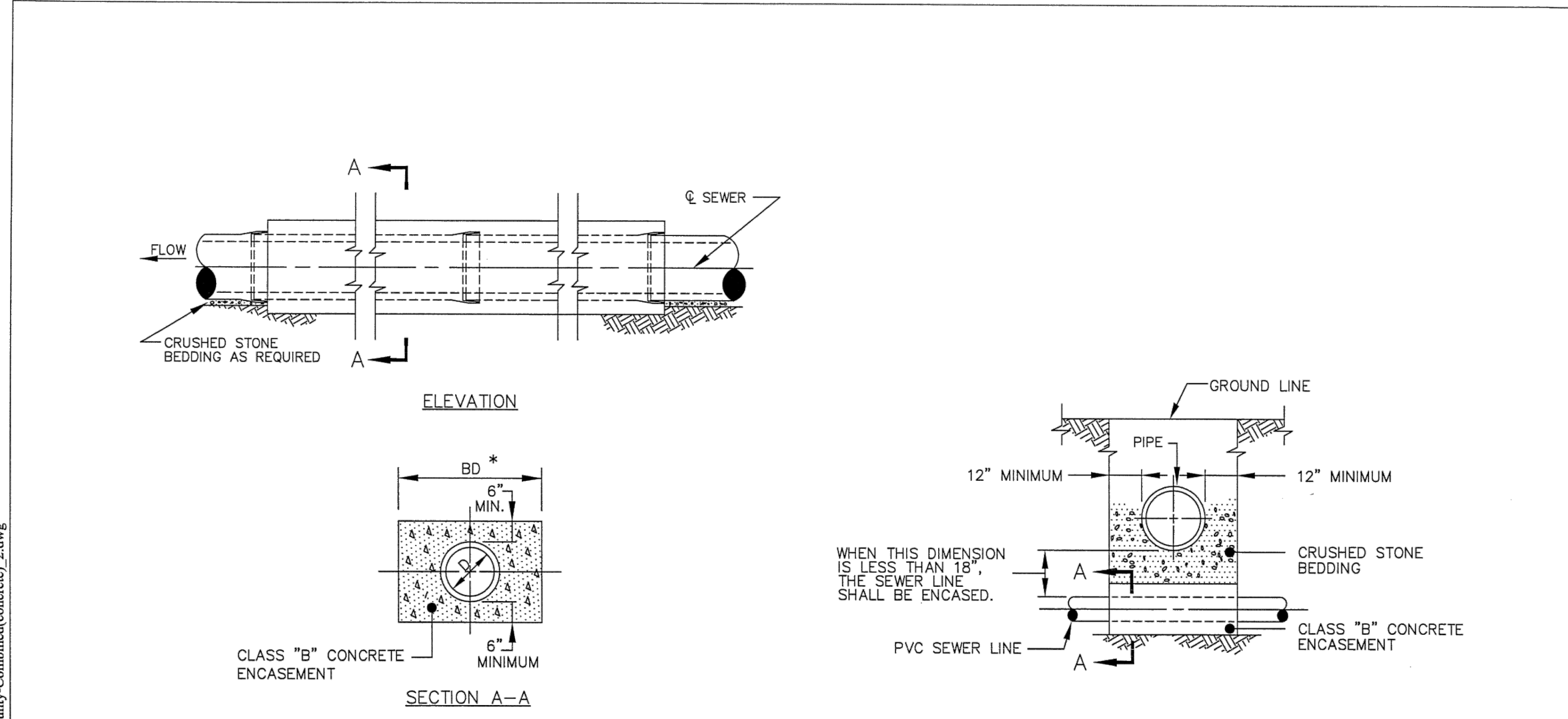
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- NOTES:**
1. CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS.
 2. SELECT COMMON SOIL OR COMMON SOIL AS REQUIRED PER SPECIFICATIONS.
 3. #57 GRANULAR FILL PIPE BEDDING.
 4. SELECT COMMON SOILS PER SPECIFICATIONS. MAXIMUM 6" LIFTS.
 5. B25.0B BASE COURSE ASPHALT, THICKNESS AS SPECIFIED.
 6. S9.5B SURFACE COURSE ASPHALT, THICKNESS AS SPECIFIED.
 7. SHEETING, WHERE SPECIFIED, TO BE DRIVEN BELOW THE UTILITY INVERT IF REQUIRED FOR LATERAL SUPPORT OR UNSUITABLE MATERIAL REMOVAL. WHERE DRIVEN BELOW PIPE INVERT, SHEETING WILL BE CUT OFF A MIN OF 12" ABOVE TOP OF PIPE OR HIGHER, AS AUTHORIZED BY THE ENGINEER AND LEFT IN PLACE. IN NO CASE WILL SHEETING LEFT IN PLACE EXTEND HIGHER THAN 18" BELOW SURFACE GRADE UNLESS SPECIFICALLY APPROVED. BRACING TO BE PROVIDED AS REQUIRED.
 8. TRENCH BOX/SHIELD MAY BE USED UNLESS OTHERWISE SPECIFIED. BOTTOM OF TRENCH BOX TO EXTEND NO LOWER THAN SPRING LINE OF PIPE.
 9. IN AREAS WHERE PIPE BEDDING IS PLACED BELOW THE PRE-CONSTRUCTION GROUNDWATER LEVEL AND OVER OR AGAINST SOILS, A GEOTEXTILE SHALL BE PLACED BETWEEN THE SOILS AND THE STONE PIPE BEDDING.

TRENCH BACKFILL
DETAIL A
NTS

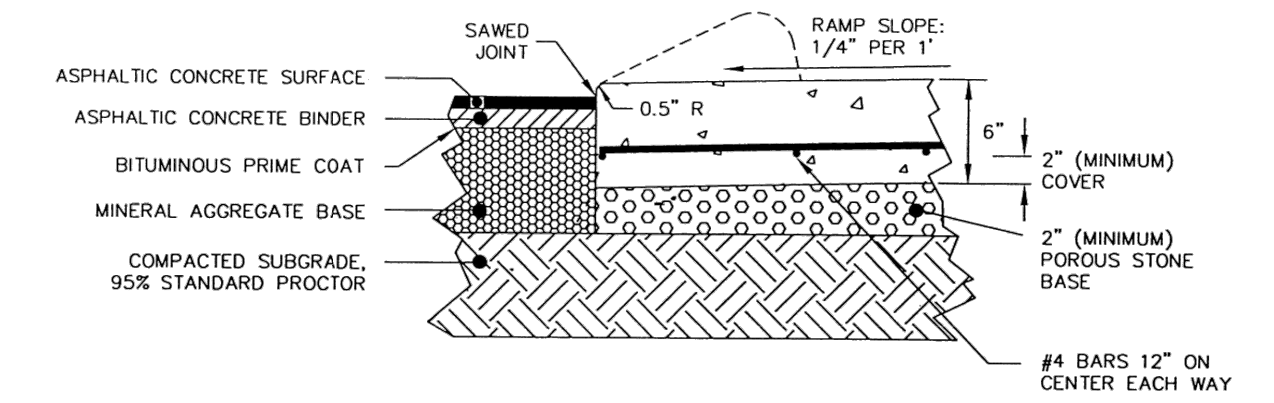


CITY OF CHATTANOOGA AND HAMILTON COUNTY
TRENCH DETAILS (CONCRETE PROTECTION)

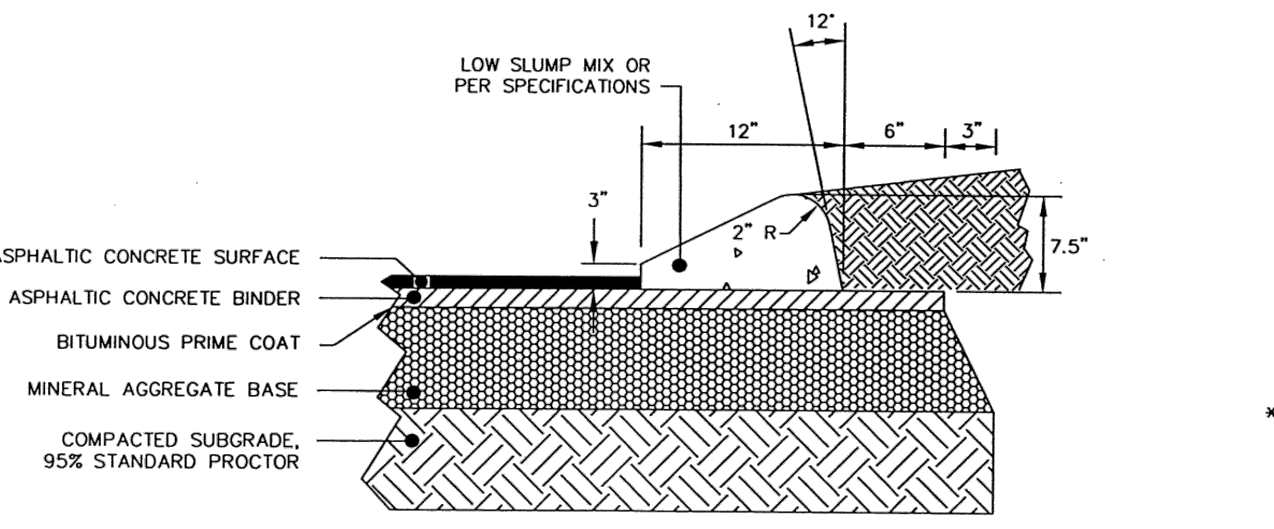
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1	DELETED TABLE	8/24/01	
2	INITIAL ISSUE	12/10/99	DECEMBER 10, 1999
3	REVISION		

STANDARD NUMBER: SD-308.02

CONCRETE ENCASEMENT
DETAIL B
NTS



RESIDENTIAL, MOUNTABLE,
CONCRETE RAMP DETAIL



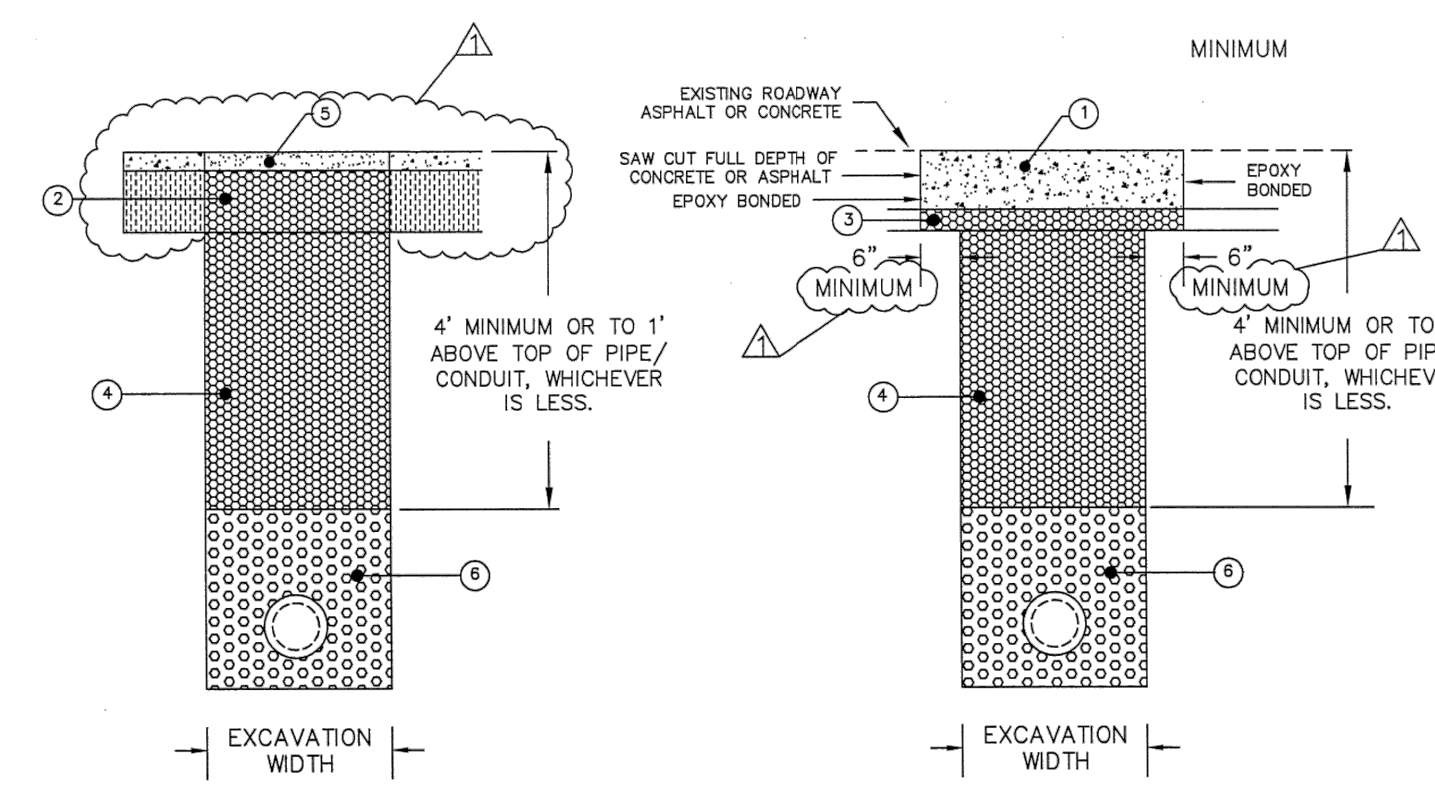
RESIDENTIAL, MOUNTABLE, EXTRUDED
CONCRETE CURB DETAIL

CITY OF CHATTANOOGA AND HAMILTON COUNTY
CONCRETE CURB (RESIDENTIAL)

NO.	DESCRIPTION	DATE	DATE OF ORIGINAL ISSUE
0	INITIAL ISSUE	12/10/99	DECEMBER 10, 1999
1	REVISION		

STANDARD NUMBER: SD-203.02

CONCRETE CURB
DETAIL C
NTS

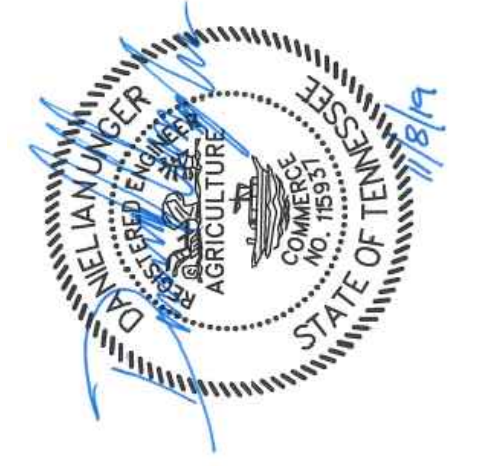


CITY OF CHATTANOOGA AND HAMILTON COUNTY
REPAIR DETAILS (ROADWAY)

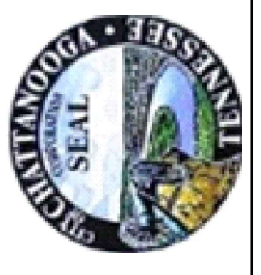
NO.	DESCRIPTION	DATE	DATE OF ORIGINAL ISSUE
1	REVISIONS AS MARKED OR CLOUDED	8/24/01	
2	INITIAL ISSUE	12/10/99	DECEMBER 10, 1999
3	REVISION		

STANDARD NUMBER: SD-700.01

ROADWAY REPAIR
DETAIL D
NTS



DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM



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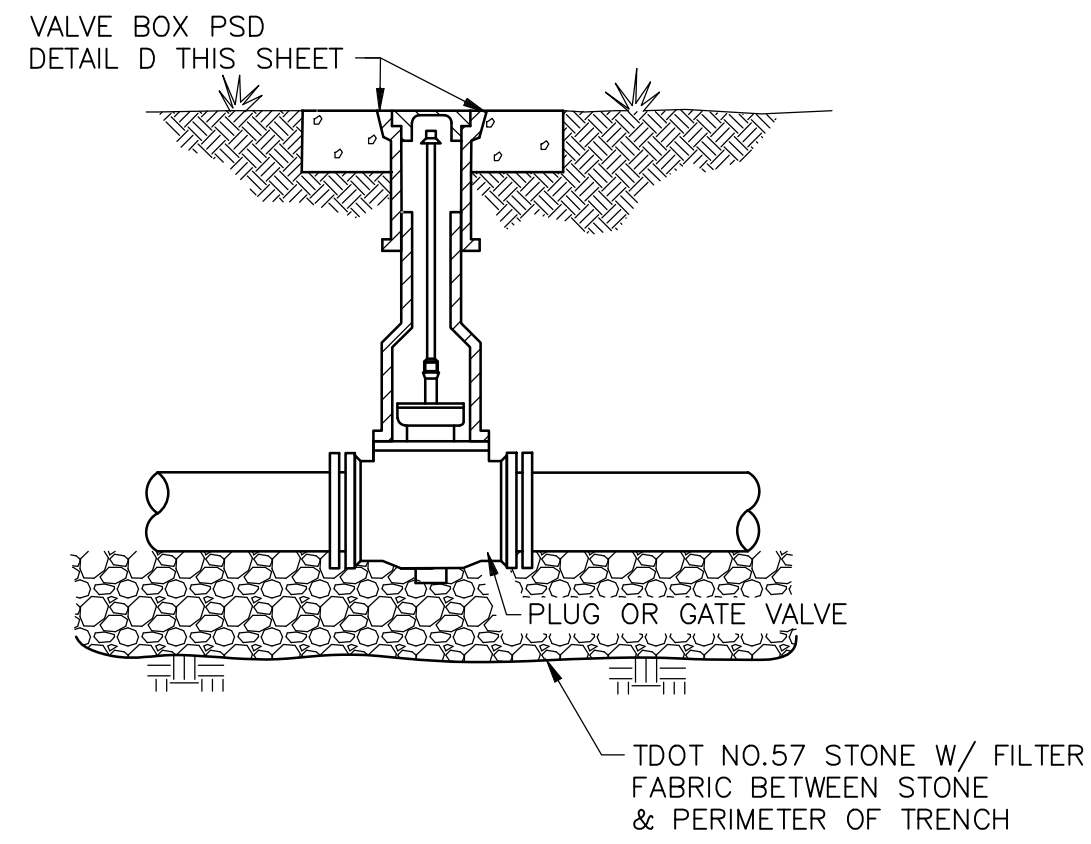
PROJECT NO: 129699-109746
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DISC. LEAD: DU DESIGNER: VF CHECKER: CF/MT

SHEET TITLE: CIVIL
CIVIL DETAILS

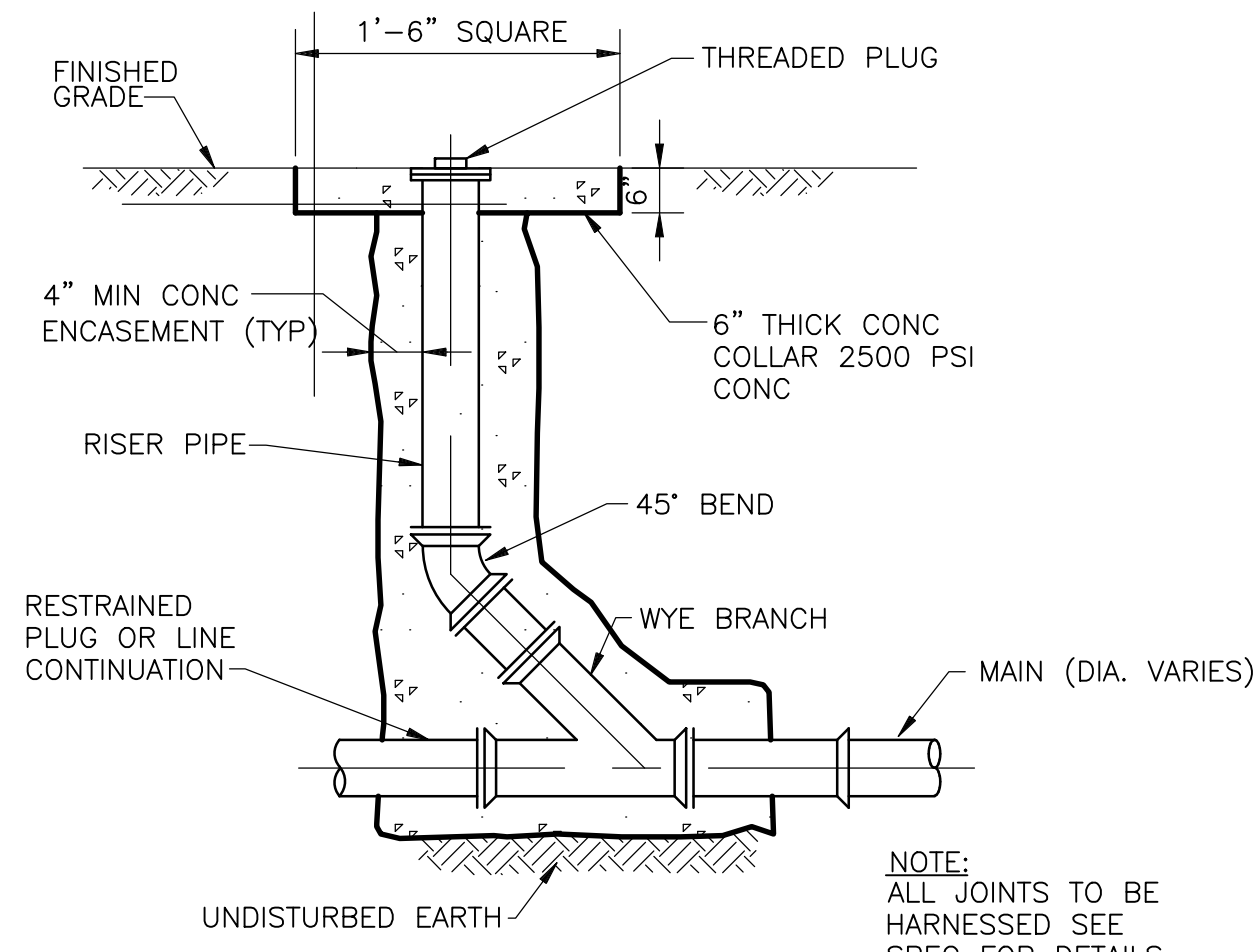
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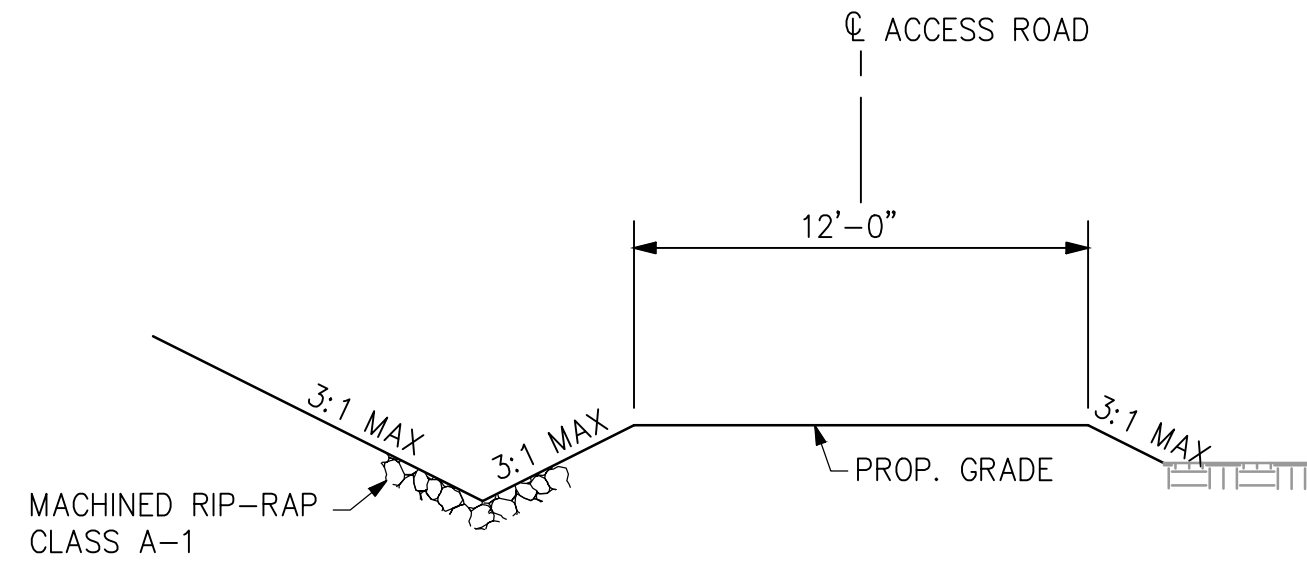
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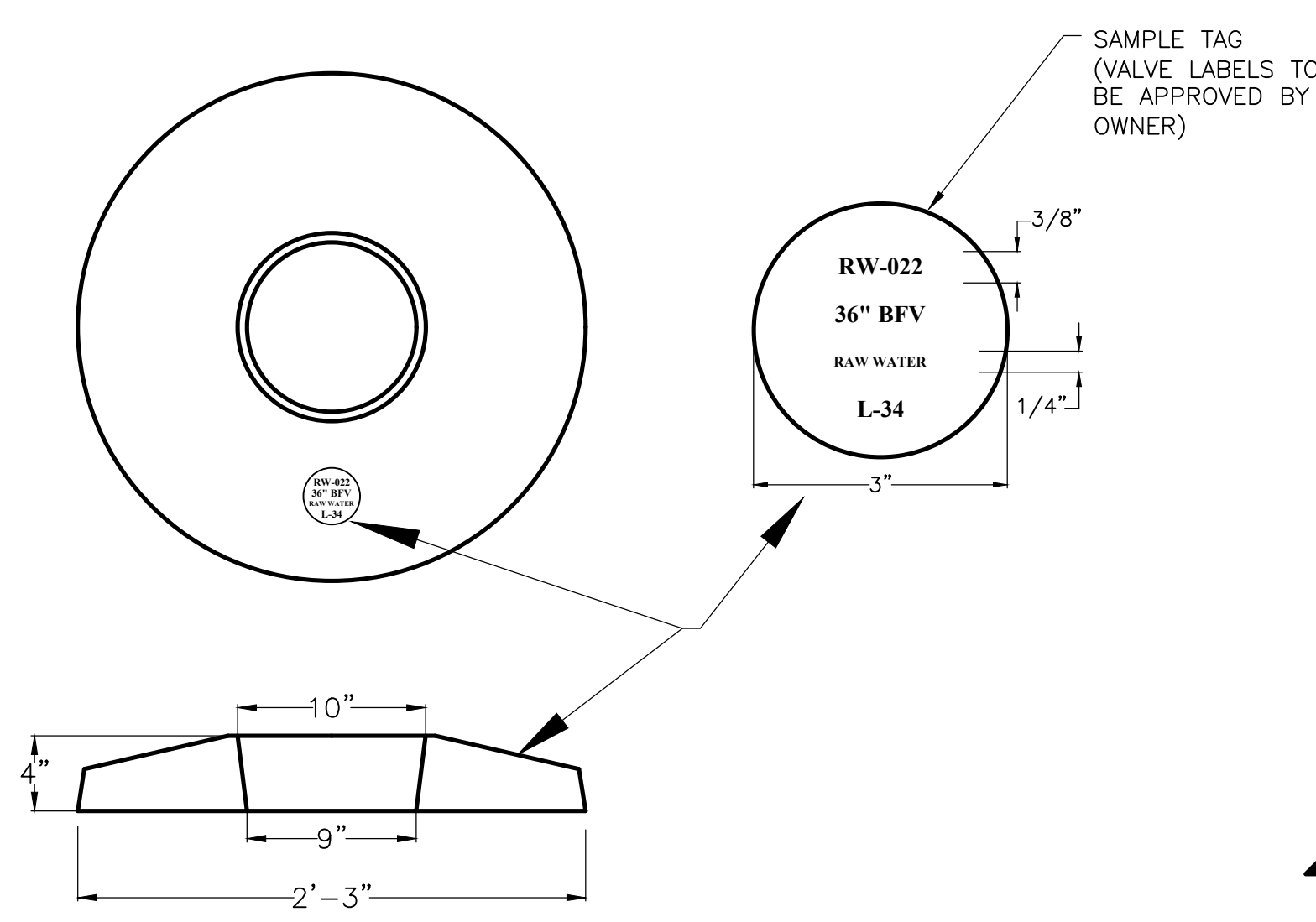
TYPICAL VALVE INSTALLATION
 DETAIL A
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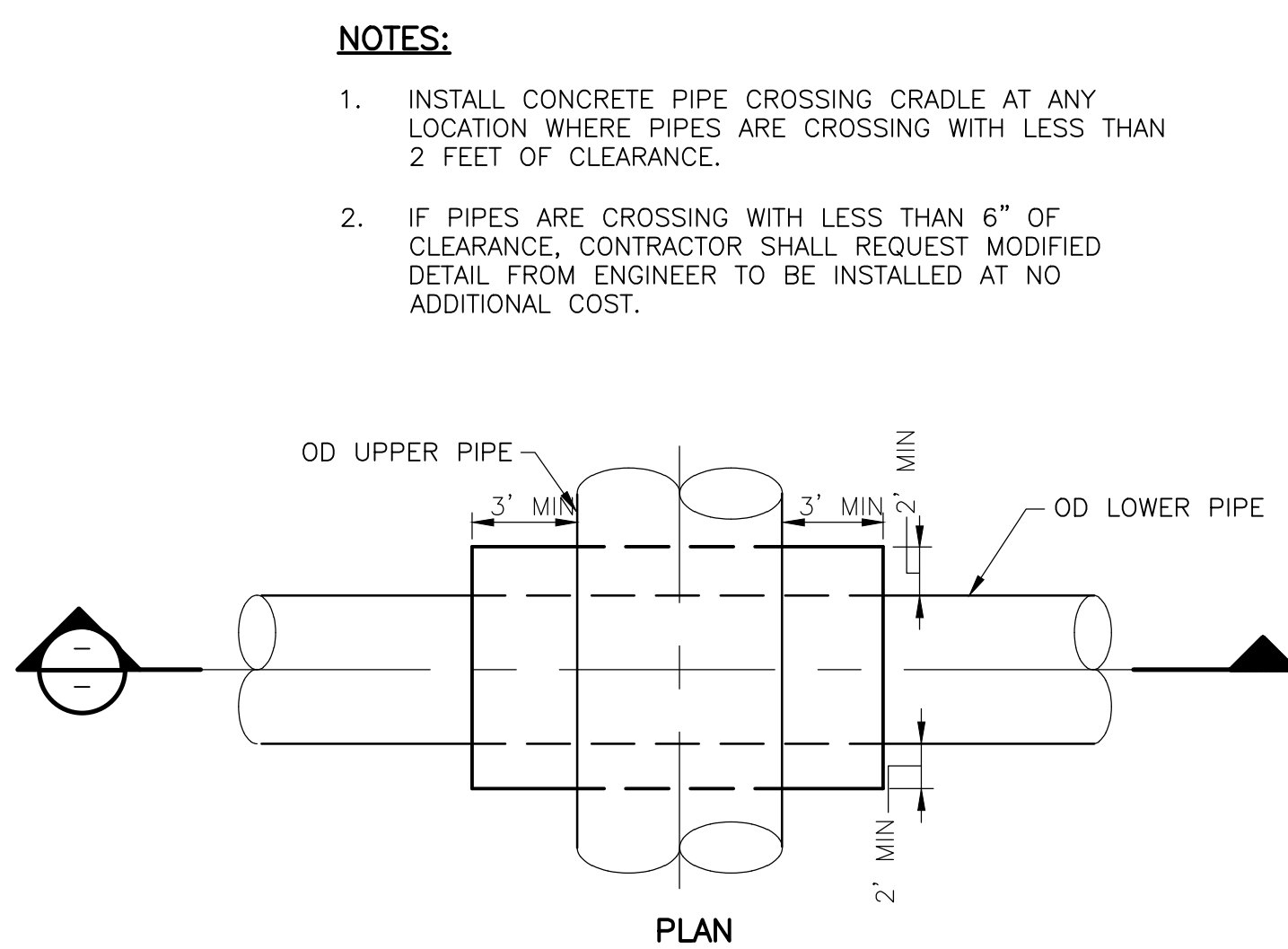
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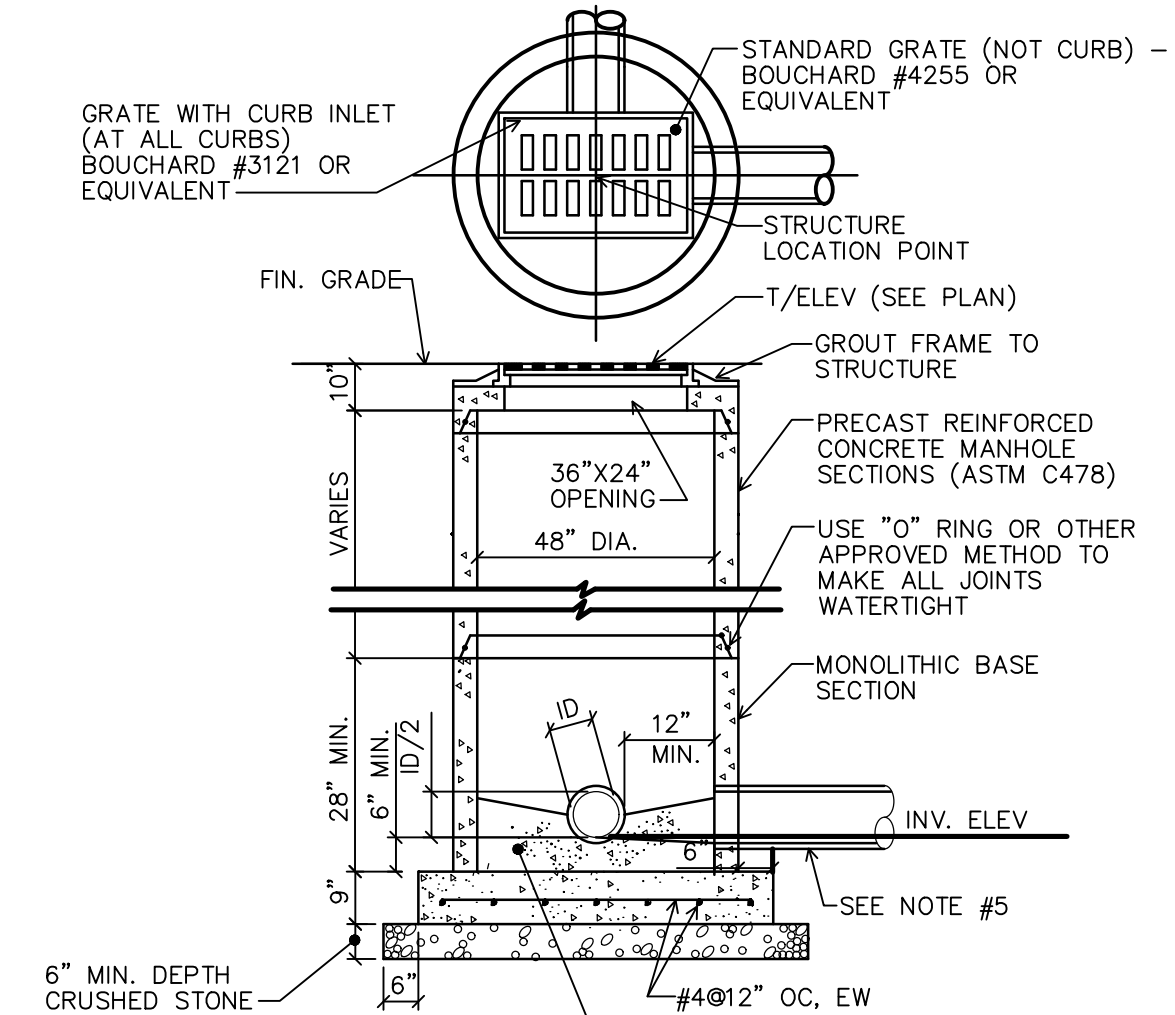
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 DETAIL C
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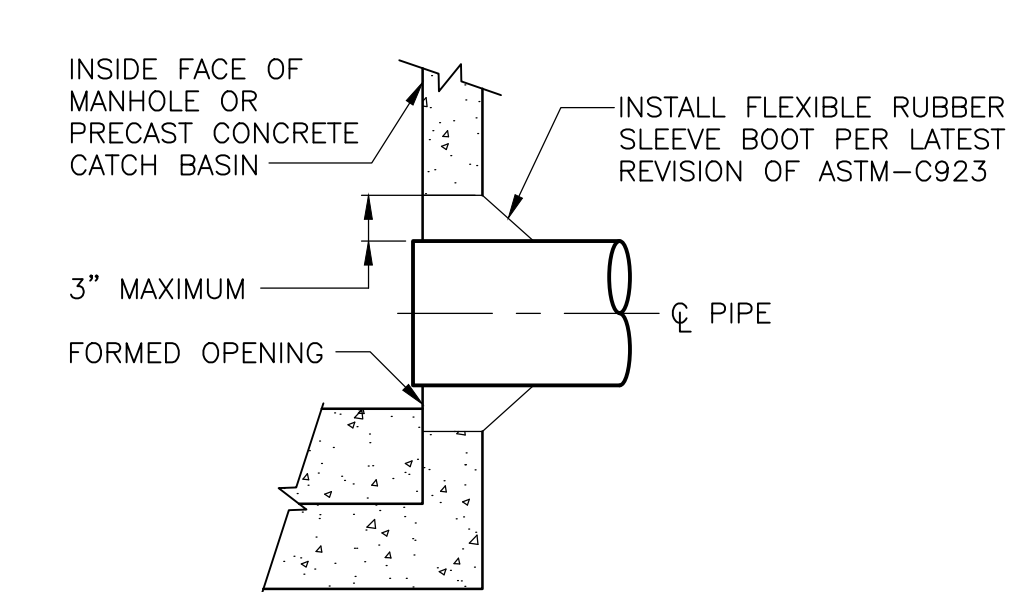
VALVE BOX PAD
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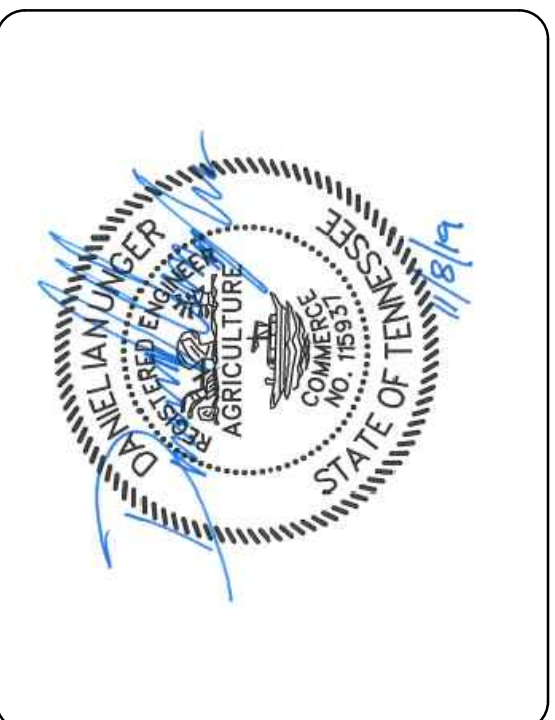
CONCRETE PIPE CROSSING CRADLE
 DETAIL E
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PRECAST CONCRETE CATCH BASIN
 DETAIL G
 NTS



MANHOLE PIPE CONNECTION
 DETAIL F
 NTS

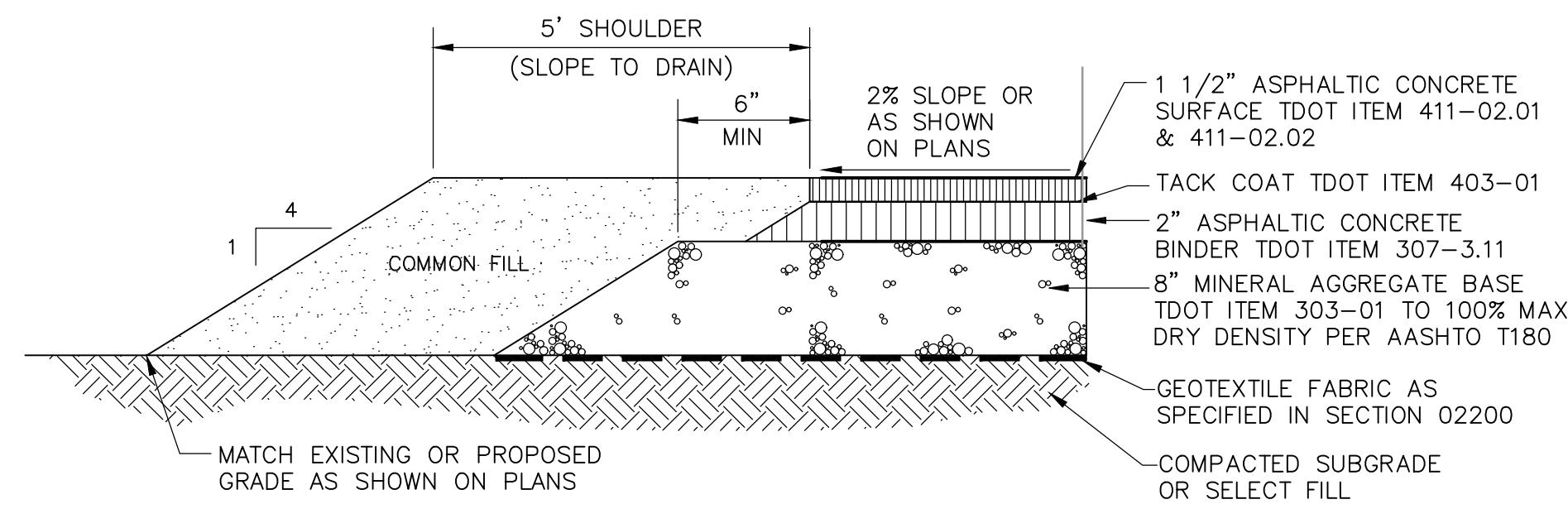


DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

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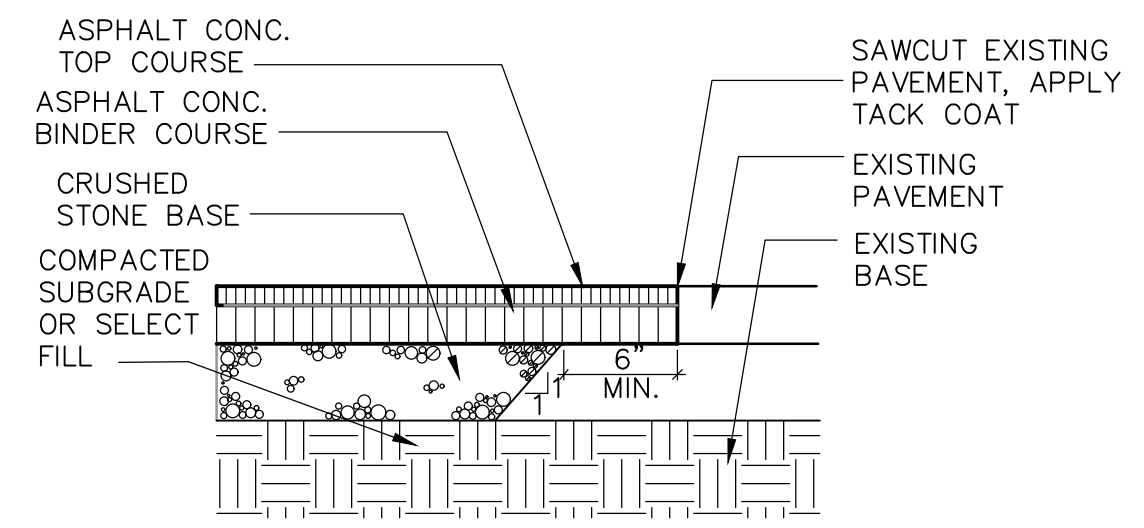
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PROJECT NO: 129699-109746		
DATE: NOVEMBER 2019		
DISC. LEAD:	DESIGNER:	CHECKER:
DU	VF	CF/MT
SHEET TITLE CIVIL		
CIVIL DETAILS		
SHEET CD-4		

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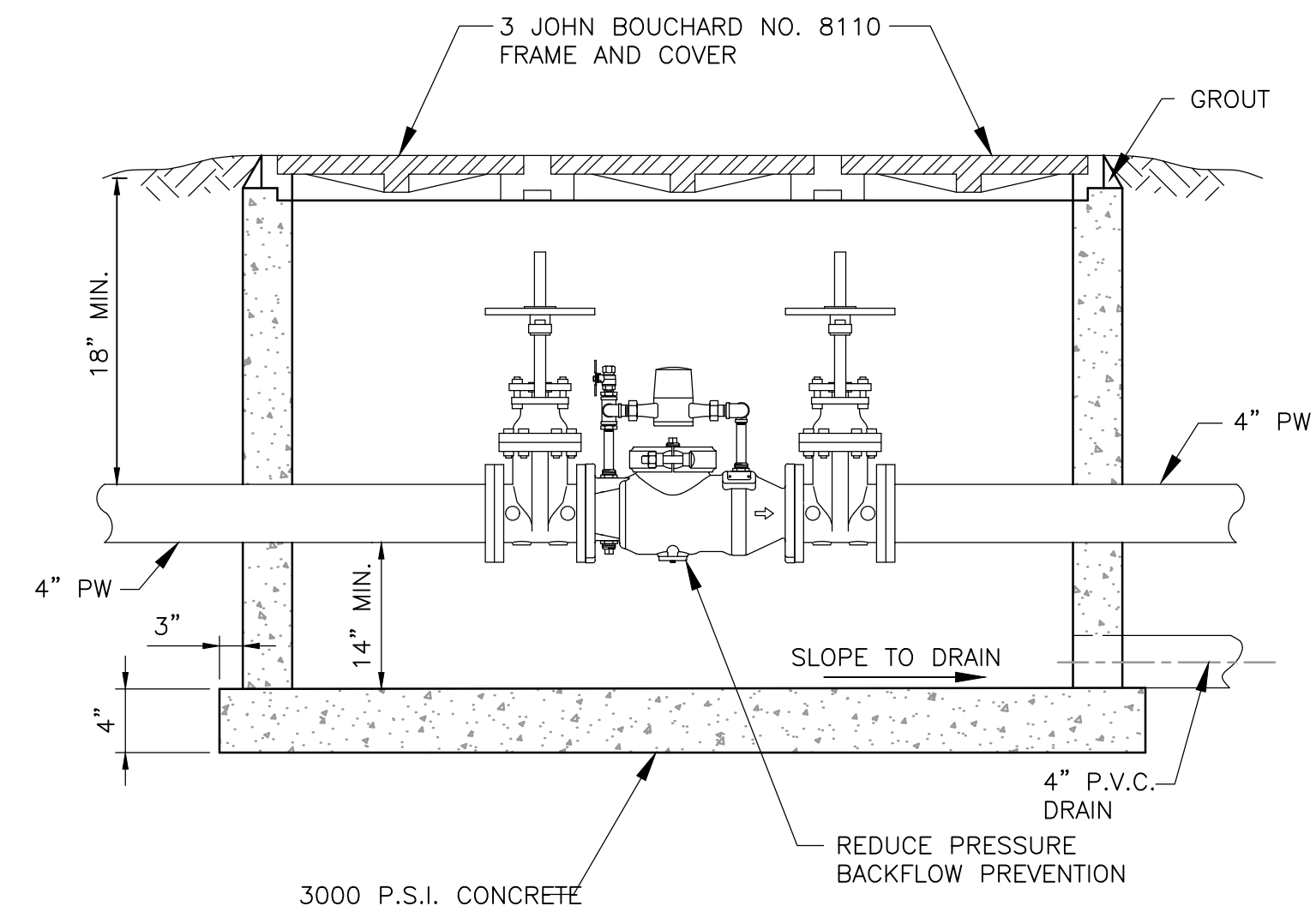


- NOTES:**
1. ASPHALT CONCRETE PAVEMENT MATERIALS AND INSTALLATION SHALL CONFORM TO TDOT STANDARDS-LATEST EDITION.
 2. INSTALL CURB AND GUTTER WHERE SHOWN ON PLANS.
 3. LOAM, SEED, AND MULCH SHOULDER AS REQUIRED IN SPECS.

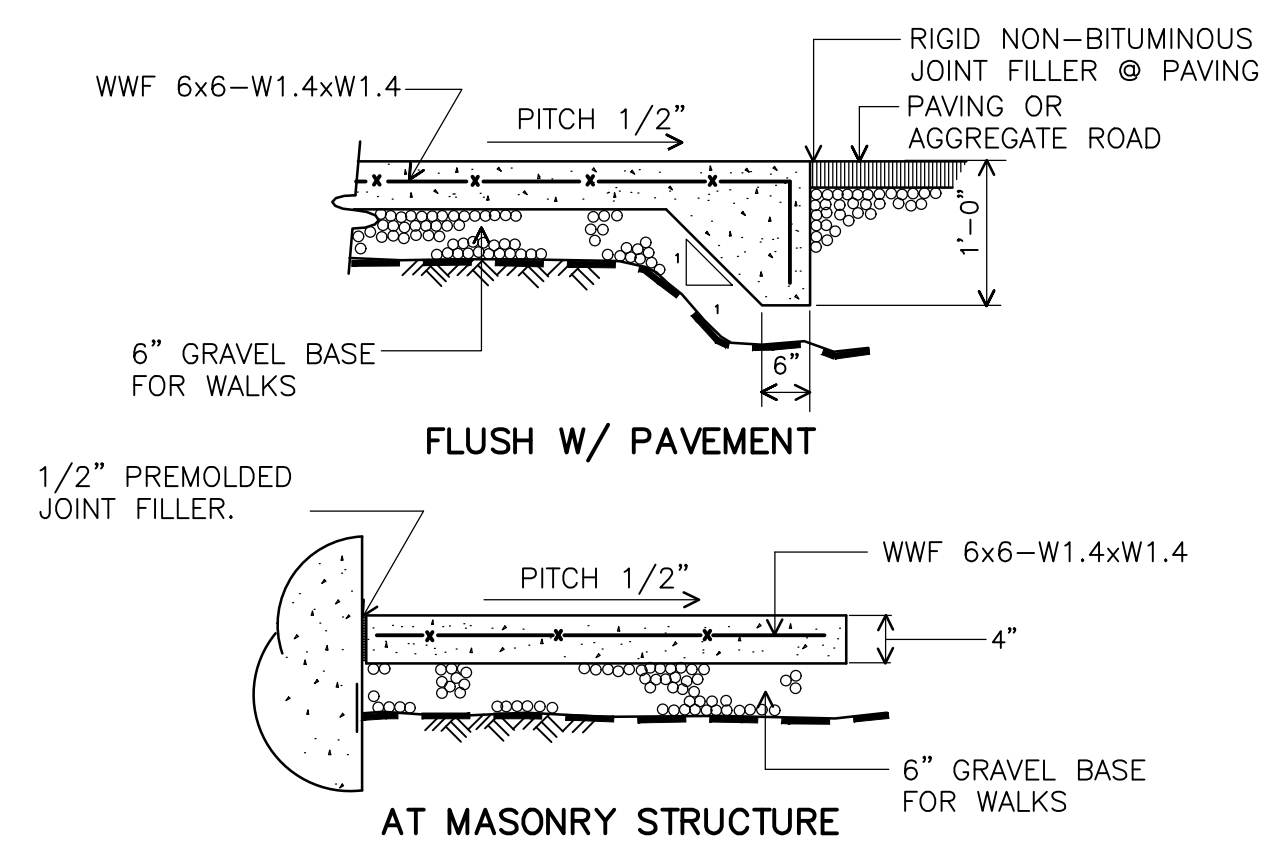
**ASPHALT PAVEMENT
DETAIL A**
NTS



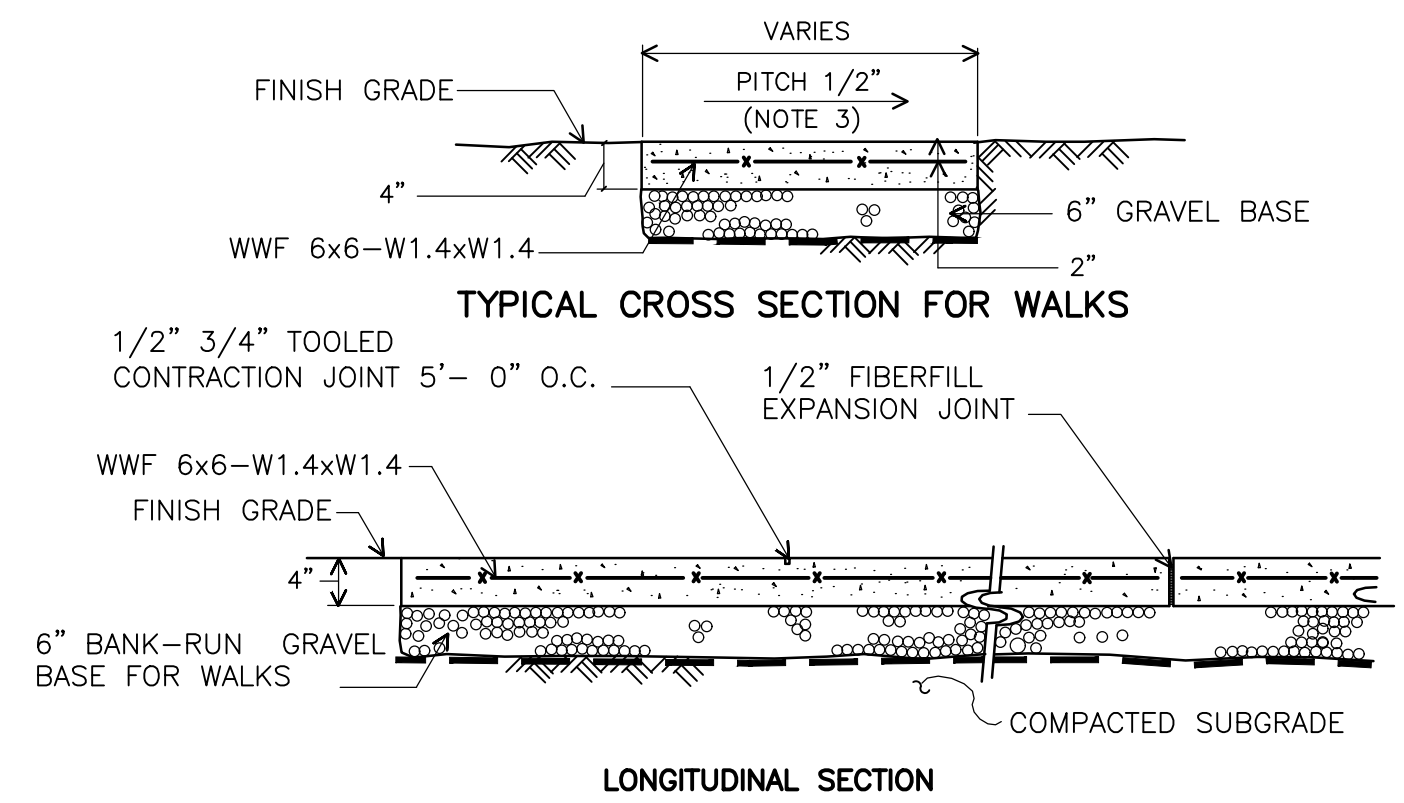
**PAVEMENT MATCH
DETAIL B**
NTS



**BACKFLOW PREVENTER AND VAULT
DETAIL C**
NTS



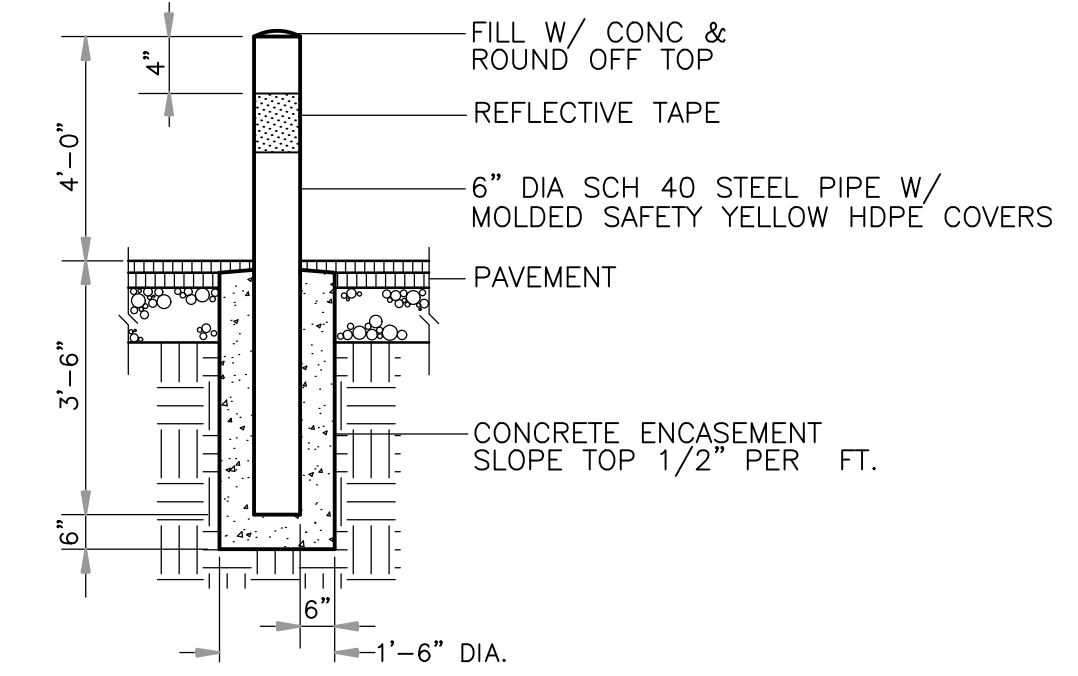
**FLUSH W/ PAVEMENT
AT MASONRY STRUCTURE**



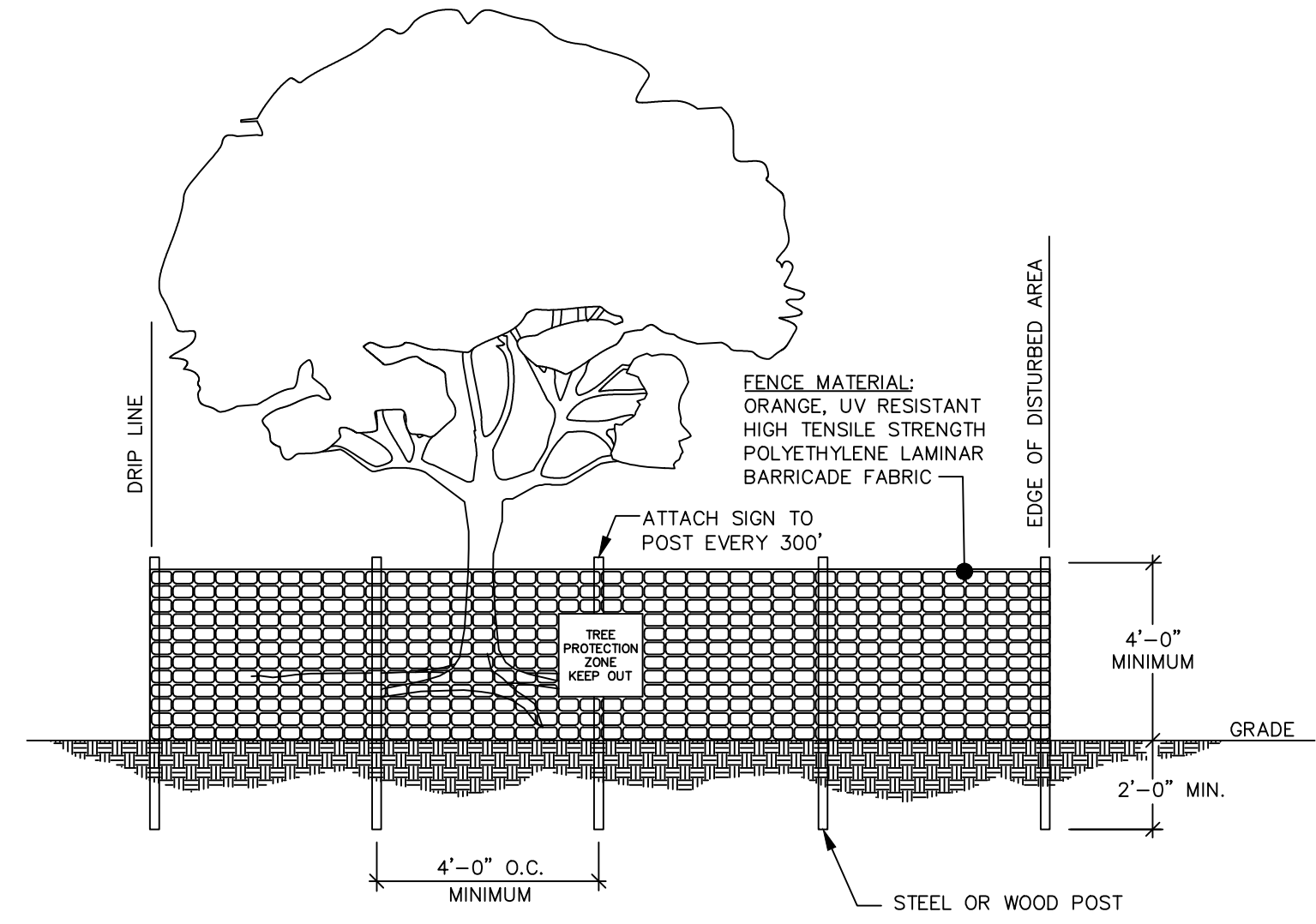
**TYPICAL CROSS SECTION FOR WALKS
LONGITUDINAL SECTION**

- NOTES:**
1. SURFACE OF PAVING TO BE BROOM FINISHED.
 2. FINISH SURFACE SHALL BE SLOPED FOR POSITIVE DRAINAGE AND SHALL SLOPE AWAY FROM STRUCTURES.
 3. EXPANSION JOINTS FOR WALKS SHALL NOT EXCEED 30' O.C. AND SHALL BE PLACED AT ALL BUILDING ABUTMENTS. CONTRACTION JOINTS SHALL NOT EXCEED 5' O.C.
 4. GRAVEL BASE SHALL BE UNDERLAIN BY GEOTEXTILE FABRIC AS SPECIFIED IN SECTION 31 23 33.
 5. SIDEWALKS SHALL BE 6' WIDE UNLESS OTHERWISE MARKED. SIDEWALK ACCESS TO BUILDINGS SHALL BE 2' WIDER THAN DOOR OPENING.

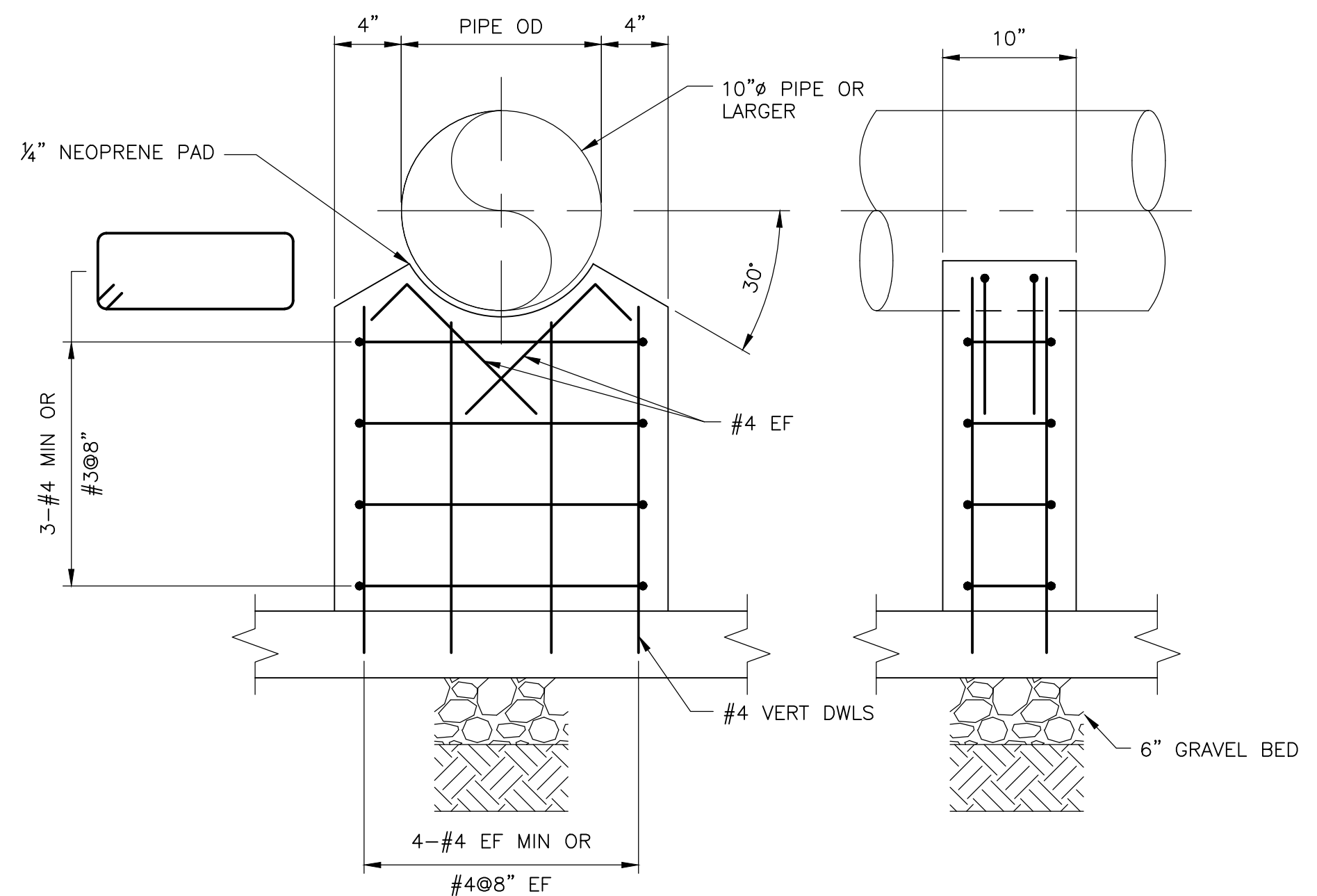
**CONCRETE SIDEWALK
DETAIL E**
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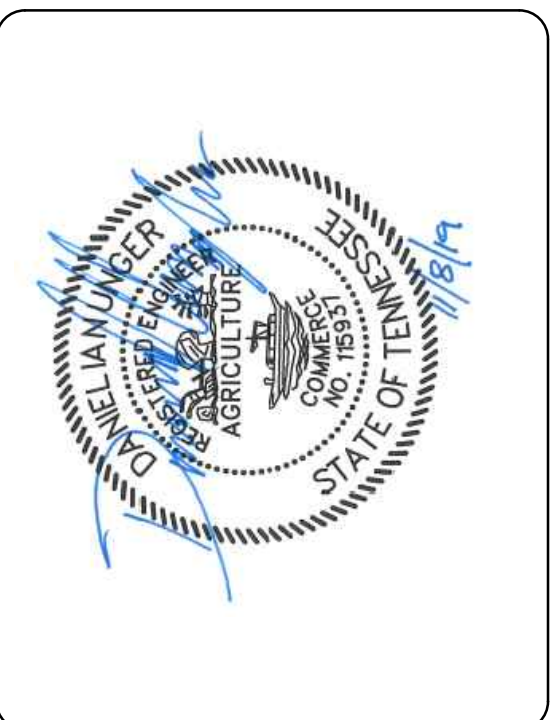
**STEEL BOLLARD
DETAIL F**
NTS



**TREE PROTECTION FENCE
DETAIL G**
NTS



**CONCRETE PEDESTAL PIPE SUPPORT
DETAIL D**
NTS



**DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A**
**CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM**



REV	DATE	REVISION DESCRIPTION

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PROJECT NO: 129699-109746
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SHEET TITLE: CIVIL
CIVIL DETAILS
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 PLOT DATE: 11/11/2019
 BY: BEELEREW
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 CREATED: 11/11/2019

SEEDING NOTES:

APPLY LIME AND FERTILIZER EVENLY AND INCORPORATE INTO THE TOP 4 TO 6 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. OPERATE MACHINERY ON THE CONTOUR. WHEN USING A HYDROSEEDER, APPLY LIME AND FERTILIZER TO A ROUGH, LOOSE SURFACE. COMPLETE SEEDBED PREPARATION BY BREAKING UP LARGE CLODS AND RAKING INTO A SMOOTH, UNIFORM SURFACE (SLOPES LESS THAN 3H:1V). FILL IN OR LEVEL DEPRESSIONS THAT CAN COLLECT WATER. BROADCAST SEED INTO A FRESHLY LOOSENEED SEEDBED THAT HAS NOT BEEN SEALED BY RAINFALL.

> SEEDING:
 SEEDING DATES GIVEN IN THE SEEDING MIXTURE SPECIFICATIONS ARE DESIGNATED AS "BEST" OR "POSSIBLE". SEEDINGS PROPERLY CARRIED OUT WITHIN THE "BEST" DATES HAVE A HIGH PROBABILITY OF SUCCESS. IT IS ALSO POSSIBLE TO HAVE SATISFACTORY ESTABLISHMENT WHEN SEEDING OUTSIDE THESE DATES. HOWEVER, AS YOU DEVIATE FROM THEM, THE PROBABILITY OF FAILURE INCREASES RAPIDLY. SEEDING ON THE LAST DATE SHOWN UNDER "POSSIBLE" MAY REDUCE CHANCES OF SUCCESS BY 30 TO 50 PERCENT. ALWAYS TAKE THIS INTO ACCOUNT IN SCHEDULING LAND-DISTURBING ACTIVITIES.

USE CERTIFIED SEED FOR PERMANENT SEEDING WHENEVER POSSIBLE.
 LABELING OF NON-CERTIFIED SEED IS ALSO REQUIRED BY LAW. LABELS CONTAIN IMPORTANT INFORMATION ON SEED PURITY, GERMINATION, AND PRESENCE OF WOOD SEEDS. SEEDS MUST MEET STATE STANDARDS FOR CONTENT OF NOXIOUS WEEDS. DO NOT ACCEPT SEED CONTAINING "PROHIBITED" NOXIOUS WEED SEED.

INOCULATE LEGUME SEED WITH THE RHIZOBIUM BACTERIA APPROPRIATE TO THE SPECIES OF LEGUME.
 APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DROP-TYPE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE SEEDBED.

WHEN USING A DRILL OR CULTIPACKER SEEDER, PLANT SMALL GRAINS NO MORE THAN 1 INCH DEEP, GRASSES AND LEGUMES NO MORE THAN 1/2 INCH. EQUIPMENT SHOULD BE CALIBRATED IN THE FIELD FOR THE DESIRED SEEDING RATE.

WHEN USING BROADCAST-SEEDING METHODS, SUBDIVIDE THE AREA INTO WORKABLE SECTIONS AND DETERMINE THE AMOUNT OF SEED NEEDED FOR EACH SECTION. APPLY ONE-HALF THE SEED WHILE MOVING BACK AND FORTH ACROSS THE AREA, MAKING A UNIFORM PATTERN; THEN APPLY THE SECOND HALF IN THE SAME WAY, BUT MOVING AT RIGHT ANGLES TO THE FIRST PASS.

MULCH ALL PLANTINGS IMMEDIATELY AFTER SEEDING.

> HYDROSEEDING:
 SURFACE ROUGHENING IS PARTICULARLY IMPORTANT WHEN HYDROSEEDING, AS A ROUGHENED SLOPE WILL PROVIDE SOME NATURAL COVERAGE FOR LIME, FERTILIZER, AND SEED. THE SURFACE SHOULD NOT BE COMPACTED OR SMOOTH. FINE SEEDBED PREPARATION IS NOT NECESSARY FOR HYDROSEEDING OPERATIONS. LARGE CLODS, STONES, AND IRREGULARITIES PROVIDE CAVITIES IN WHICH SEEDS CAN LODGE.

RATE OF WOOD FIBER (CELLULOSE) APPLICATION SHOULD BE AT LEAST 4000 LB/ACRE.

APPLY LEGUME INOCULANTS AT FOUR TIMES THE RECOMMENDED RATE WHEN ADDING INOCULANT TO A HYDROSEEDER SLURRY.

IF A MACHINERY BREAKDOWN OF 1/2 TO 2 HOURS OCCURS, ADD 50 PERCENT MORE SEED TO THE TANK, BASED ON THE PROPORTION OF THE SLURRY REMAINING. THIS SHOULD COMPENSATE FOR DAMAGE TO SEED. BEYOND 2 HOURS, A FULL RATE OF NEW SEED MAY BE NECESSARY.

LIME IS NOT NORMALLY APPLIED WITH A HYDRAULIC SEEDER BECAUSE IT IS ABRASIVE. IT CAN BE BLOWN ONTO STEEP SLOPES IN DRY FORM.

WHEN APPLYING HYDROSEED THE TOWER OR TANK METHOD SHALL BE USED. BELOW ARE THE SEQUENCE OF APPLICATION FOR BOTH METHODS:

WHEN USING THE TANK METHOD THE FIRST APPLICATION SHOULD BE WITH 2/3 MULCH, ALL SEED AND FERTILIZER AND THE SECOND APPLICATION SHOULD BE WITH 1/3 MULCH ONLY.

WHEN USING THE TOWER METHOD THE FIRST APPLICATION SHOULD BE WITH 1/3 MULCH ONLY AND THE SECOND APPLICATION SHOULD BE WITH 2/3 MULCH, ALL SEED AND FERTILIZER.

> MAINTENANCE:
 GENERALLY, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL SOIL COVER HAS BEEN MAINTAINED FOR ONE FULL YEAR FROM PLANTING, INSPECT SEEDING AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE.

RESEEDING: IF A STAND HAS INADEQUATE COVER, REEVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER. REESTABLISH THE STAND AFTER SEEDBED PREPARATION OR OVERSEED THE STAND. CONSIDER SEEDING TEMPORARY, ANNUAL SPECIES IF THE TIME OF YEAR IS NOT APPROPRIATE FOR PERMANENT SEEDING. IF VEGETATION FAILS TO GROW, SOIL MUST BE TESTED TO DETERMINE IF ACIDITY OR NUTRIENT IMBALANCE IS RESPONSIBLE.

FERTILIZATION: SOIL ANALYSIS RESULTS SHALL BE USED TO DETERMINE CORRECT FERTILIZER APPLICATION RATES TO PREVENT THE OVER-APPLICATION OF FERTILIZER TO THE SITE AS REQUIRED BY TENNESSEE GENERAL PERMIT NO. TNR100000. SOIL ANALYSIS SHALL BE PERFORMED PRIOR TO THE APPLICATION OF FERTILIZER TO ANY PORTION OF THE SITE. DOCUMENTATION OF THE REQUIRED SOIL ANALYSIS SHALL BE MAINTAINED ONSITE AS PART OF THE SWPPP. ON THE TYPICAL DISTURBED SITE, FULL ESTABLISHMENT USUALLY REQUIRES REFERTILIZATION IN THE SECOND GROWING SEASON. FINE TURF REQUIRES ANNUAL MAINTENANCE FERTILIZATION.

> TEMPORARY SEEDING SPECIFICATIONS:

> SEEDING MIXTURES AND DATES:

FALL TO EARLY SPRING (AUG. 15 TO MAY 1)	RATE (LB/ACRE)
WINTER RYE (GRAIN)	120
KOBE LESPEDEZA	50

SPRING TO LATE SUMMER (MAY 1 TO AUG. 15)	RATE (LB/ACRE)
GERMAN MILLET	40

> SOIL AMENDMENTS:
 FOLLOW RECOMMENDATIONS OF SOIL ANALYSIS TESTS.

> MULCH:
 APPLY 4,000 LB/ACRE STRAW. ANCHOR MULCH BY TACKING WITH ASPHALT, ROVING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

> MAINTENANCE:
 REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

> PERMANENT SEEDING SPECIFICATIONS:

> SEEDING MIXTURES:

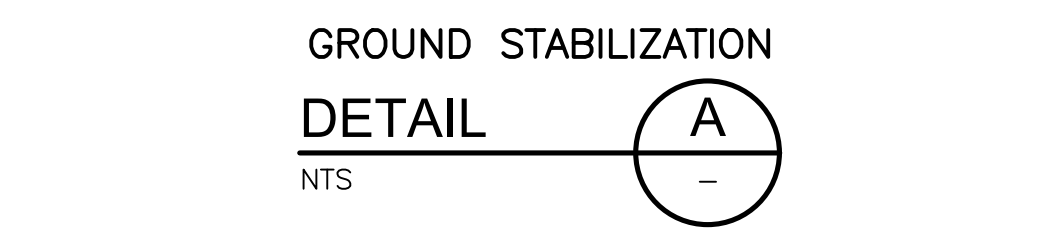
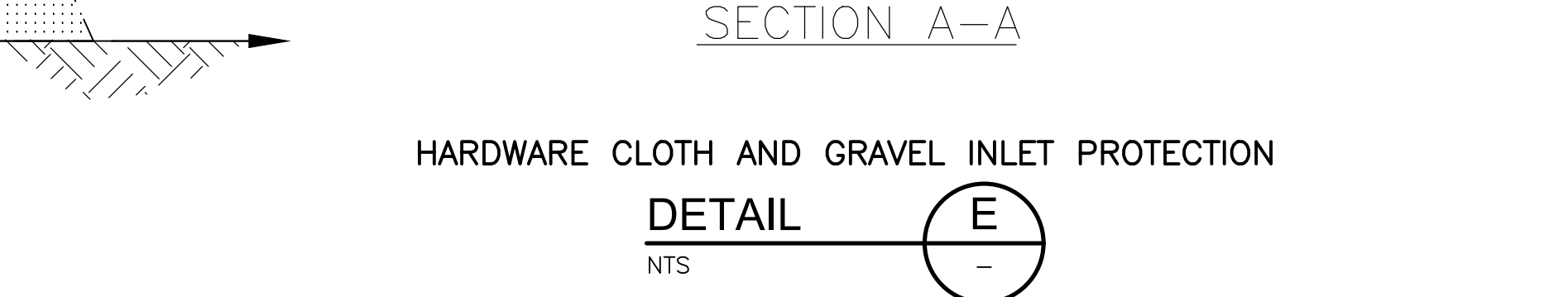
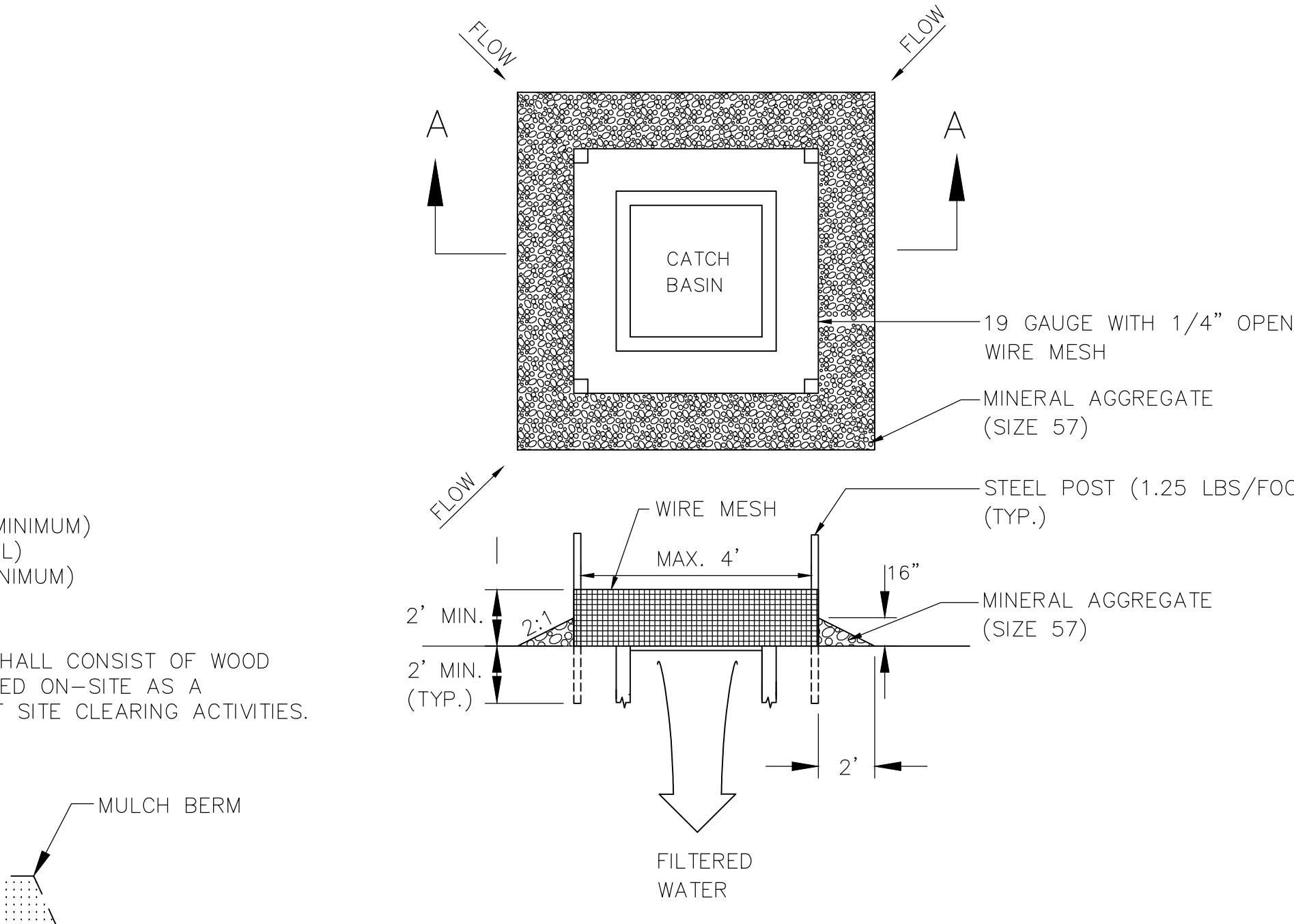
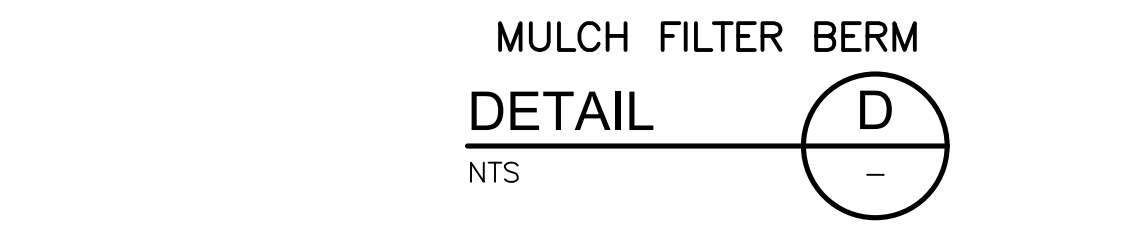
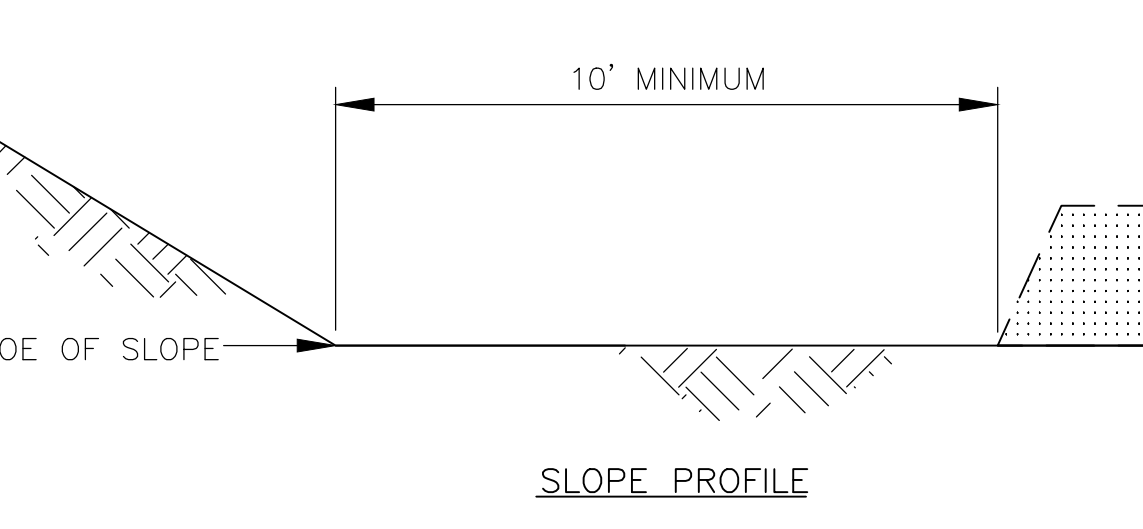
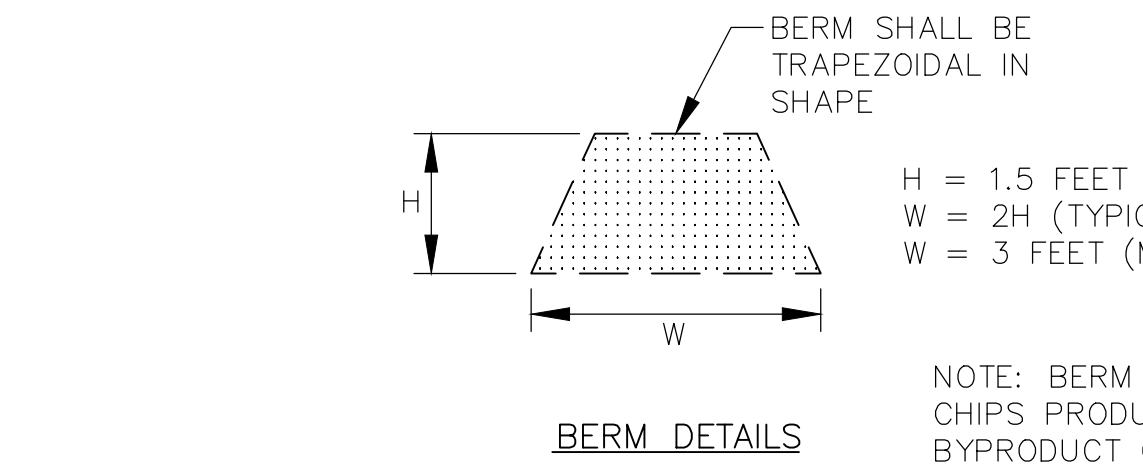
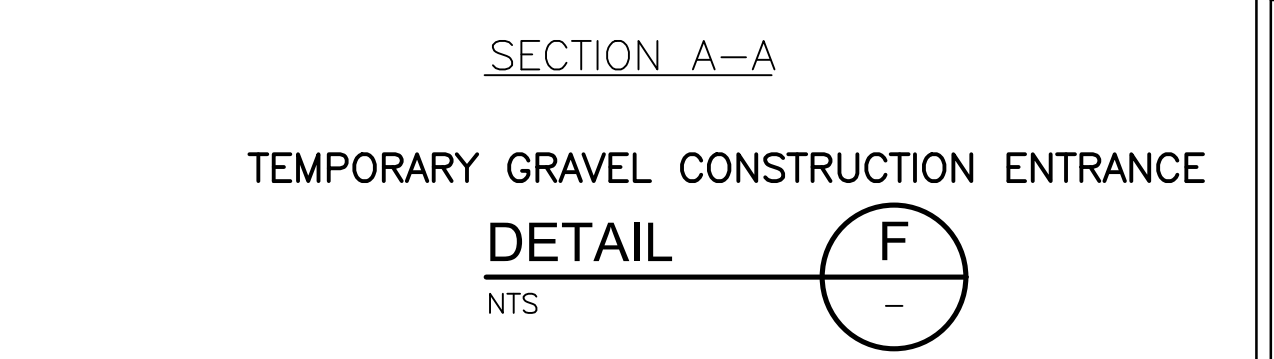
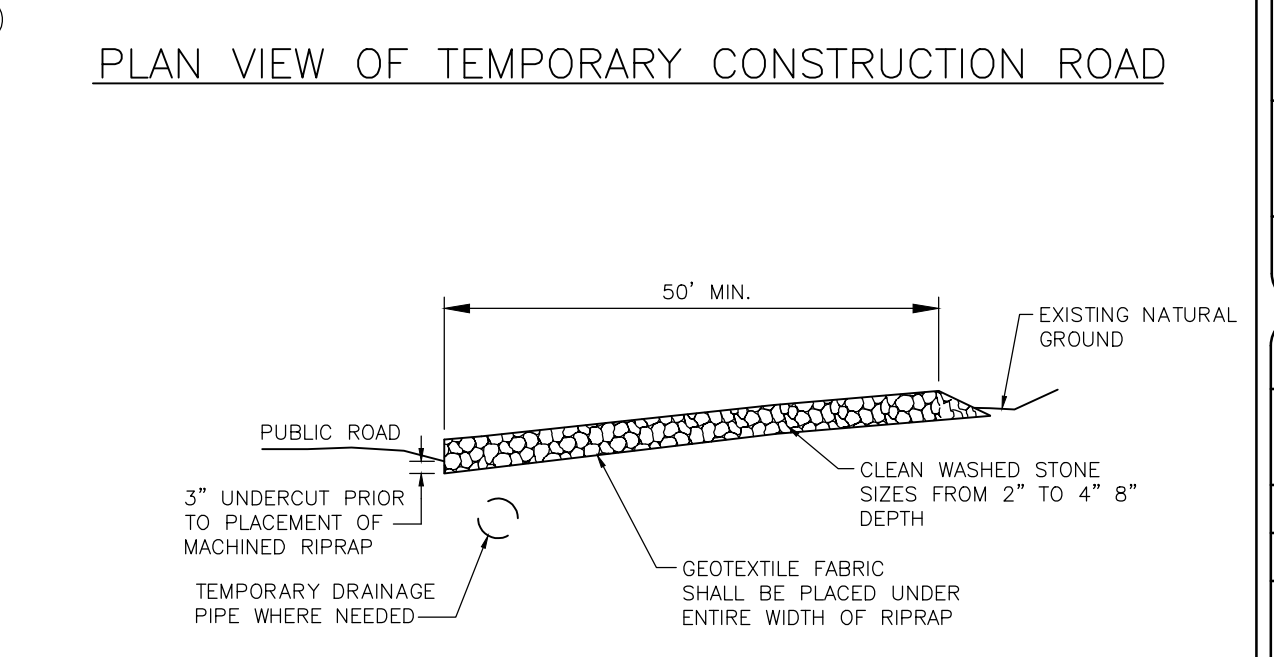
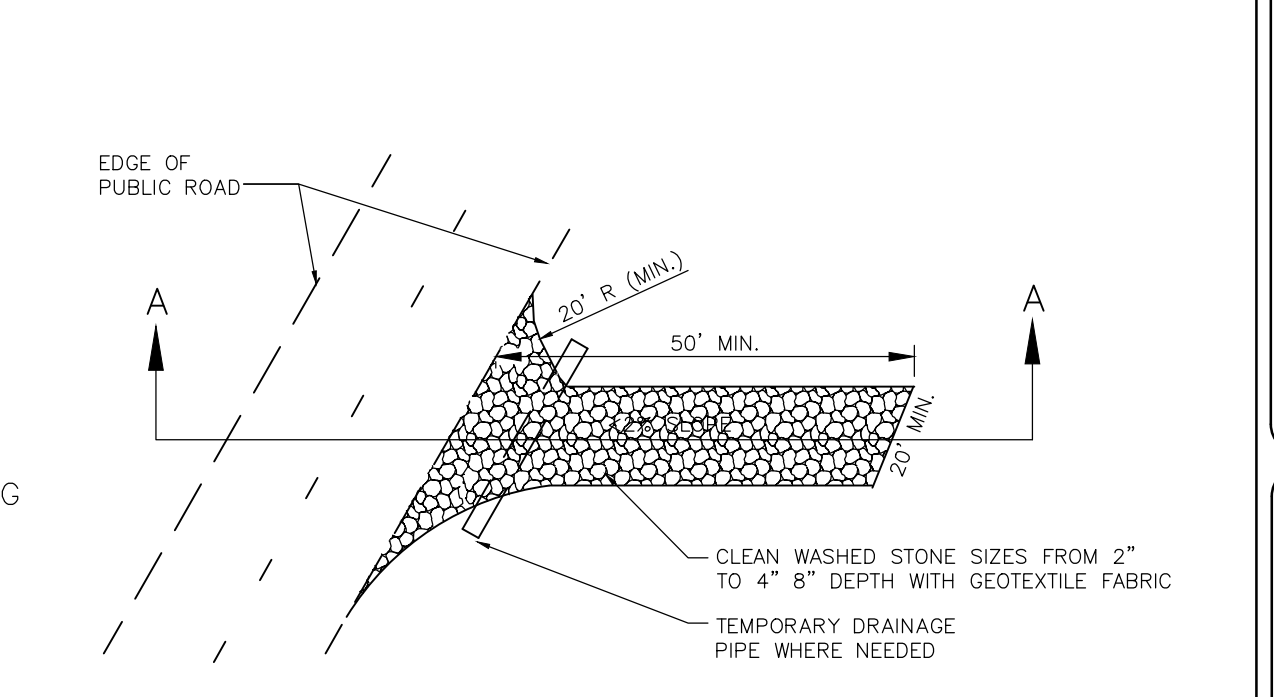
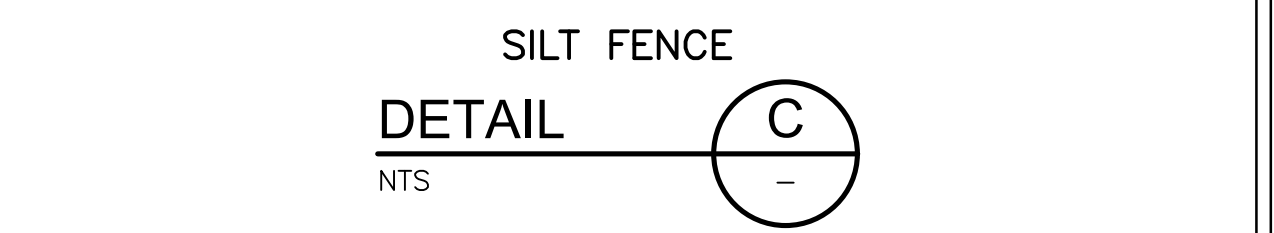
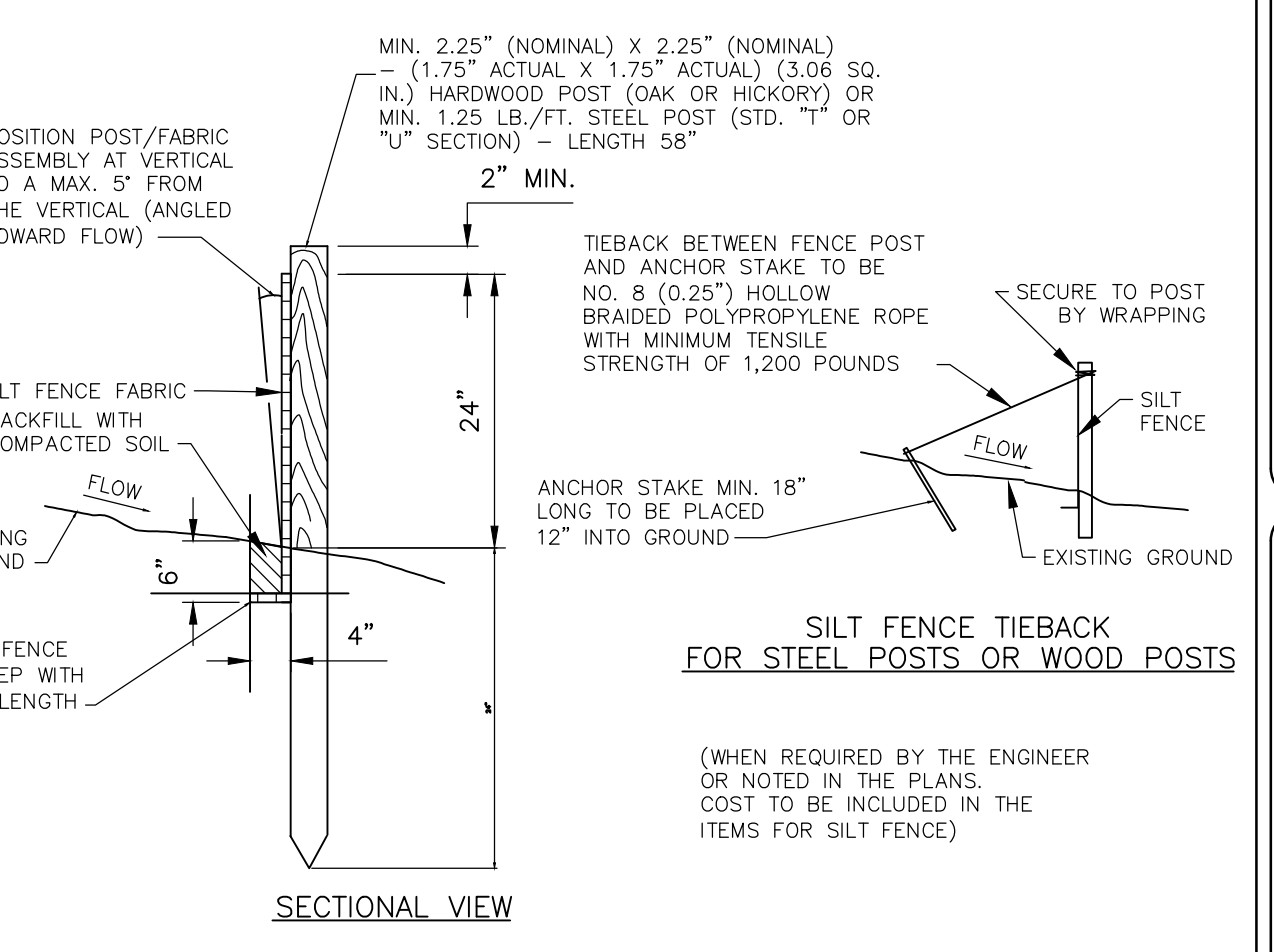
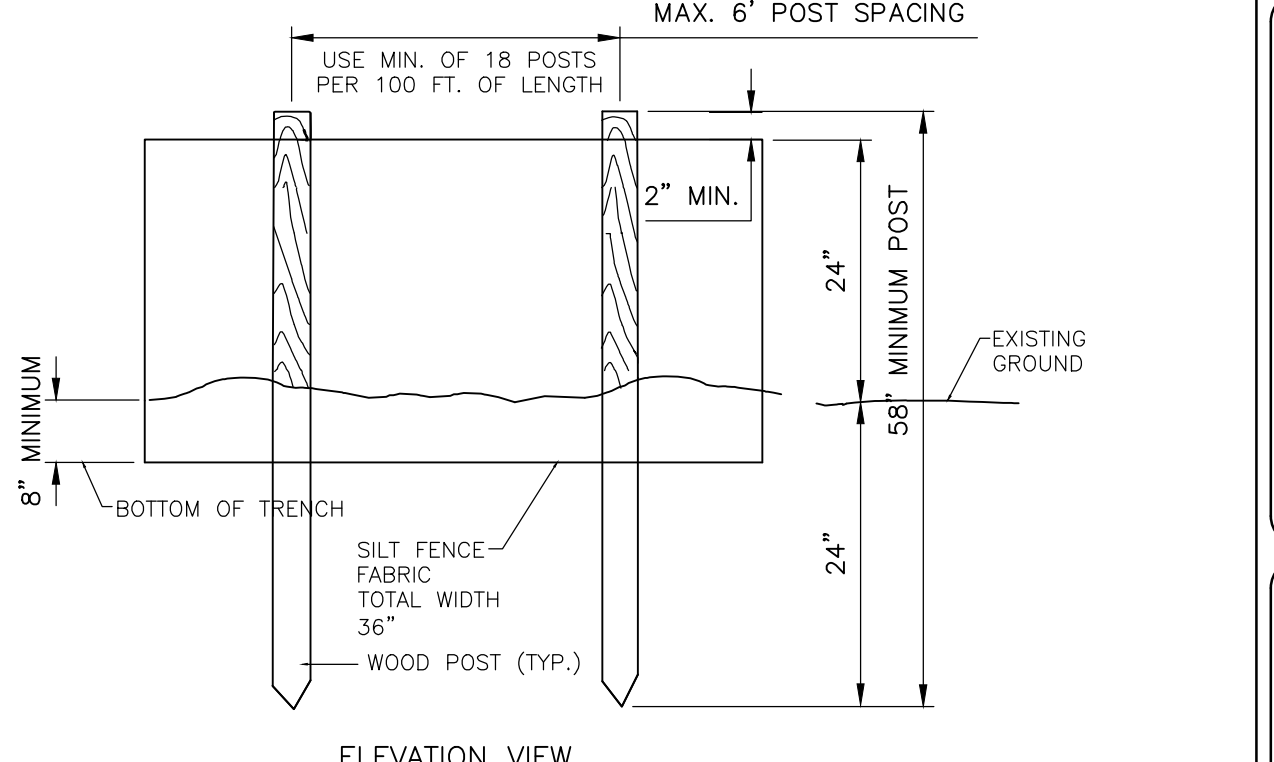
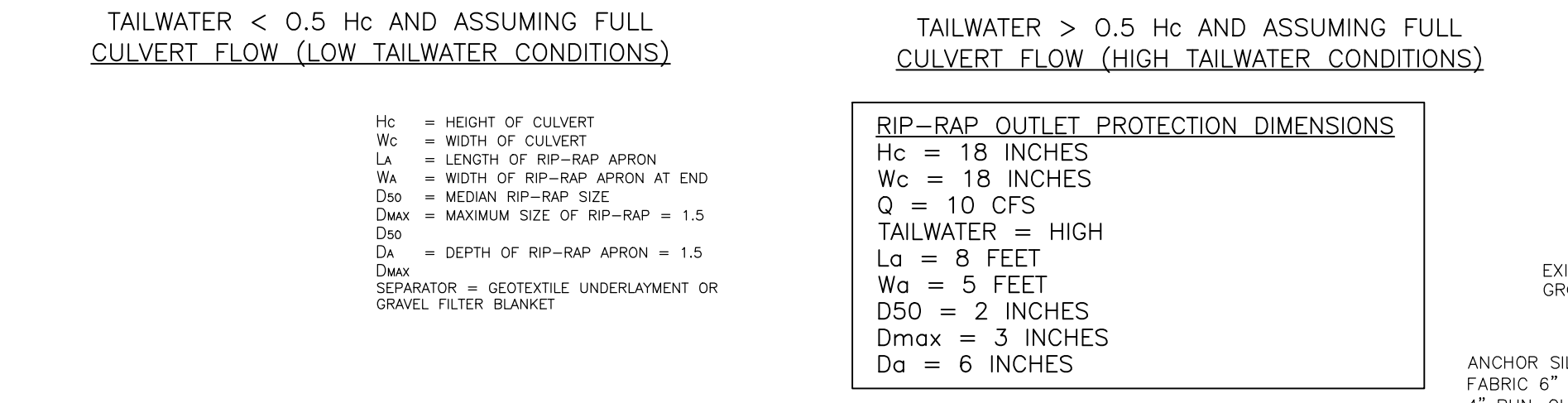
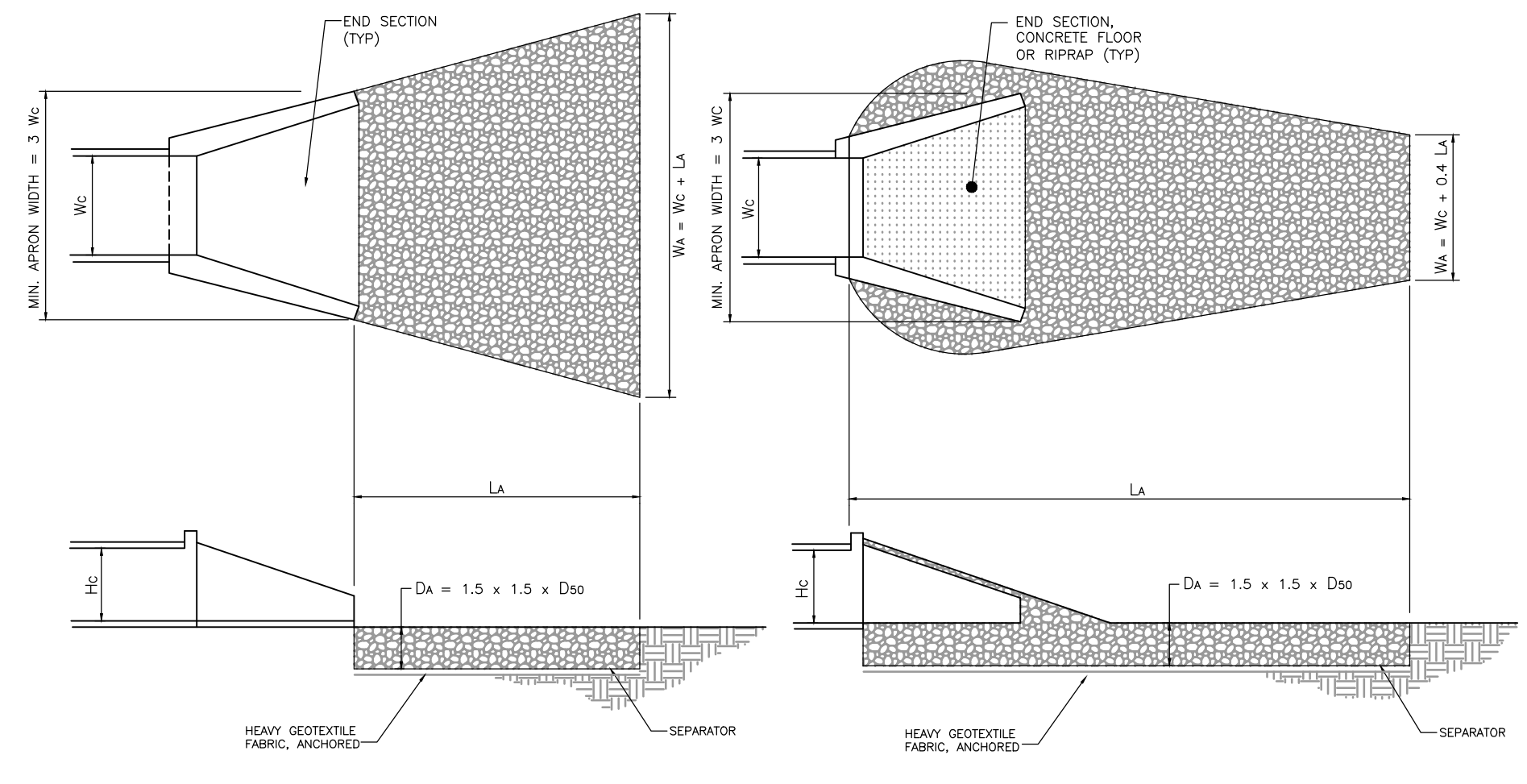
KENTUCKY TALL FESCUE #31	RATE (LB/ACRE)
BAHIA GRASS	100
BERMUDAGRASS	40
CENTPEDEGRASS	15
KOBE LESPEDEZA	20
GERMAN MILLET	25
TOTAL SEED MIXTURE	150

NURSE PLANTS:
 1. FROM APRIL 15 AND AUG. 15, ADD 10 LB/ACRE GERMAN MILLET AND 15 LB/ACRE SUDANGRASS.
 2. PRIOR TO APRIL 15 OR AFTER AUG. 15, ADD 30 LB/ACRE WINTER RYE (GRAIN).

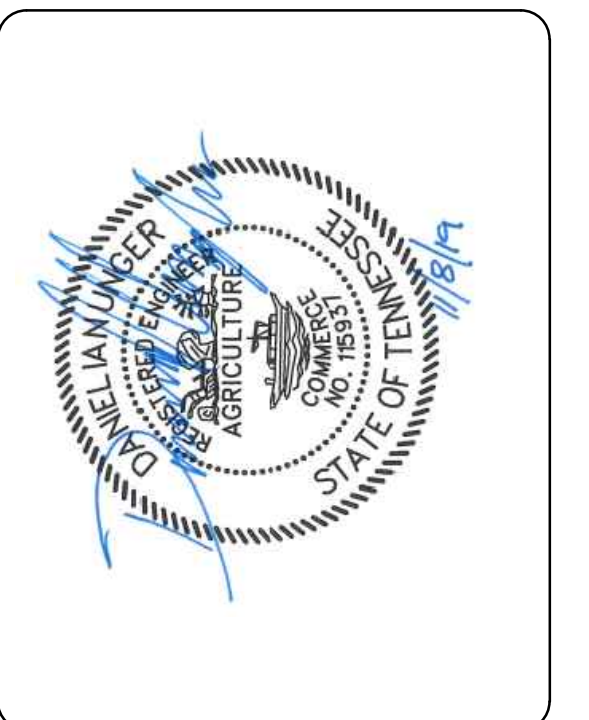
> SOIL AMENDMENTS:
 FOLLOW RECOMMENDATIONS OF SOIL ANALYSIS TESTS.

> MULCH:
 APPLY 4000 LB/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCHING MATERIAL. ANCHOR MULCH BY TACKING WITH ASPHALT. ANIMAL SAFE MATTING SHALL BE USED ON STEEP SLOPES.

> MAINTENANCE:
 REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. RESEED, REFERTILIZE, AND REMULCH DAMAGED AREAS IMMEDIATELY.



CDM Smith
 CDM Smith Inc.
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 Tel: (423) 771-4495



DUPONT PUMP STATION AND
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 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

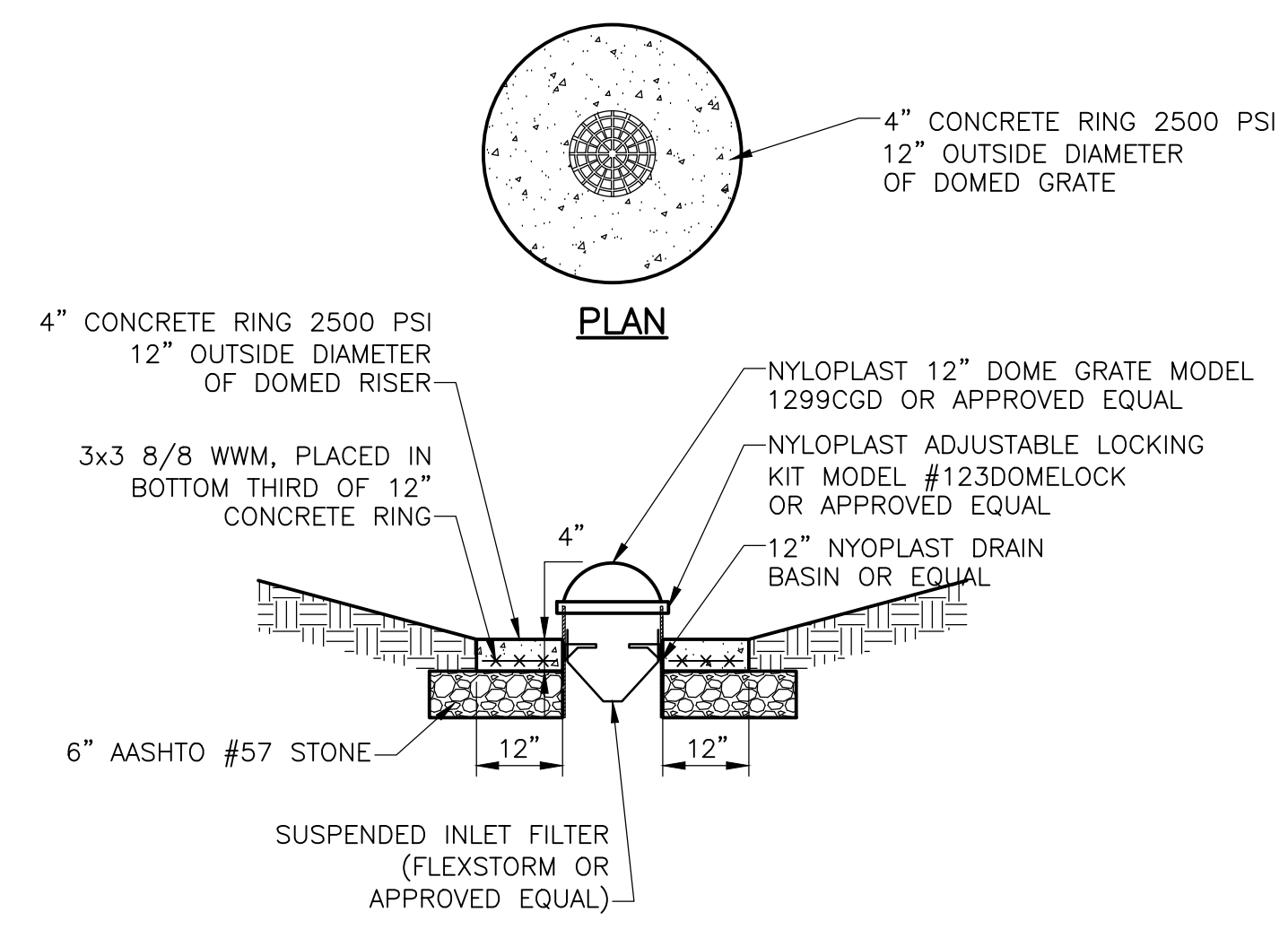
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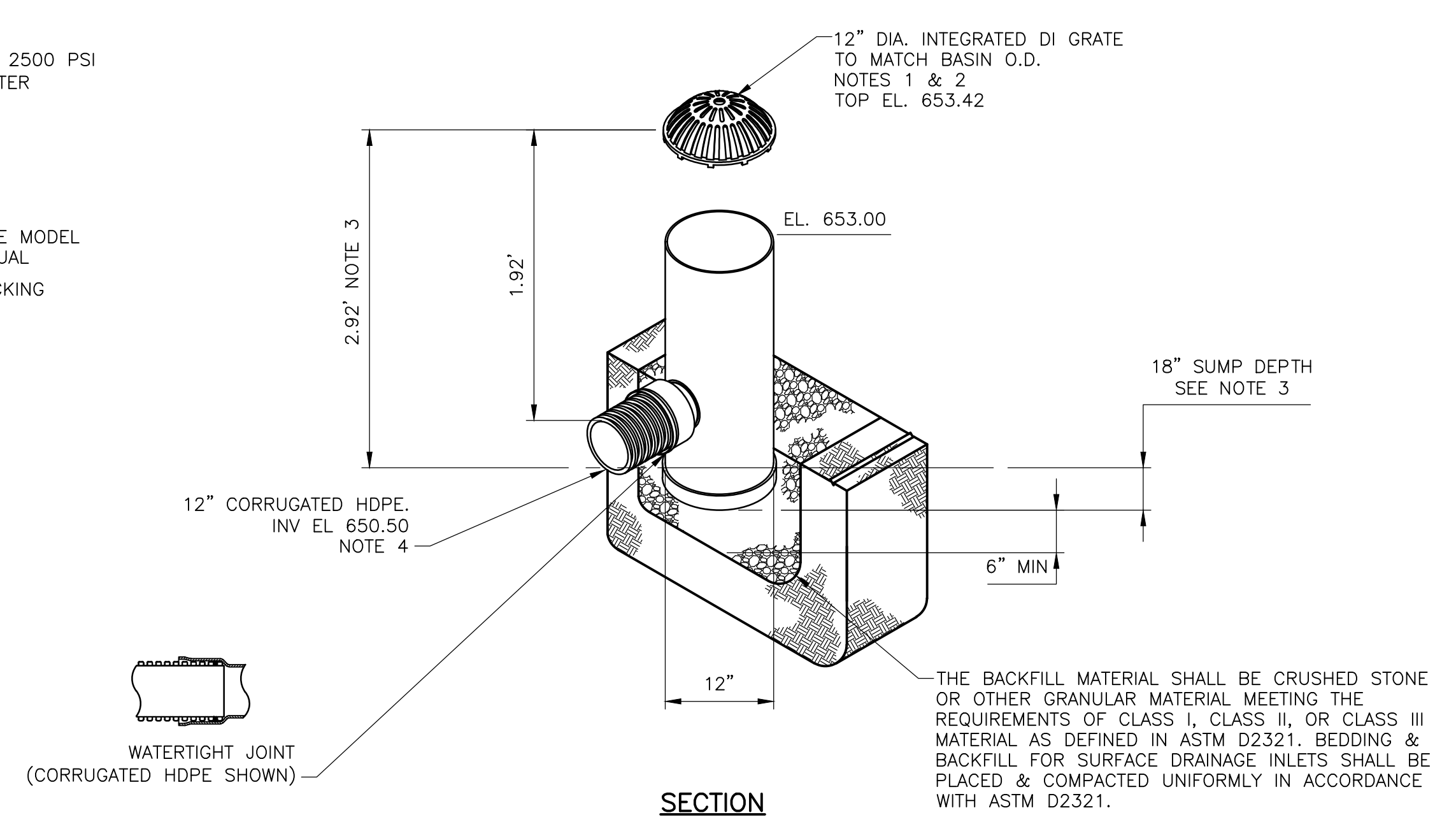
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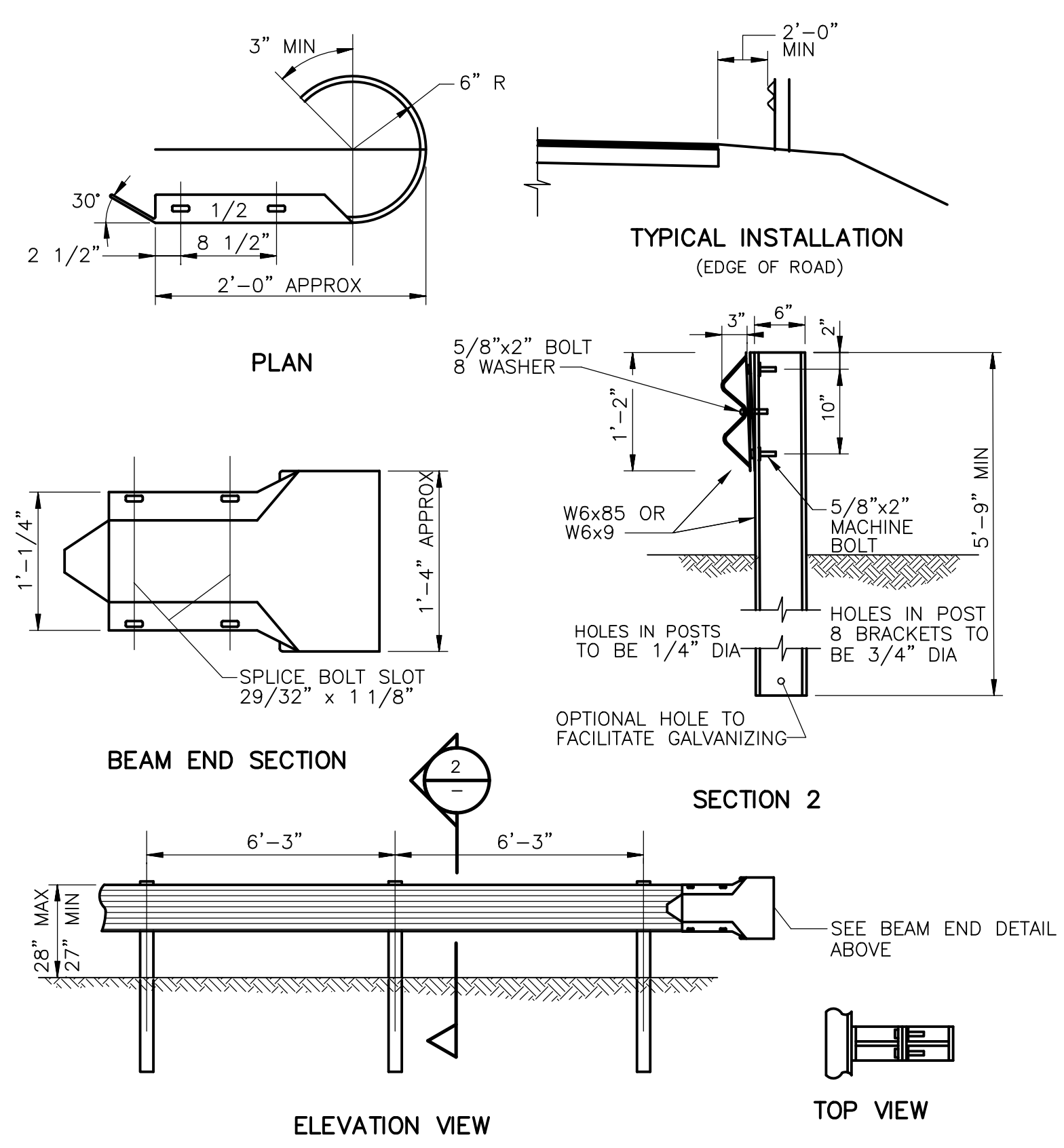
- NOTES:
- INSTALL 8 EVENLY SPACED 3/8" PERFORATIONS IN THE SIDEWALL AROUND THE DIAMETER OF RISERS AT APPROXIMATE NYLOPLAST DRAIN BASIN STRUCTURE SUMP ELEVATION. PERFORATIONS SHOULD BE WITHIN THE #57 AGGREGATE LAYER OF THE BIORETENTION BASINS.



**DOMED RISER
DETAIL A**

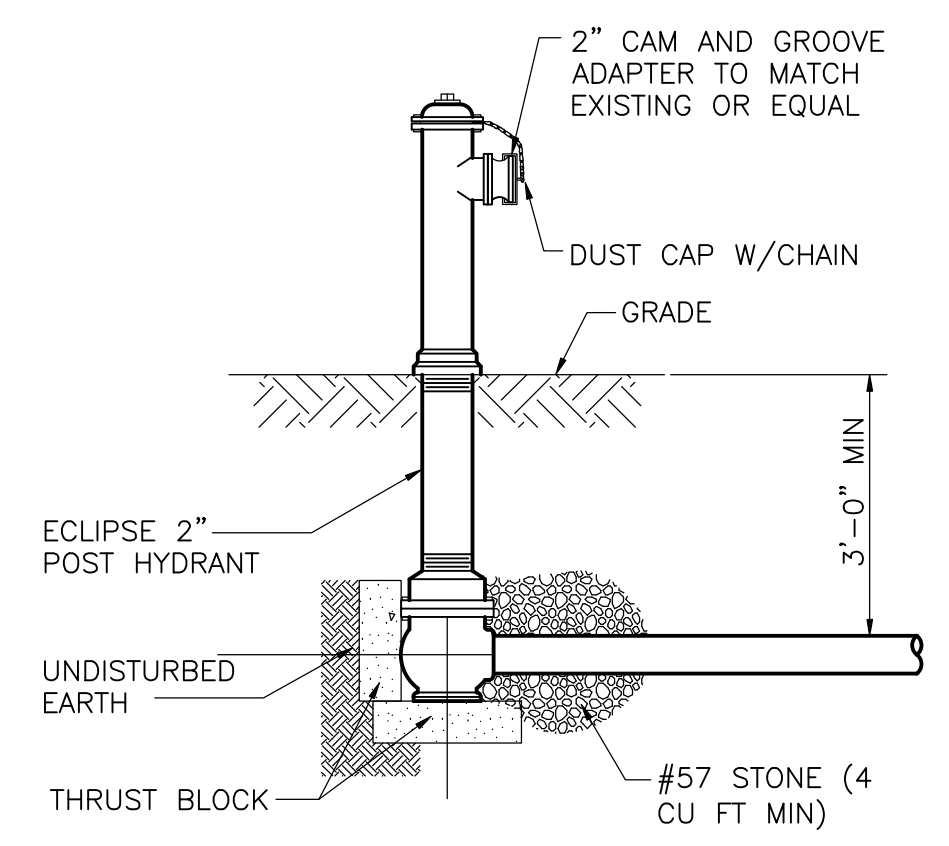
NTS

- NOTES:
- 12" DOME GRATE SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
 - 12" DOME GRATE FITS ONTO THE DRAIN BASINS WITH THE USE OF A PVC BODY TOP.
 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE.
 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°.
 - 12" DOME GRATES HAVE NO LOAD RATING.



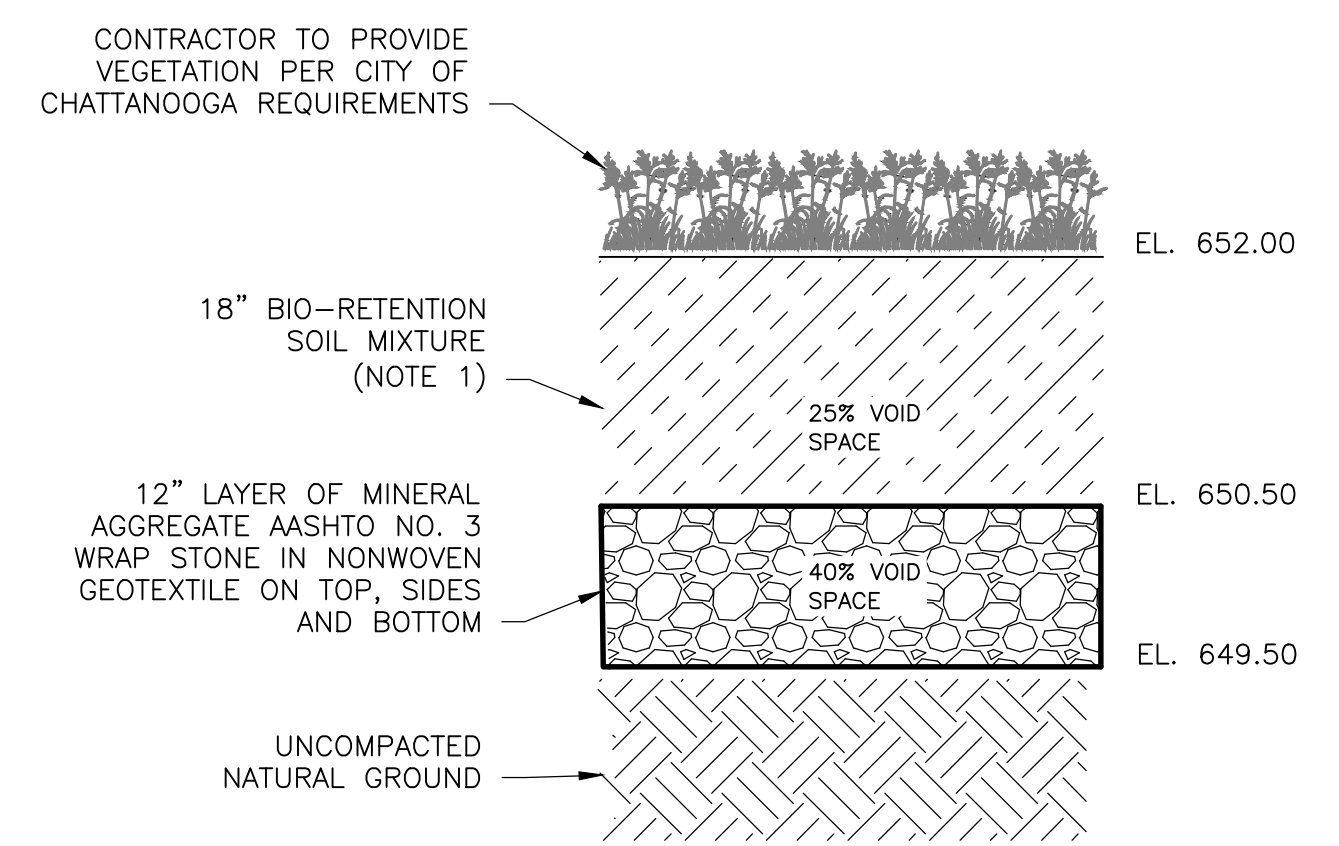
**METAL GUARDRAIL AND HARDWARE
DETAIL B**

NTS



**YARD HYDRANT
DETAIL C**

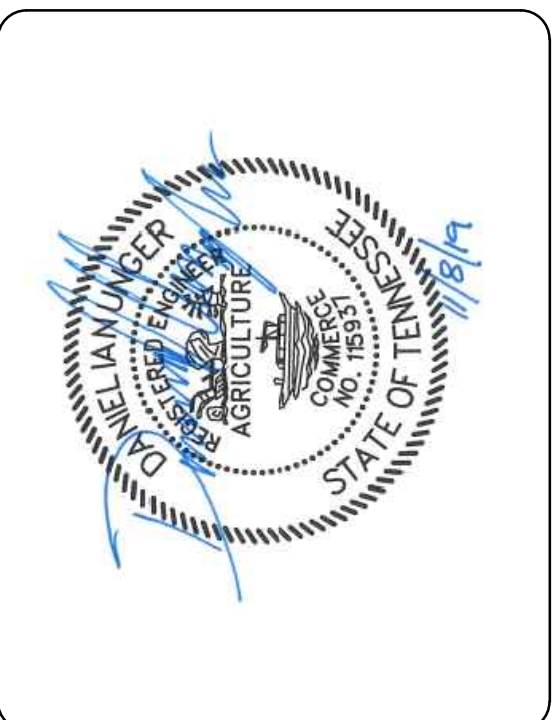
NTS



**BIO-RETENTION SECTION
DETAIL D**

NTS

- NOTE:
- BIO-RETENTION SOIL MIXTURE SHALL BE 85% WASHED, COARSE SAND; 10% FINES; 5% ORGANICS FROM PINE BARK.
 - REFER TO CITY OF CHATTANOOGA RAIN RESOURCE GUIDE FOR MORE INFORMATION.



**DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A**

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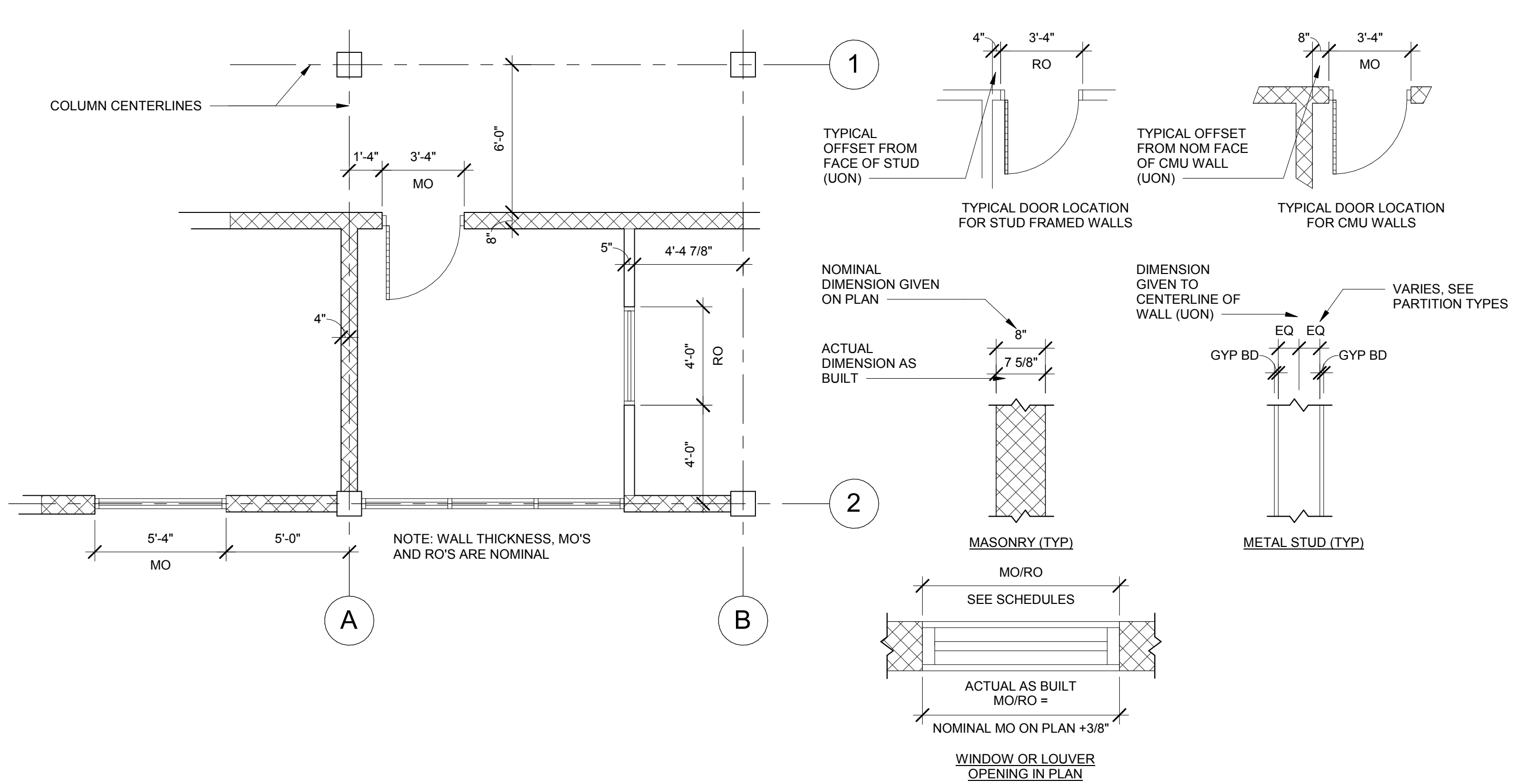
SHEET: CD-7

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 PLOT DATE: 8/16/2008
 BY: CULPAR
 LAST SAVED: 11/8/2019
 CREATED: 11/8/2019

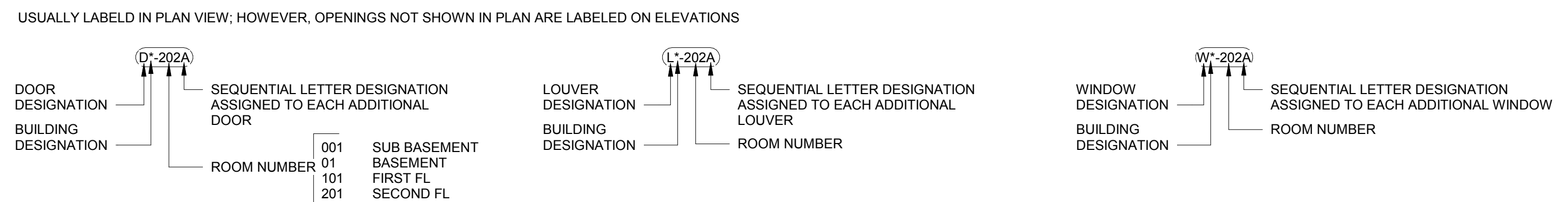
ABBREVIATIONS

&	AND	GB	GLASS BLOCK	REF	ROOF EXHAUST FAN
<	ANGLE	GRT	GRATING	REINF	REINFORCE (D, ING)
@	AT	GYP	GYP SUM	REQ'D	REQUIRED
AB	ANCHOR BOLT	GWB	GYP SUM WALL BOARD	REV	REVISED
ABV	ABOVE	HARD	HARDENER	RF	ROOF FAN
ACMU	ACOUSTICAL CONCRETE MASONRY UNIT	HFD	HARDWOOD	RFG	ROUGH
AFF	ABOVE FINISHED FLOOR	HDWR	HARDWARE	RGH	ROUGH
AFG	ABOVE FINISHED GRADE	HGR	HANGER	RJ	REVEAL/RUSTICATION JOINT
AL, ALUM	ALUMINUM	HGT	HEIGHT	RL	RAIN LEADER
AMP	ACOUSTICAL METAL PANELS	HM	HOLLOW METAL	RLG	RAILING
ANOD	ANODIZE(D)	HOR	HORIZONTAL	RM	ROOM
ASSY	ASSEMBLY	HP	HIGH POINT	RO	ROUGH OPENING
BBT	BIOBASED TILE	HF	HIGH POINT	RT	RUBBER TILE
BD	BOARD	HR	HANDRAIL	RWL	RAIN WATER LEADER
BEV	BEVEL(ED)	IN	INCH	S	STEEL S-SHAPED DESIGNATION
BLDG	BUILDING	INST	INSTRUMENTATION	SAT	SUSPENDED ACOUSTICAL TILE
BLK	BLOCK	INSUL	INSULATION	SB	SEAMLESS BASE
BLKG	BLOCKING	JC	JANITOR'S CLOSET	SCHD	SCHEDULE
BRG	BEARING	JT	JOINT	SCRN	SCREEN(ED, ING)
BRK	BRICK	JT FLR	JOINT FILLER	SECT	SECTION
BRS	BRASS	L	LINE OF STRUCTURAL ANGLE DESIGNATION	SF	SEAMLESS FLOORING
BRZ	BRONZE	LAB	LABORATORY	SGFT	STRUCTURAL GLAZED FACING TILE
BTM	BOTTOM	LAD	LADDER	SHT	SHEET
C TO C	CENTER TO CENTER	LAM	LAMINATED	SIM	SIMILAR
CAB	CABINET	LAV	LAVATORY	SK	SINK
CEM	CEMENT	LG	LAMINATED GLASS	SL	SLOPE
CF	COMPRESSIBLE FILLER	LINO	LINOLEUM	SLNT	SEALANT
CFB	CELLULOSIC GLASS FIBER BOARD	LKR	LIGHT	SPEC	SPECIFICATION, SPECIFIED
CH	CONCRETE HARDENER	LNTL	LINTE	SST	STAINLESS STEEL
CHAM	CHAMFER	LP	LOW POINT	STD	STANDARD
CHAN	CHANNEL	LT	LIGHT(S)	STL	STEEL
CIP	CAST IN PLACE	MAS	MASONRY	STRU	STRUCTURE(S, URAL)
CJ	CONTROL JOINT	MATL	MATERIAL	STRVY	STAIRWAY
CL OR	CENTERLINE	MAX	MAXIMUM	SUPT	SUPERINTENDENT
CLG	CEILING	MEMB	MEMBRANE	SUSP	SUSPENDED
CLKG	CALLING	MFR	MANUFACTURER	T	TREAD(S)
CMU	CONCRETE MASONRY UNIT	MIN	MINIMUM	TBM	TRAFFIC BEARING MEMBRANE
COL	COLUMN	MISC	MISCELLANEOUS	T&G	TONGUE AND GROOVE
COMP	COMPRESSIBLE	MO	MASONRY OPENING	TEMP	TEMPERATURE
CONC	CONCRETE	MR	MOISTURE RESISTANT	TEMP	TEMPERED
CONT	CONTINUOUS	MRAT	MOISTURE RESISTANT ACOUSTICAL TILE	TEMP	TEMPORARY
CRPT	CARPET, CARPET TILE	MTD	MOUNTED	TEMP	TEMPORARY
CRS	COURSE(S)	MTG	MOUNTING	TERRAZO	TERRAZZO
CT	CERAMIC TILE	MTL	METAL	TERB	TERRAZZO BASE
CET	DETAIL	NIC	NOT IN CONTRACT	THK	THICK(NESS)
DF	DRINKING FOUNTAIN	NOM	MONINAL	THR	THRESHOLD
DIA	DIAMETER	NTS	NOT TO SCALE	TKBD	TACKBOARD
DIAG	DIAGONAL	OC	ON CENTER	TOB	TOP OF BRICK
DIM	DIMENSION	OH	OVERHANG	TOC	TOP OF CONCRETE
DISP	DISPENSER	OPNG	OPENING	TOIL	TOILET
DN	DOWN	OPP HD	OPPOSITE HAND	TOM	TOP OF MASONRY
DP	DAMP PROOFING	ORD	OVERFLOW ROOF DRAIN	TOPG	TOPPING
DR	DRAIN	OSB	ORIENTED STRAND BOARD	TOS	TOP OF STEEL
ELEC	ELECTRICAL	OV	OVER	TS	STRUCTURAL TUBING (STEEL UNLESS NOTED)
ELEV	ELEVATION	OVHD	OVERHEAD	TSL	TOP OF SLAB
EQ	EQUAL(LY)	PERIM	PERIMETER	TWF	THROUGH WALL FLASHING
EQPT	EQUIPMENT	PL	PLASTER	TYP	TYPICAL
EWIC	ELECTRICAL WATER COOLER	PL	PROPERTY LINE	UC	UNDERCUT
EXP	EXPOSED	PLAS	PLASTER	UON	UNLESS OTHERWISE NOTED
EJ	EXPANSION JOINT	PLK	PLANK	UR	URINAL
EXIST, (E)	EXISTING	PLYWD	PLYWOOD	VB	VAPOR BARRIER
FD	FLOOR DRAIN	PM	PRESSED METAL	VCT	VINYL COMPOSITE TILE
FE	FIRE EXTINGUISHER	PR	PAIR	VERT	VERTICAL
FF	FACTORY FINISH	PRD	PROMENADE ROOF DRAIN	VEST	VESTIBULE
FG	FIBERGLASS	PROST	PRECAST	VTR	VENT THRU ROOF
FIN	FINISHED	PREFAB	PRE-FABRICATED	W	WITH
FLG	FLASHING	PT	PREASSURE TREATED	W/	WITH
FL	FLOORING	PRMLD	PREMOLDED	W/A	WHERE APPLICABLE
FLR	FILLER	PSF	POUNDS PER SQUARE FOOT	W/O	WITHOUT
FR	FRAME	PTD	PAINTED	WC	WATER CLOSET
FRP	FIBERGLASS REINFORCED PLASTIC	QT	QUARRY TILE	WD	WOOD
FO	FRAME OPENING	QTB	QUARRY TILE BASE	WDW	WINDOW
FV	FIELD VERIFY	R	RISER(S)	WF	WIDE FLANGE
FXD	FIXED	R+S	BACKER ROD & SEALANT	WPG	WATERPROOFING
GA	GAGE, GAUGE	RB	RUBBER BASE	WT	STEEL TEE-SHAPE DESIGNATION
GALV	GALVANIZED	RD	ROOF DRAIN	WWF	WELDED WIRE FABRIC
GL	GLASS	RECT	RECEPTACLE		

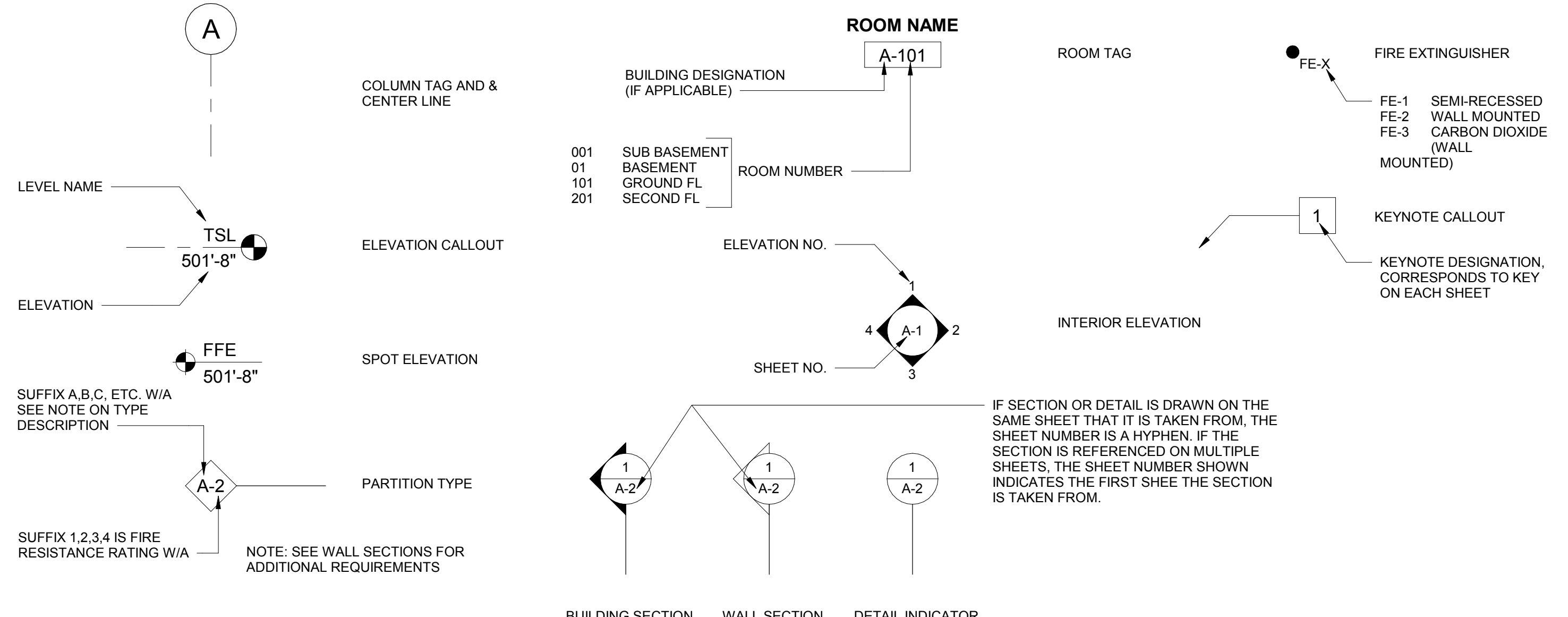
DIMENSIONING SYSTEM



OPENINGS



SYMBOLS



GENERAL NOTES

- NOT ALL EQUIPMENT IS SHOWN FOR CLARITY. REFER TO THE APPROPRIATE DISCIPLINE SHEETS FOR SPECIFIC EQUIPMENT LAYOUT AND OTHER REQUIREMENTS
- SEE CIVIL SHEETS FOR SIDEWALK, ROAD PAVING AND FINISH GRADE ELEVATIONS.
- SEE STRUCTURAL SHEETS FOR SIZE AND LOCATION OF CONCRETE PADS, TRENCHES, VAULTS, SUMPS, ETC
- SEE STRUCTURAL SHEETS FOR CONCRETE AND MASONRY REINFORCEMENT
- ALL INTERIOR CMU WALLS SHALL BE PROVIDED WITH INSULATION INSERTS (SEE SPEC 04 20 00)
- PATCH AND REPAIR ANY MATERIALS OR SURFACES DAMAGED DURING THE CONSTRUCTION PROCESS TO MATCH THE EXISTING ADJACENT SURFACES.
- ALL ITEMS TO BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.
- DO NOT SCALE FROM THE DRAWINGS
- NOTIFY ARCHITECT IF CONSTRUCTION DOCUMENTS DIFFER FROM ACTUAL FIELD CONDITIONS PRIOR TO FABRICATION OR NEW CONSTRUCTION
- THIS DRAWING CONTAINS A GENERAL LIST OF SYMBOLS AND ABBREVIATIONS. NOT ALL ITEMS SHOWN HERE APPEAR ON THE CONTRACT DRAWINGS.

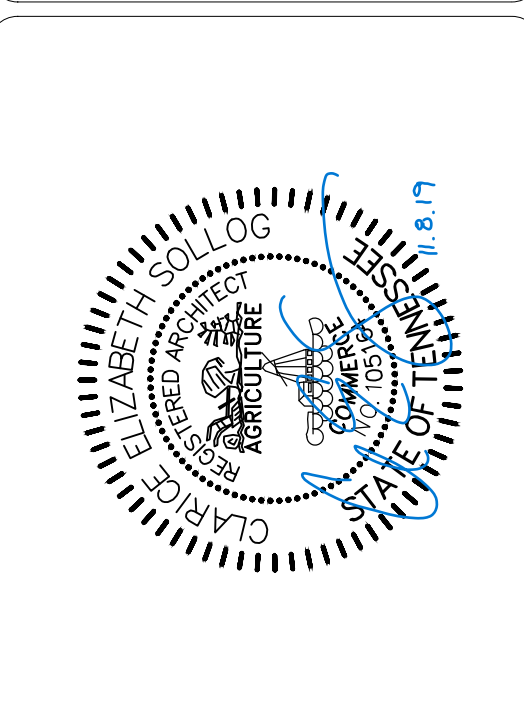
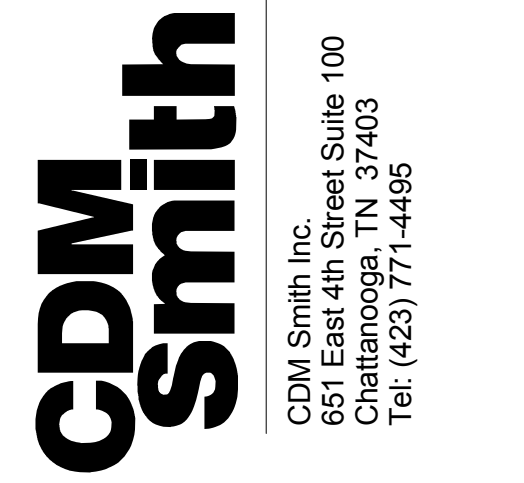
MATERIAL SYMBOLS

	EARTH
	GRAVEL
	BRICK
	CONCRETE MASONRY UNIT (CMU)
	PRECAST CONCRETE
	CAST-IN-PLACE CONCRETE
	WOOD BLOCKING
	WOOD FINISH
	PLYWOOD
	RIGID INSULATION
	BLANKET INSULATION
	STEEL
	ALUMINUM
	STUCCO / GROUT
	CAULK

LINE TYPES

(UNLESS OTHERWISE NOTED)

- CONTINUOUS - NEW CONSTRUCTION
- DASHED ON CONSTRUCTION PLAN/SHEETS - HIDDEN ELEMENTS BEYOND, ABOVE OR BELOW



DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

REV	DATE	DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.

PROJECT NO: 129699-109746

DATE: NOVEMBER 2019

DISC. LEAD: CES	DESIGNER: ARC	CHECKER: MTA
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SHEET TITLE: ARCHITECTURAL GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

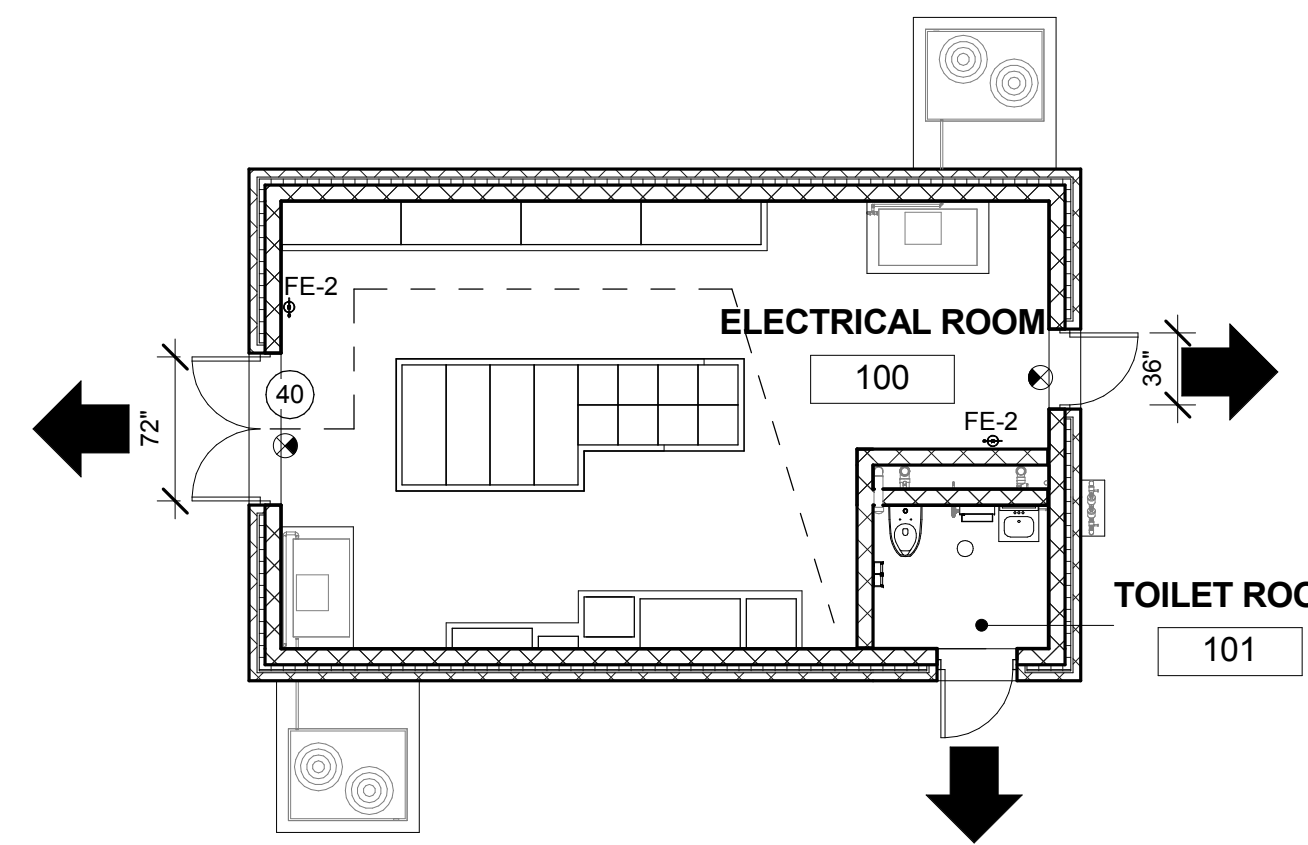
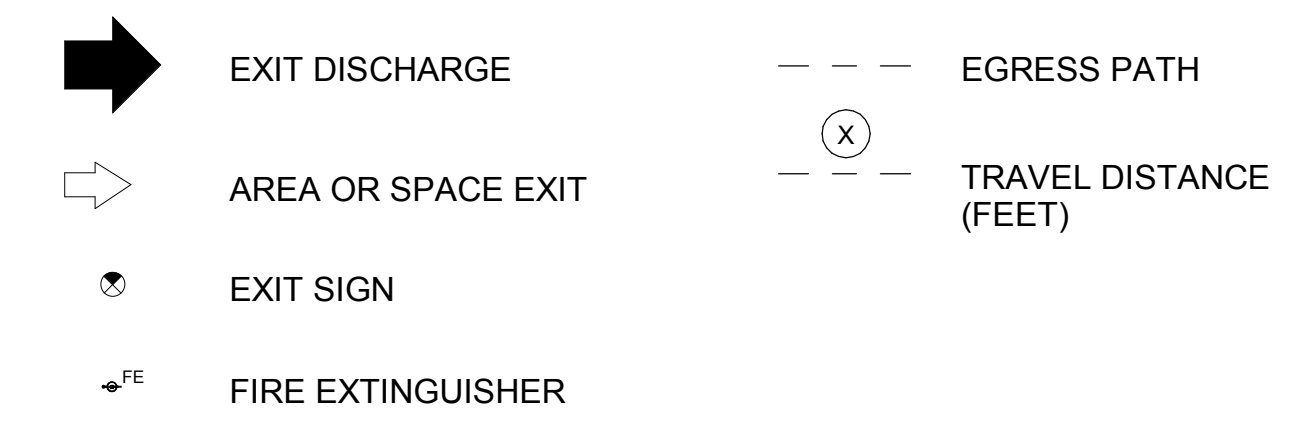
SHEET: A-1

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BUILDING CODE KEY DETERMINATIONS

APPLICABLE CODES	2012 INTERNATIONAL BUILDING CODE 2012 INTERNATIONAL FIRE CODE 2012 INTERNATIONAL PLUMBING CODE 2012 INTERNATIONAL ENERGY CONSERVATION CODE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES 2009 ANSIICC A117.1			
ELECTRICAL BUILDING KEY DETERMINATIONS				
ACCESSIBILITY REQUIREMENTS SECTION 1103.2.9 (IBC)	ELECTRICAL BUILDING FREQUENTED BY SERVICE PERSONEL ONLY FOR MAINTENANCE AND MONITORING. NOT REQUIRED TO COMPLY.			
BUILDING CLASSIFICATION OCCUPANCY - SECTION 306.3 CONSTRUCTION - SECTION 602.2	GROUP F-2 LOW HAZARD FACTORY INDUSTRIAL TYPE II B			
BUILDING HEIGHTS AND AREAS TABLE 503	MAX AREA	23,000 SF/FLOOR	ACTUAL	740 SF
	MAX HEIGHT	55 FEET	ACTUAL	16 FEET
	MAX STORES	3	ACTUAL	1
OCCUPANT LOAD SECTION 1004	535 SF/100 SF PER OCCUPANT = 6 OCCUPANTS*			
MAX TRAVEL DISTANCE TABLE 1016	MAXIMUM 300 FT		ACTUAL 40 FT	
FIRE SEPARATION DISTANCE FIRE RESISTANCE RATING TABLE 602	TYPE IIB 10 < X < 30 FT FROM BUILDINGS AND PROPERTY LINE		ACTUAL = 25 FT	
	EXTERIOR WALLS	0HR FIRE RATED		
EXITS PER SPACE SECTION 1021	REQUIRED	1	ACTUAL	2
STAIRS	N/A			
RAMPS	N/A			
HAZARDOUS CHEMICALS EXTERIOR STORAGE NFPA 30A	NO. 2 DIESEL FUEL OIL		ACTUAL	5000 GAL
	275 - 30,000 GAL = 5 FEET SEPERATION		ACTUAL	42 FEET
SPRINKLERS REQUIRED	NO	PROVIDED:	NO	
FIRE ALARM REQUIRED	NO	PROVIDED:	NO	

LIFE SAFETY LEGEND

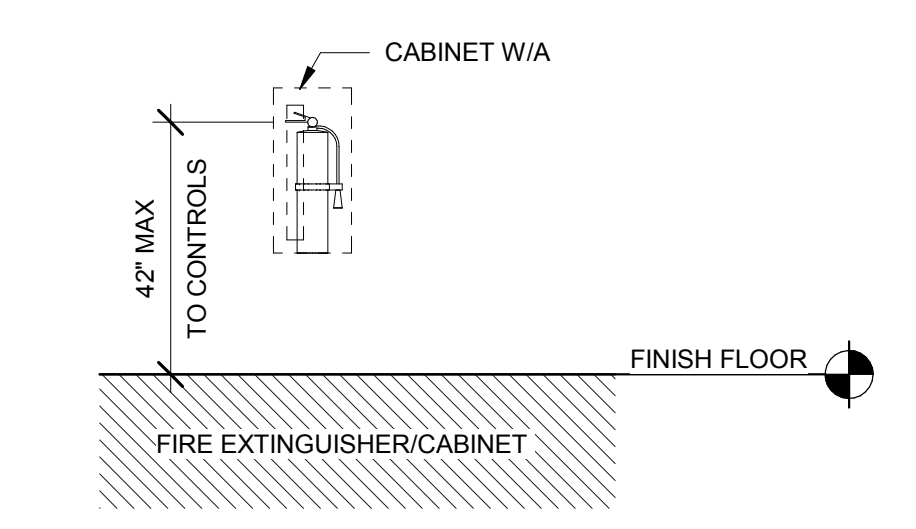


LIFE SAFETY PLAN
1/8" = 1'-0"

KEYNOTE LEGEND

KEY VALUE	KEYNOTE TEXT
13	ELEC EQUIP. SEE "E" DWGS
23	HVAC EQUIP. SEE "H" DWGS
40	FLOOR MATS, TYP

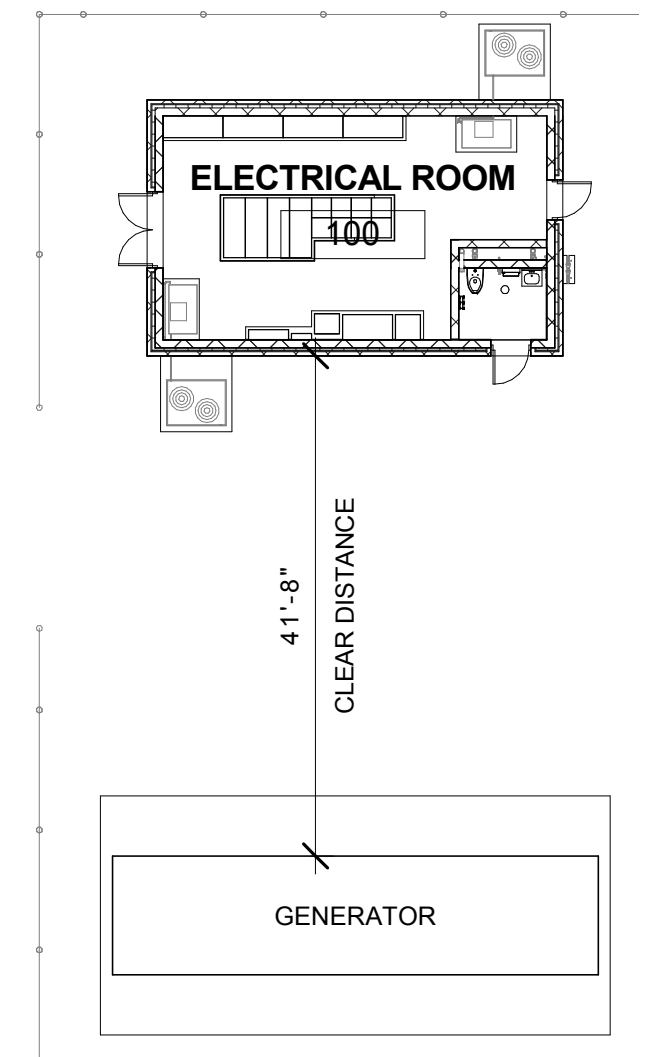
FIRE EXTINGUISHER MOUNTING HEIGHT



FIRE EXTINGUISHER SCHEDULE

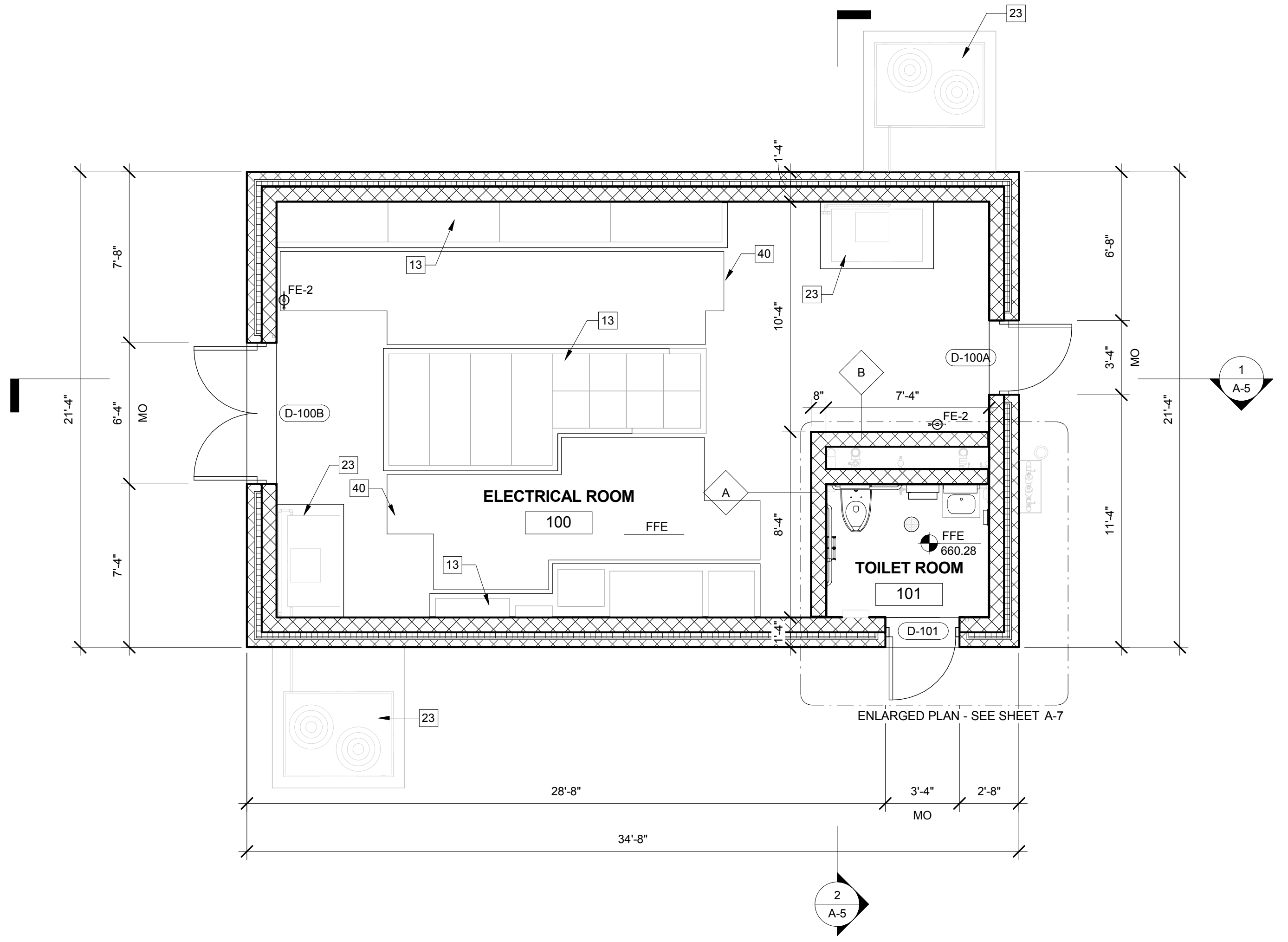
TAG	QTY	MODEL	MANUFACTURER	DESCRIPTION
FE-2	2	COSMIC 10E UL RATED 4A-80BC	JL INDUSTRIES (ACTIVAR INC)	10 LB DRY CHEMICAL, BRACKET MOUNTED

GENERAL NOTES
SEE SHEET A-1 FOR ADDITIONAL GENERAL NOTES

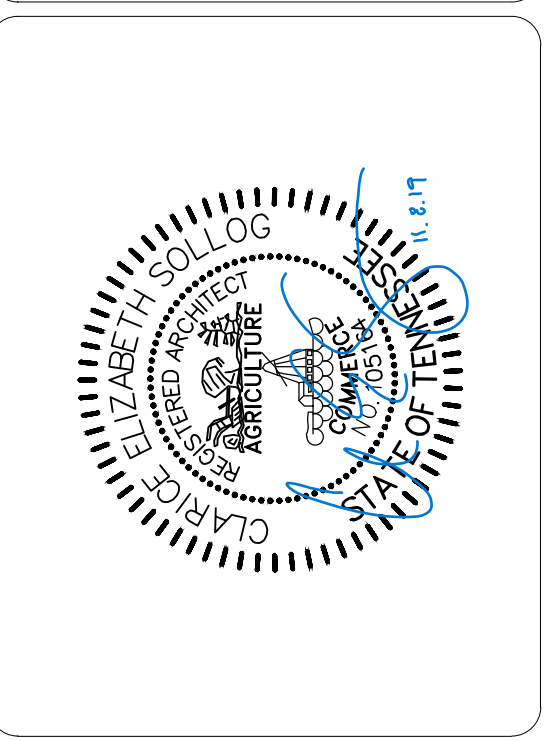
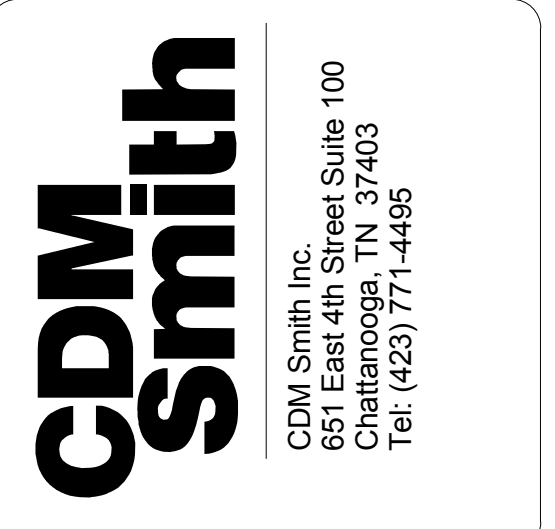


PARTIAL AREA PLAN
1/16" = 1'-0"

NOTE: SEE CIVIL PLANS FOR BUILDING LOCATION IN RELATION TO PROCESS STRUCTURES.



FLOOR PLAN
1/4" = 1'-0"



DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

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 DESIGNER: ARC
 CHECKER: MTA

SHEET TITLE
ARCHITECTURAL
ELECTRICAL BUILDING FLOOR PLAN AND CODE KEY DETERMINATIONS

SHEET **A-2**
ISSUED FOR BID

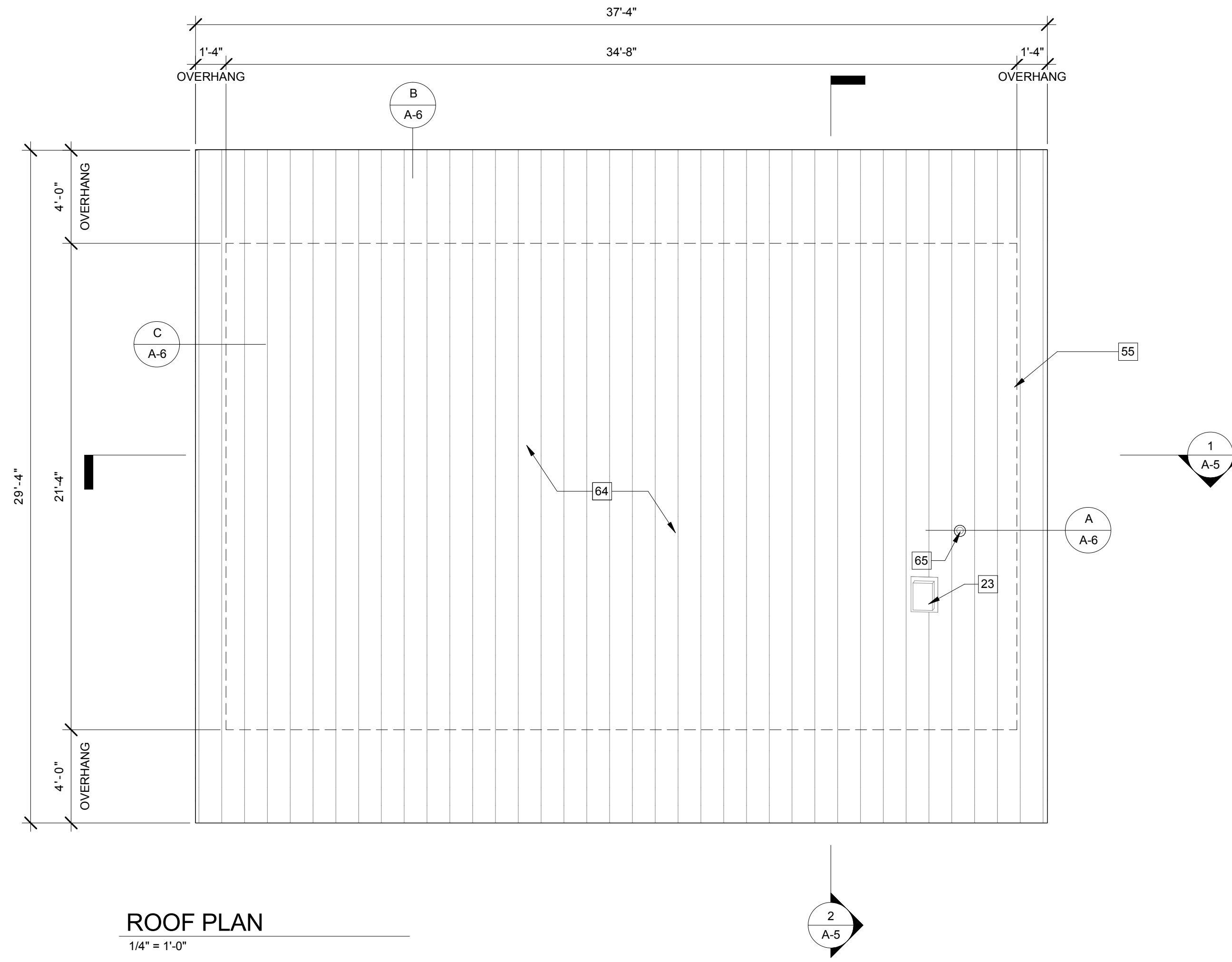
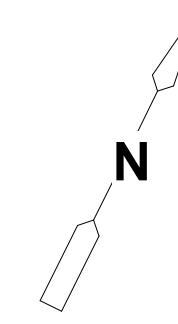
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KEYNOTE LEGEND

KEY VALUE	KEYNOTE TEXT
23	HVAC EQUIP. SEE "H" DWGS
55	OUTLINE OF BUILDING BELOW
64	STANDING SEAM METAL ROOF SYSTEM, TYP
65	VENT THROUGH ROOF, TYP

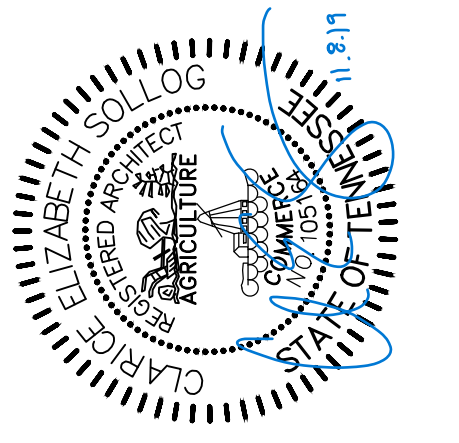
GENERAL NOTES

SEE SHEET A-1 FOR ADDITIONAL GENERAL NOTES



ROOF PLAN
1/4" = 1'-0"

CDM Smith
 CDM Smith Inc.
 651 East 4th Street Suite 100
 Chattanooga, TN 37403
 Tel: (423) 771-4495



DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM



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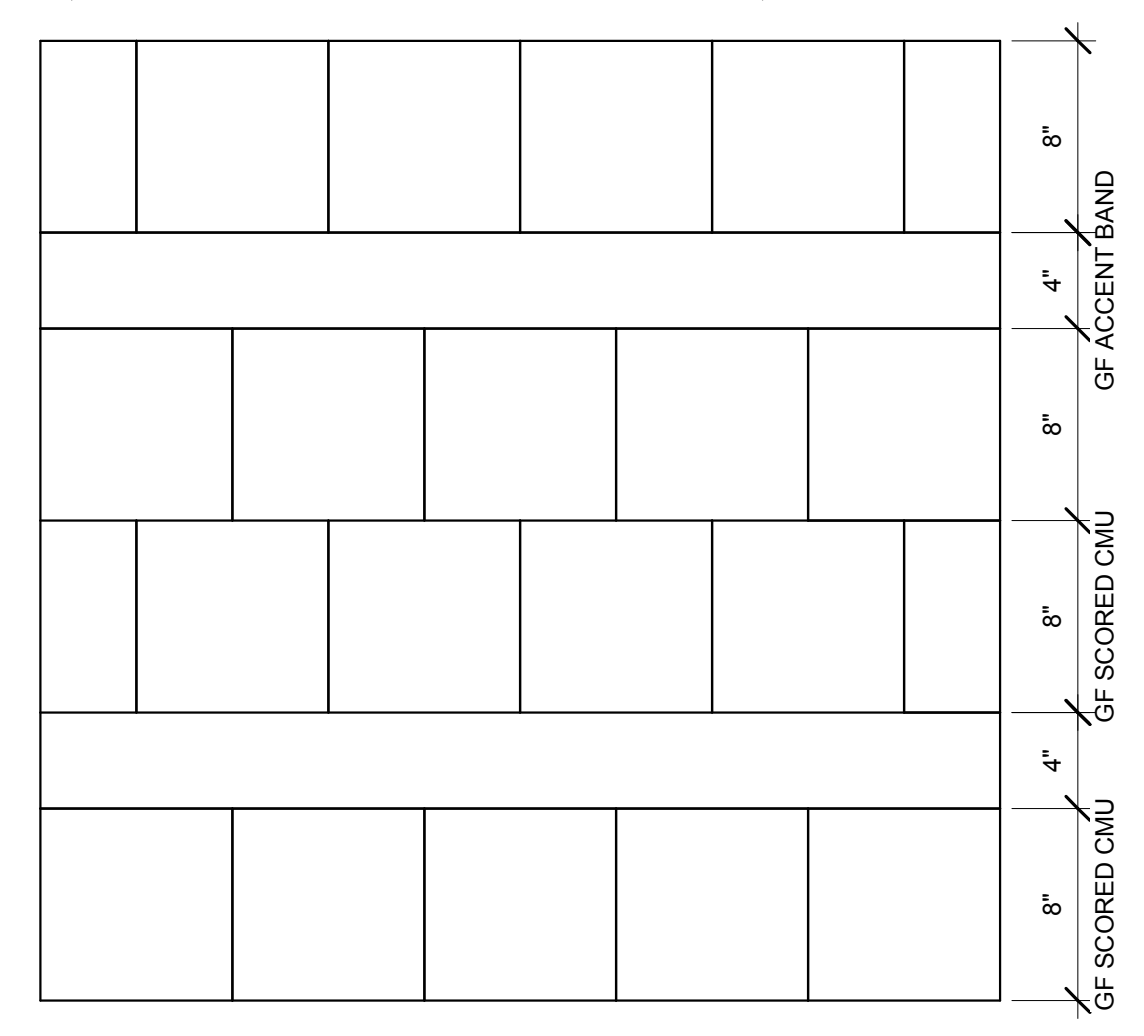
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SHEET TITLE
 ARCHITECTURAL
**ELECTRICAL BUILDING
 ROOF PLAN**

SHEET **A-3**

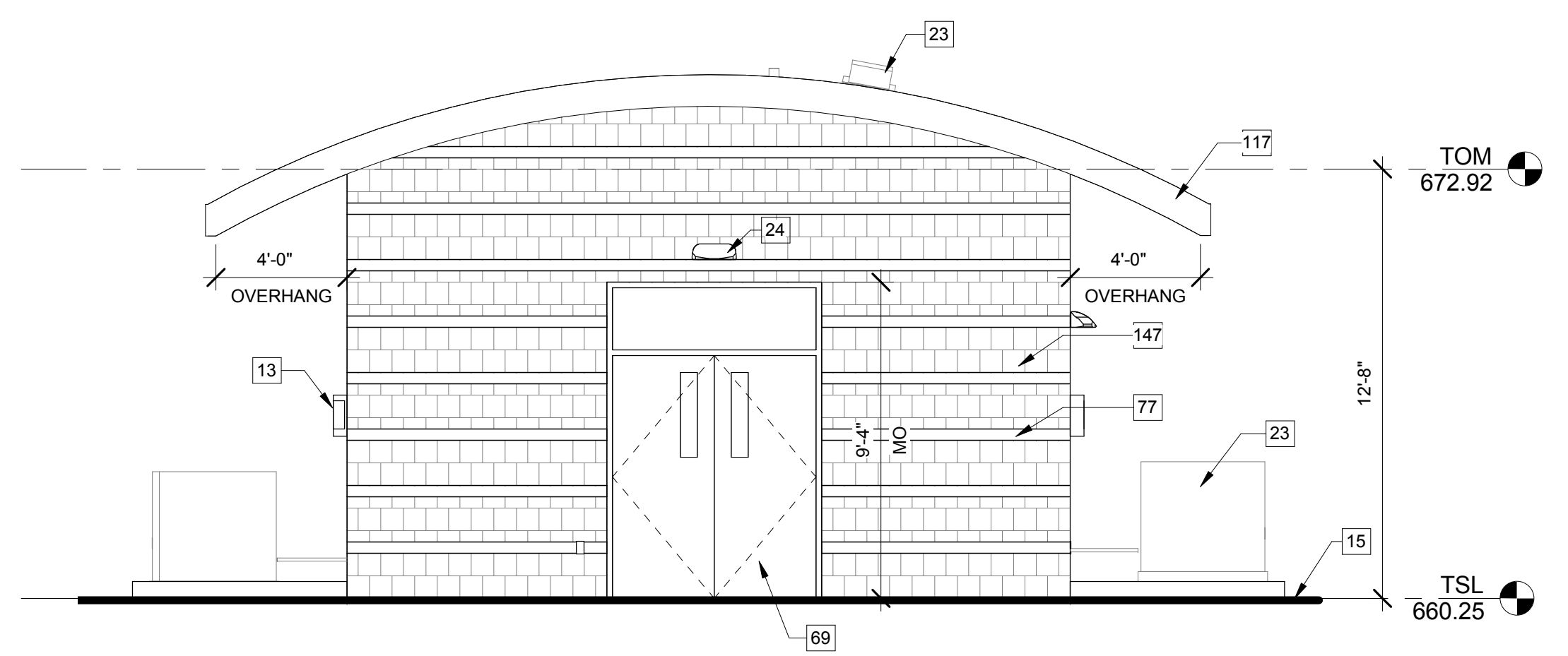
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KEY VALUE	KEYNOTE TEXT
13	ELEC EQUIP, SEE "E" DWGS
15	ASPHALT PAVING, SEE "C" DWGS
23	HVAC EQUIP, SEE "H" DWGS
24	LIGHT FIXTURE, SEE "E" DWGS
28	PLUMBING PIPES, SEE "P" DWGS
64	STANDING SEAM METAL ROOF SYSTEM, TYP
65	VENT THROUGH ROOF, TYP
67	ALUMINUM LOUVERED DOOR AND FRAME, SEE SCHD
69	ALUMINUM DOOR AND FRAME WITH REMOVABLE TRANSOM PANEL, SEE SCHD
70	ALUMINUM DOOR AND FRAME WITH GLAZED TRANSOM PANEL, SEE SCHD
77	4" X 4" CMU GROUNDFACE ACCENT BAND, TYP EVERY THIRD COURSE
117	FASCIA TRIM WITH DRIP, TYP
147	SCORED GROUNDFACE CMU VENEER, TYP

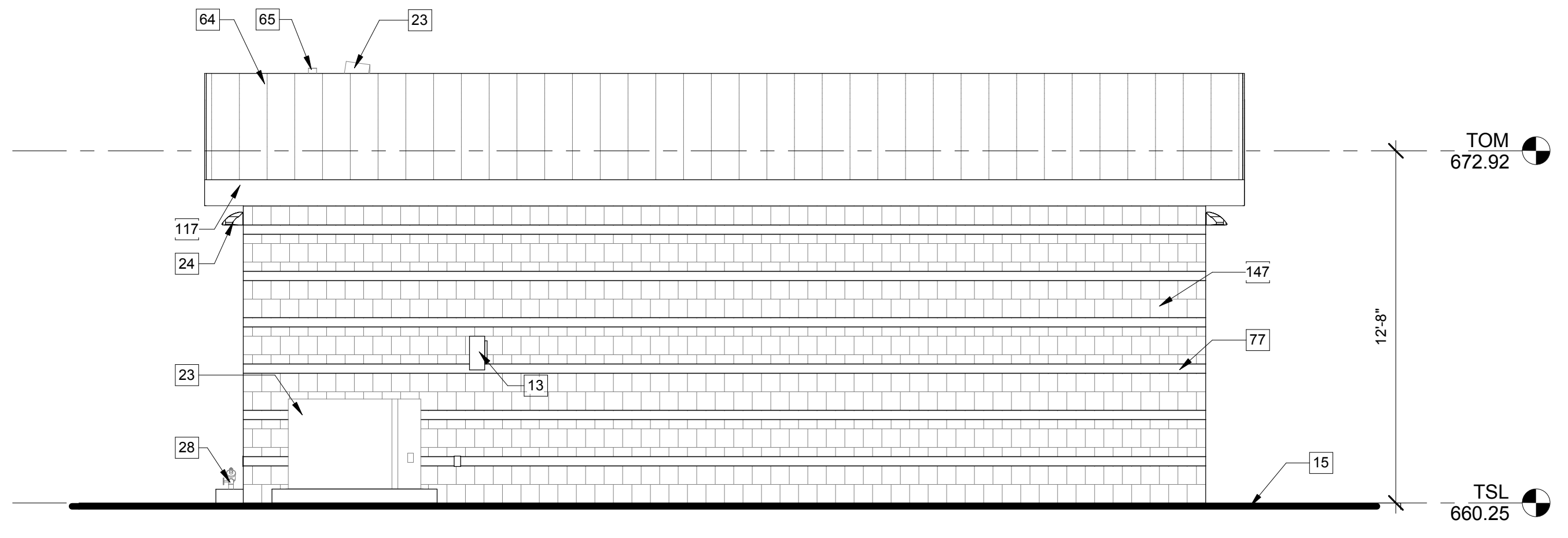


ENLARGED VENEER PATTERN

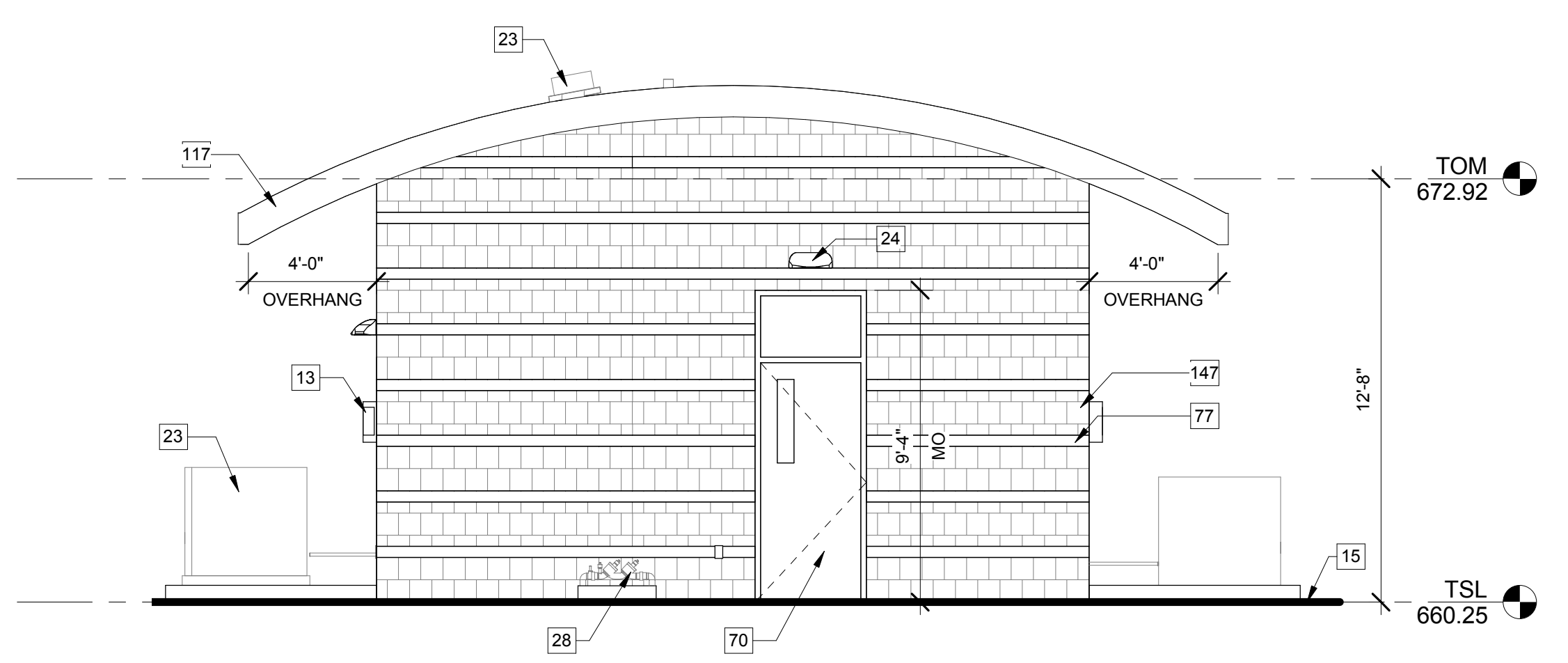
GENERAL NOTES
 SEE SHEET A-1 FOR ADDITIONAL GENERAL NOTES



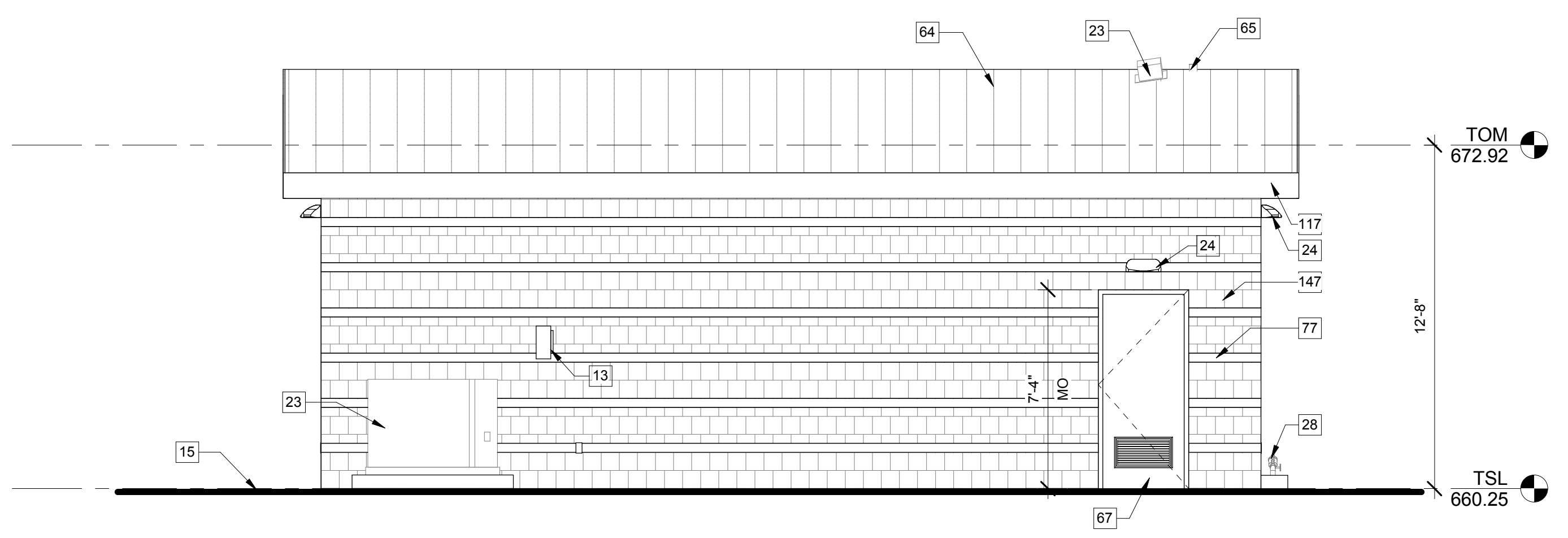
WEST ELEVATION
 1/4" = 1'-0"



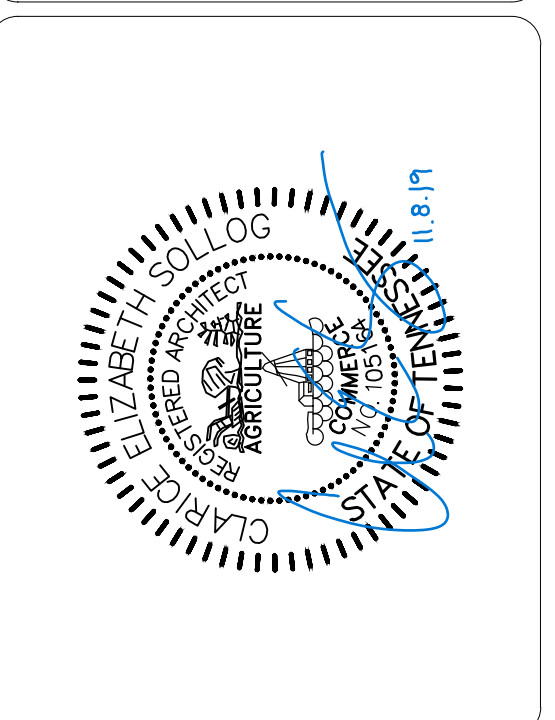
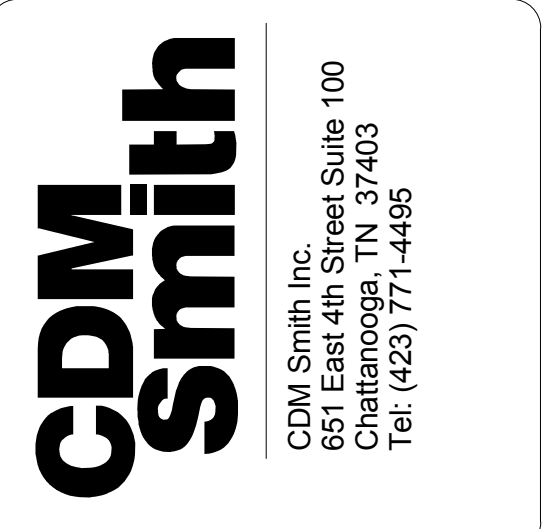
NORTH ELEVATION
 1/4" = 1'-0"



EAST ELEVATION
 1/4" = 1'-0"



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



**DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A**
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM



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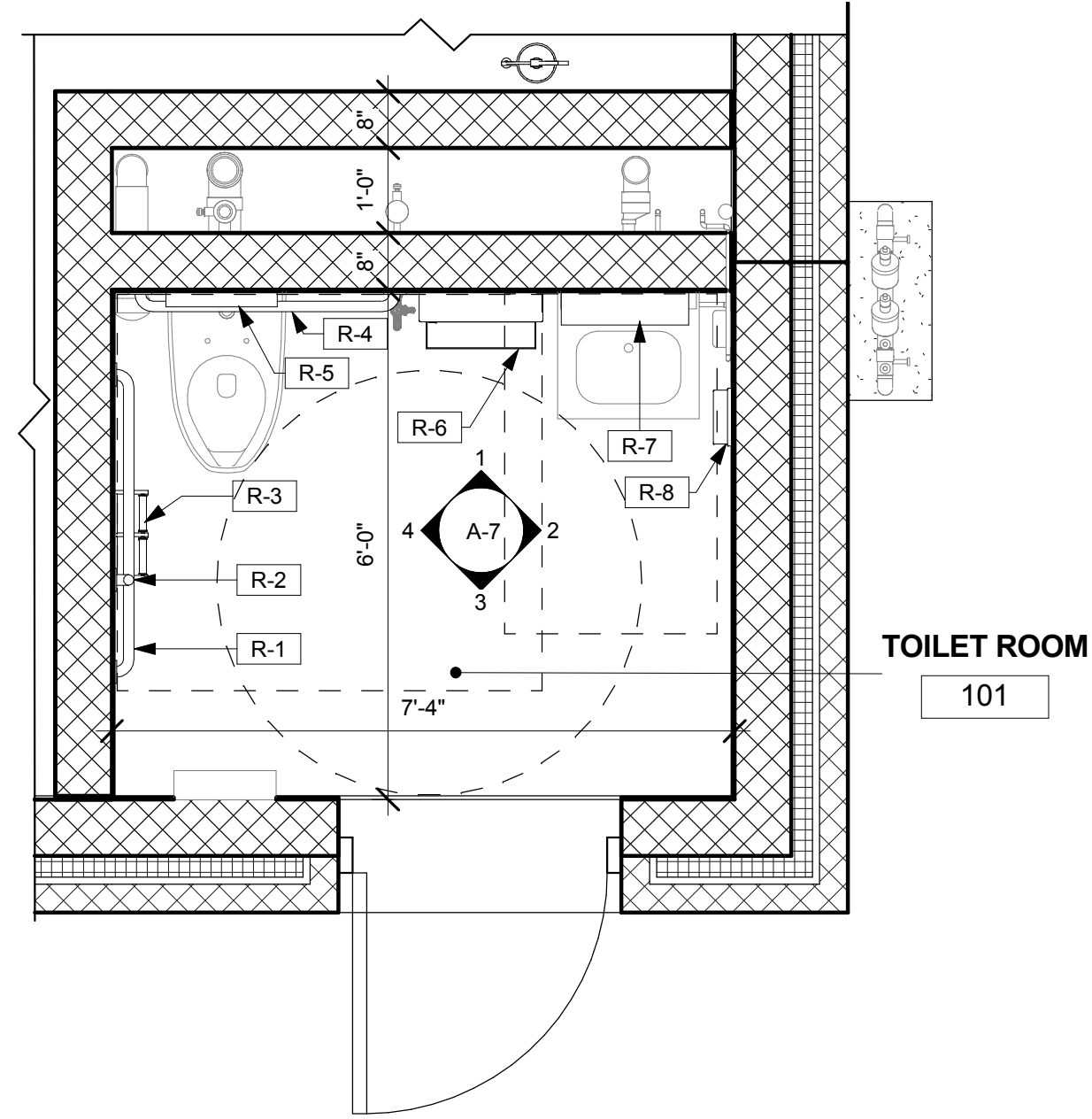
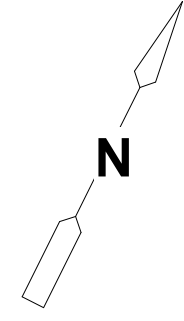
SHEET TITLE
**ARCHITECTURAL
 ELECTRICAL BUILDING
 EXTERIOR ELEVATIONS**

SHEET **A-4**

ISSUED FOR BID

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KEYNOTE LEGEND	
NUMBER	KEYNOTE DESCRIPTION
23	HVAC EQUIP. SEE "H" DWGS
24	LIGHT FIXTURE. SEE "E" DWGS
67	ALUMINUM LOUVERED DOOR AND FRAME. SEE SCHD
86	6" X 6" CERAMIC WALL TILE
87	BUILT UP 2" X 2" CERAMIC BASE TILE
90	INSULATED PIPE WRAP

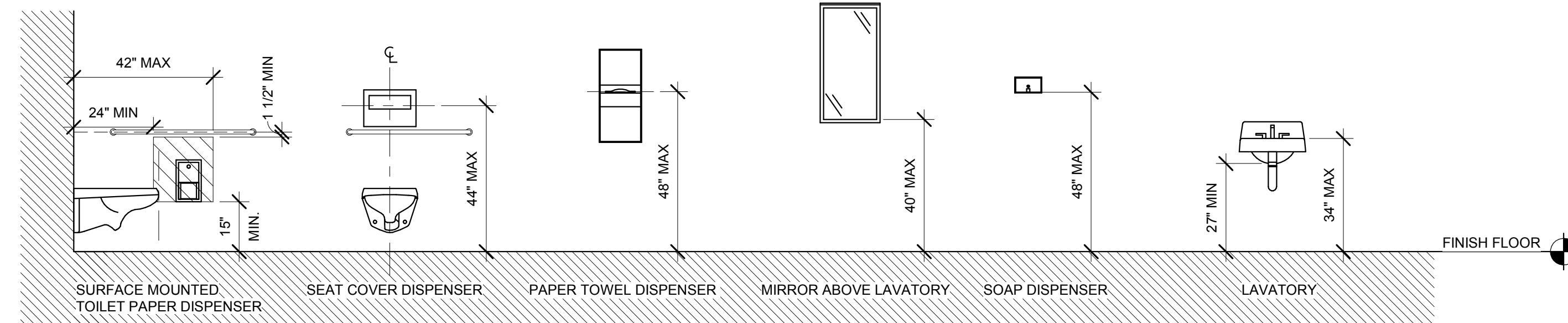
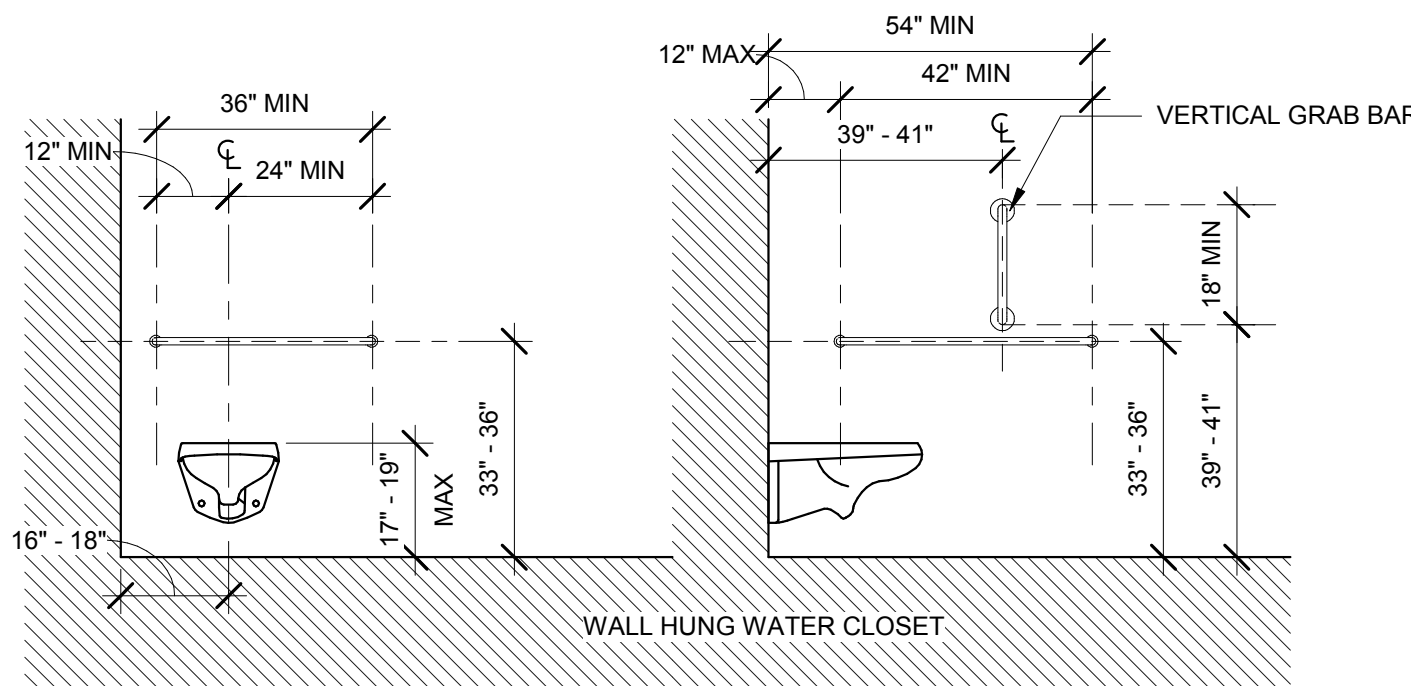


ENLARGED TOILET ROOM FLOOR PLAN
1/2" = 1'-0"

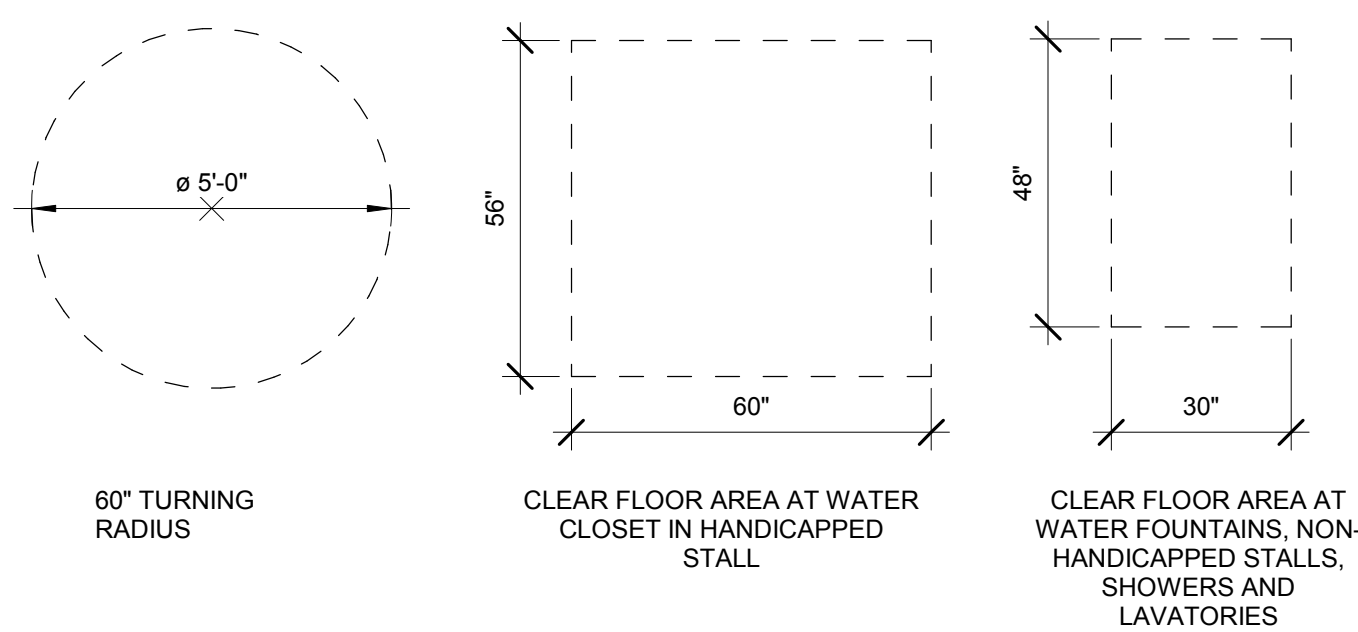
TOILET ACCESSORY SCHEDULE				
TAG	QTY	MODEL	DESCRIPTION	MANUFACTURER
R-1	1	B-6806 X 42	42" X 1 1/2" DIAMETER STAINLESS STEEL GRAB BARS WITH SNAP FLANGE	BOBRICK
R-2	1	B-6806 X 18	18" X 1 1/2" DIAMETER STAINLESS STEEL GRAB BARS WITH SNAP FLANGE	BOBRICK
R-3	1	B-2740	SURFACE MOUNTED MULTI-ROLL TOILET TISSUE DISPENSER	BOBRICK
R-4	1	B-6806 X 36	36" X 1 1/2" DIAMETER STAINLESS STEEL GRAB BARS WITH SNAP FLANGE	BOBRICK
R-5	1	B-221	SURFACE MOUNTED SEAT COVER DISPENSER	BOBRICK
R-6	1	B-3949	SURFACE MOUNTED PAPER TOWEL DISPENSER AND WASTE RECEPTACLE	BOBRICK
R-7	1	B-293 1836	18" X 36" FIXED TILT MIRROR WITH STAINLESS STEEL FRAME	BOBRICK
R-8	1	B-2112	SURFACE MOUNTED SOAP DISPENSER	BOBRICK

BARRIER MOUNTING HEIGHTS

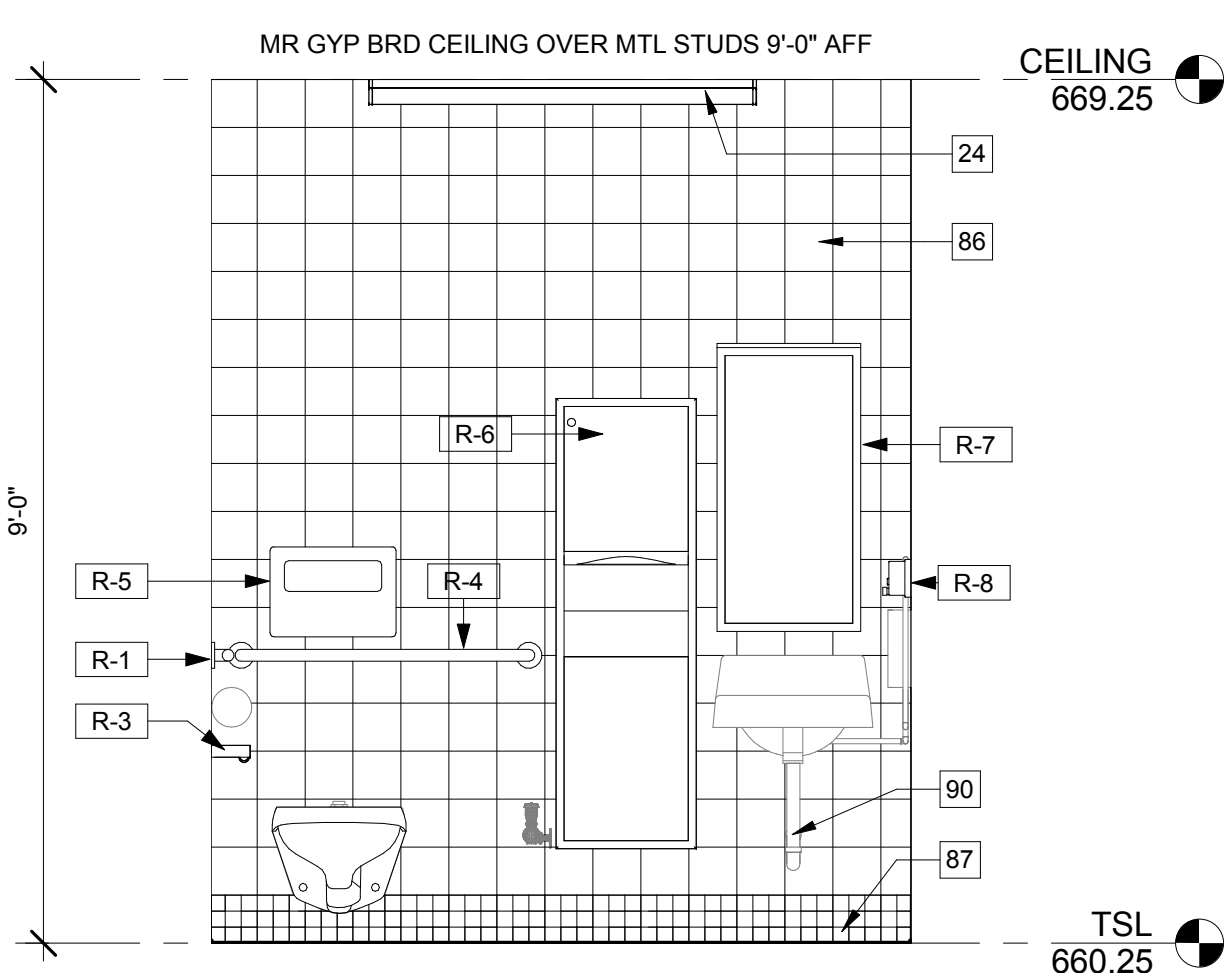
- GENERAL NOTES:
 1. WALL MOUNTED ACCESSORIES SHALL BE MOUNTED IN ACCORDANCE WITH REACH LIMITS APPLICABLE TO INSTALLATION LOCATION:
 - MAXIMUM UNOBSTRUCTED FORWARD OR SIDE REACH IS 48".
 - MAXIMUM OBSTRUCTED FORWARD REACH IS 44".
 - MAXIMUM OBSTRUCTED SIDE REACH IS 46".



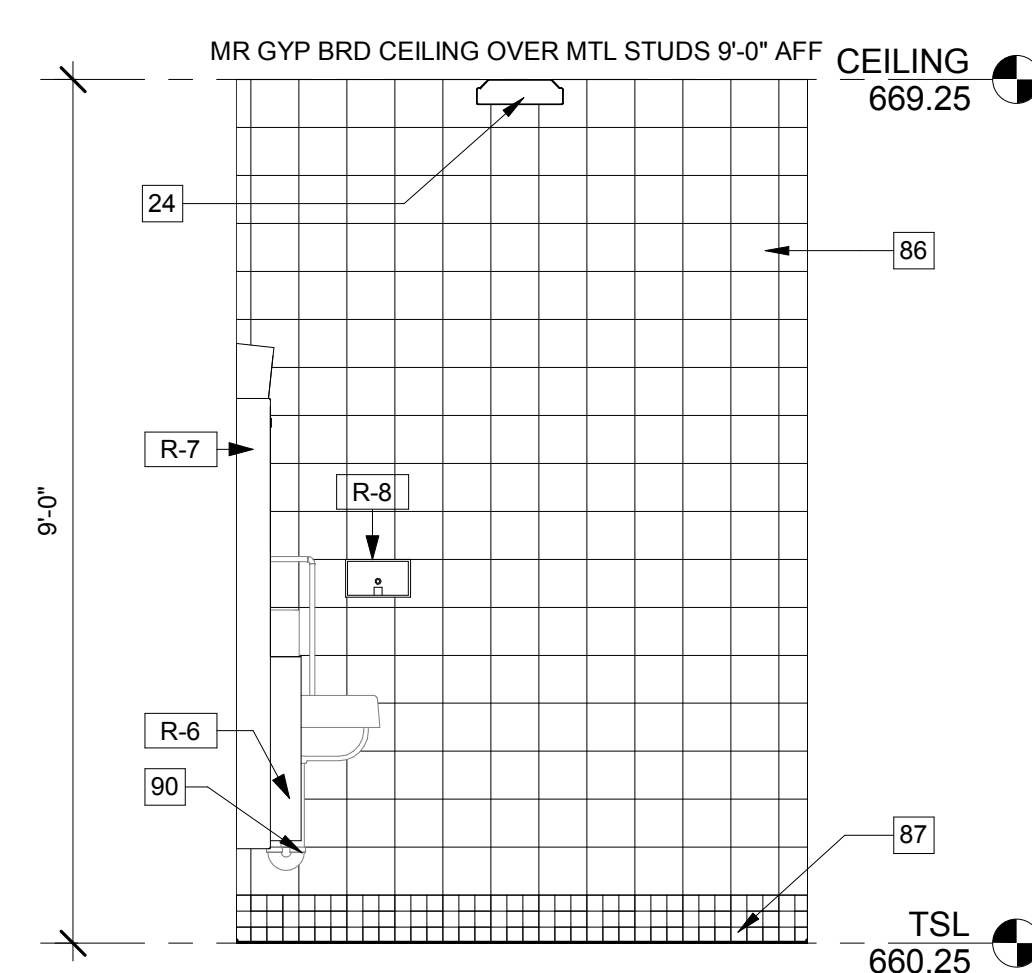
CLEAR FLOOR AREA



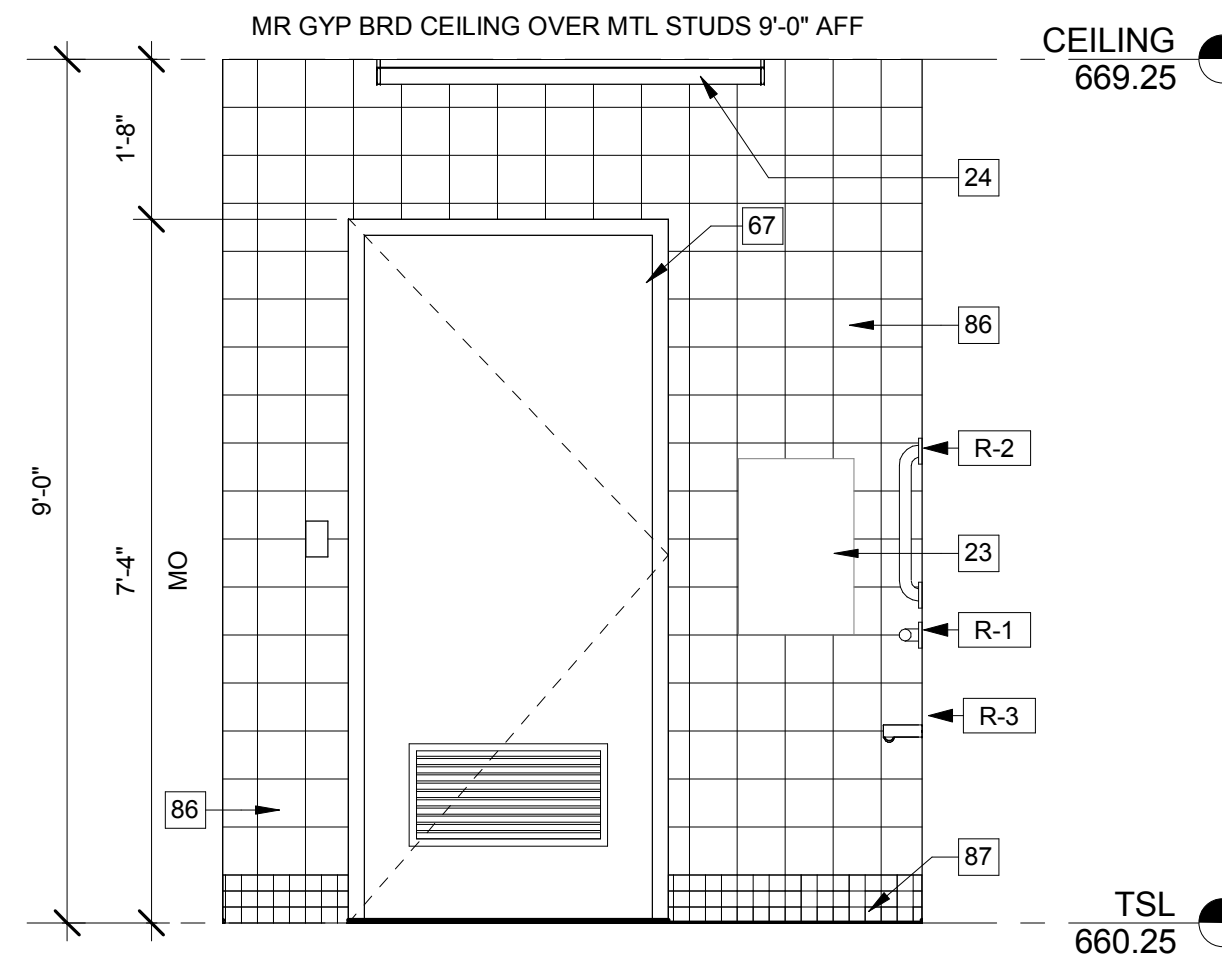
GENERAL NOTES
 SEE SHEET A-1 FOR ADDITIONAL GENERAL NOTES



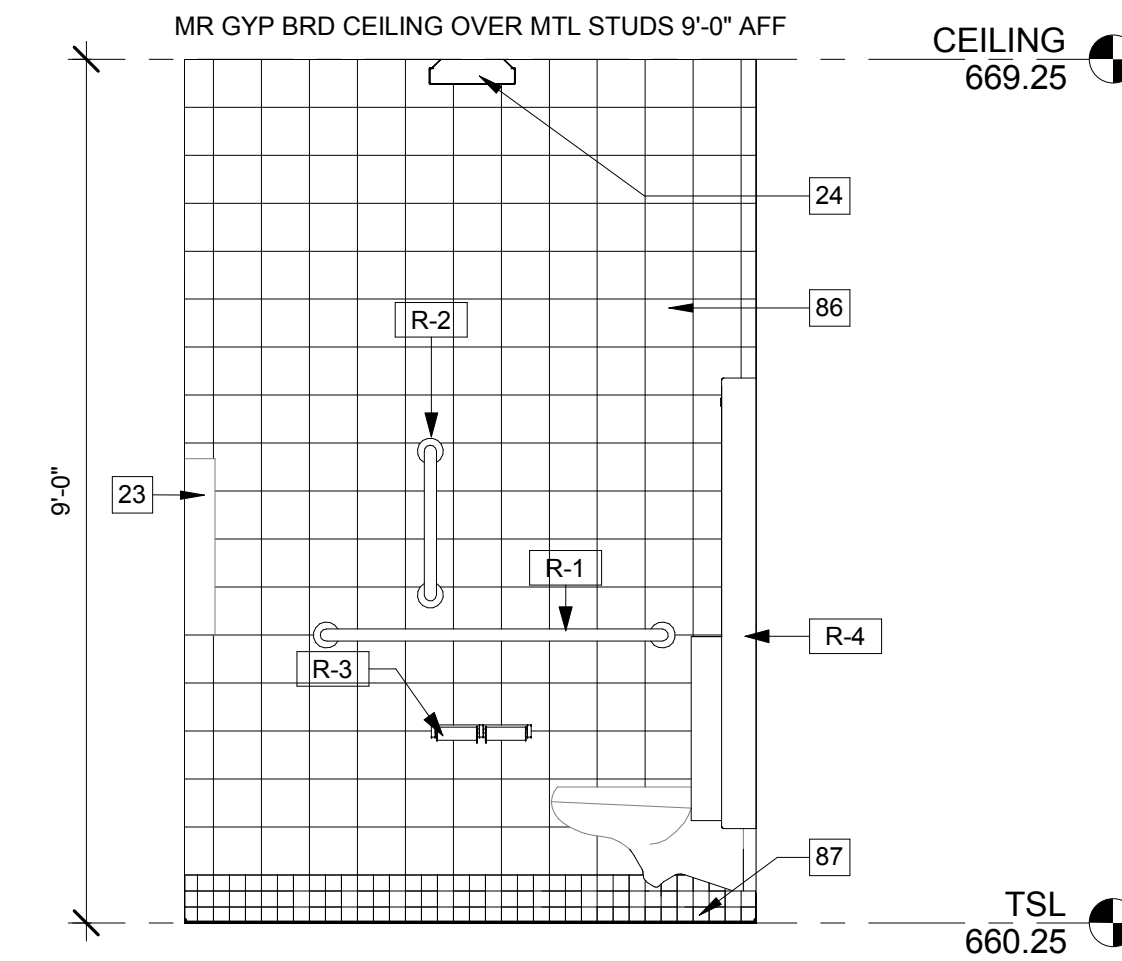
1 TOILET ROOM - NORTH ELEVATION
1/2" = 1'-0"



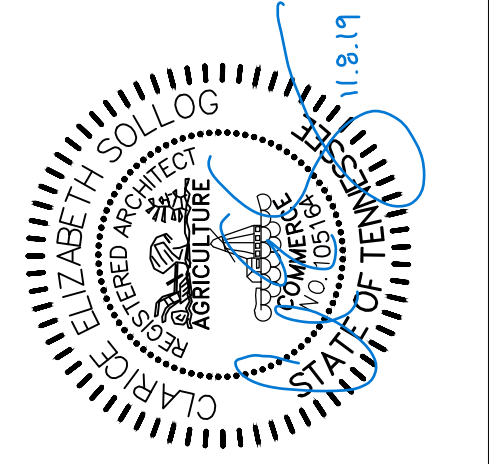
2 TOILET ROOM - EAST ELEVATION
1/2" = 1'-0"



3 TOILET ROOM - SOUTH ELEVATION
1/2" = 1'-0"



4 TOILET ROOM - WEST ELEVATION
1/2" = 1'-0"



DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM



REV	DATE	DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE
 THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: CES DESIGNER: ARC CHECKER: MTA
 SHEET TITLE: ARCHITECTURAL
ELECTRICAL BUILDING TOILET ROOM ENLARGED PLAN AND INTERIOR ELEVATIONS
 SHEET **A-7**

GENERAL NOTES

DESIGN CRITERIA:

CODES:

- INTERNATIONAL BUILDING CODE, 2012 EDITION
- ENVIRONMENTAL STRUCTURES: ACI 350 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES"
- OTHER STRUCTURES: ACI 318-11 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
- AISC MANUAL OF STEEL CONSTRUCTION, FOURTEENTH EDITION
- ASCE 7-10 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES"
- ACI 530-11

DESIGN LOADS:

LIVE LOADS:

- SLABS ON GRADE 300 PSF
- ELEVATED PROCESS SLABS 200 PSF
- GRATING 100 PSF

ROOF SNOW LOAD:

- GROUND SNOW LOAD, PG 10 PSF
- FLAT SNOW LOAD, PF 11 PSF
- SNOW EXPOSURE FACTOR, CE 1.0
- SNOW LOAD IMPORTANCE FACTOR, I 1.1
- THERMAL FACTOR, CT 1.0

SUPERIMPOSED DEADLOADS:

- ROOFS AS NOTED
- FLOORS AS NOTED

WINDLOADS:

- RISK CATEGORY III
- ULTIMATE DESIGN WIND SPEED 120 MPH
- NORMAL DESIGN WIND SPEED 93 MPH
- EXPOSURE CATEGORY C
- INTERNAL PRESSURE COEFFICIENT SEE DESIGN DRAWINGS
- COMPONENTS AND CLADDING SEE DESIGN DRAWINGS

EARTHQUAKE:

- SEISMIC DESIGN CATEGORY C
- SEISMIC IMPORTANCE FACTOR, I 1.25
- SITE CLASS D
- MAPPED SPECTRAL RESPONSE ACC, SS 0.374
- MAPPED SPECTRAL RESPONSE ACC, S1 0.125
- SPECTRAL RESPONSE COEFFICIENT, SDS 0.374
- SPECTRAL RESPONSE COEFFICIENT, SD1 0.192
- BASIC SEISMIC-FORCE-RESISTING SYSTEM SEE DESIGN DRAWINGS
- DESIGN BASE SHEAR SEE DESIGN DRAWINGS
- SEISMIC RESPONSE COEFFICIENT, CS SEE DESIGN DRAWINGS
- RESPONSE MODIFICATION FACTOR, R SEE DESIGN DRAWINGS
- ANALYSIS PROCEDURE USED SEE DESIGN DRAWINGS

FLOOD DESIGN DATA:

- 1% ANNUAL CHANCE FLOOD BASE FLOOD ELEVATION ZONE AE NAVD 88 EL 659.00'

CONCRETE 28-DAY STRENGTH:

- STRUCTURAL CONCRETE 4500 PSI
- MASONRY FILLED CELL GROUT 2500 PSI
- MICROPILE 4000 PSI

FOUNDATIONS:

- ALLOWABLE BEARING PRESSURE FOR SHALLOW FOOTINGS OVER SUBSURFACE PREPARED AS PER SPECIFICATIONS:
- ALLOWABLE MICROPILE LOADS (AS SHOWN ON DETAIL A/SD-3):
- DIVERSION STRUCTURE, WET WEATHER PUMP STATION, STREAM CROSSING PIER:
 - COMPRESSIVE: 200 KIP
 - UPLIFT 100 KIP
 - LATERAL: 2 KIP

GENERAL CONDITIONS:

ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, CIVIL, ELECTRICAL AND SHOP DRAWINGS AND SPECIFICATIONS.

THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FACILITY, SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.

FOR ALL ITEMS EMBEDDED IN OR PASSED THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL, HEATING AND VENTILATION DRAWINGS FOR TYPE, SIZE, LOCATION AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.

THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATION AND OTHERS.

SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS. SUBMIT ANCHORING INFORMATION TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURES.

ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

STANDARD DETAILS (SHOWN ON SD SHEETS) APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

NO BACKFILL SHALL BE PLACED AGAINST WALL UNTIL WALLS AND SLABS (OR HORIZONTAL BEAMS AND STRUTS) HAVE ATTAINED DESIGN STRENGTH.

WHEN BACKFILLING AROUND STRUCTURES, BRING UP BACKFILL UNIFORMLY AROUND THE STRUCTURE UNLESS INDICATED OTHERWISE. CONTROL BACKFILL LEVELS AROUND THE ENTIRE PERIMETER OF THE STRUCTURE SUCH THAT THE GRADE DIFFERENTIAL DOES NOT EXCEED THREE FEET.

SEE SHEETS SD-5 AND SD-6 FOR STRUCTURAL SPECIAL INSPECTION REQUIREMENTS.

UNLESS OTHERWISE NOTED, ALL PIPES UNDER SOIL SUPPORTED STRUCTURAL SLABS AND FOOTINGS SHALL BE ENCASED IN REINFORCED CONCRETE AS SHOWN ON THE STRUCTURAL DRAWINGS. PIPES SHALL BE PRESSURE TESTED BEFORE ENCASING. NOT ALL PIPING SHOWN ON STRUCTURAL DRAWINGS. REFER TO CIVIL, PROCESS MECHANICAL, HVAC AND PLUMBING DRAWINGS FOR PIPING SIZE AND LOCATIONS.

CONCRETE:

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.

ALL CONCRETE SHALL BE AIR-ENTRAINED.

WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.

ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS CEMENT FINISHING IS COMPLETED OR FORMS ARE REMOVED.

ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATION OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWING.

REINFORCING STEEL:

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064

REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS.

ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS. REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

- CONCRETE CAST AGAINST EARTH 3"
- FORMED SURFACES IN CONTACT WITH SOIL, SEWAGE, WATER OR EXPOSED TO WEATHER 2"
- FORMED SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH SOIL:
- SLABS, WALLS AND JOISTS 3/4"
- BEAMS AND COLUMNS 1-1/2"

LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL.

THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.

WATERTIGHTNESS TESTING REQUIREMENTS:

THE WATER-CONTAINING STRUCTURES SHALL BE FILLED WITH POTABLE WATER AND TESTED FOR WATERTIGHTNESS PER SPECIFICATION SECTION 014525.

PERFORM WATERTIGHTNESS TESTING PRIOR TO WATERPROOFING AND DAMPROOFING, INSTALLATION OF COATINGS AND LININGS, AND PRIOR TO PLACING BACKFILL AROUND STRUCTURES.

ALL SEEPING CRACKS SHALL BE INJECTED WITH WATER ACTIVATED HYDROPHILIC POLYURETHANE GROUT UNTIL SEEPAGE STOPS.

FLOTATION CONSIDERATION:

STRUCTURES WERE DESIGNED TO BE NON-BUOYANT AFTER THE STRUCTURE IS PLACED INTO SERVICE. THEREFORE, THE STRUCTURE MAY BE BUOYANT DURING CONSTRUCTION. THE GENERAL CONTRACTOR SHALL PROTECT ALL STRUCTURES (NEW AND EXISTING) FROM FLOTATION DURING CONSTRUCTION, REGARDLESS OF GROUNDWATER LEVELS, UNTIL STRUCTURES ARE PLACED IN OPERATION.

CONCRETE MASONRY:

DESIGN CRITERIA:

- DESIGN COMPRESSIVE STRENGTH OF MASONRY AT 28 DAYS $f'm = 1,500$ psi
- ALLOWABLE STEEL STRESS $fs = 32,000$ psi

CONTINUOUS INSPECTION IS REQUIRED FOR ALL MASONRY WORK.

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS AND:

- THE NATIONAL CONCRETE MASONRY ASSOCIATION "SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF LOAD BEARING STRUCTURES."
- ACI 530 "BUILDING CODE REQUIREMENTS FOR REINFORCED MASONRY STRUCTURES."

MATERIALS:

- BLOCK: CONFORM TO ASTM C90 - LOAD BEARING, NORMAL WEIGHT TWO CELL, 8"x8"x16" (COMPRESSIVE STRENGTH, NET AREA 1900 PSI)
- MORTAR: CONFORM TO ASTM C270, TYPE S. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS - 1800 PSI. UTILIZE TYPE II CEMENT AND TYPE S LIME.
- STEEL: DUR-O-WAL OR EQUAL LADDER TYPE JOINT REINFORCEMENT AT EVERY SECOND COURSE (16" OC) BOND BEAM AND FILLED CELL REINFORCEMENT AS PER DRAWINGS (ASTM A615, GRADE 60).

CONSTRUCTION:

- ALL FILLED CELLS AND COLUMNS SHALL BE POURED AT LEAST TWO (2) HOURS PRIOR TO POURING LINTEL BLOCK OR TIE BEAMS.
- MAXIMUM CONSTRUCTION HEIGHT OF MASONRY WALLS WITHOUT FILLED CELL OR COLUMN POURS IS TO BE 8'-0". THE CONCRETE FOR FILLED CELLS SHALL BE RODDED OR PUDDLED DURING PLACEMENT TO ENSURE COMPLETE FILLING TO THE BLOCK CORE.
- SEE STANDARD DETAILS FOR LINTEL REQUIREMENTS OVER OPENINGS.
- PROVIDE CLEAN OUT AND INSPECTION BLOCK OUTS IN CELLS CONTAINING REINFORCEMENT.

GEOTECHNICAL REPORT:

GEOTECHNICAL REPORT ENTITLED, "GEOTECHNICAL INTERPRETIVE REPORT," PREPARED BY CDM SMITH, DATED SEPTEMBER 2019.

LEGEND & SYMBOLS

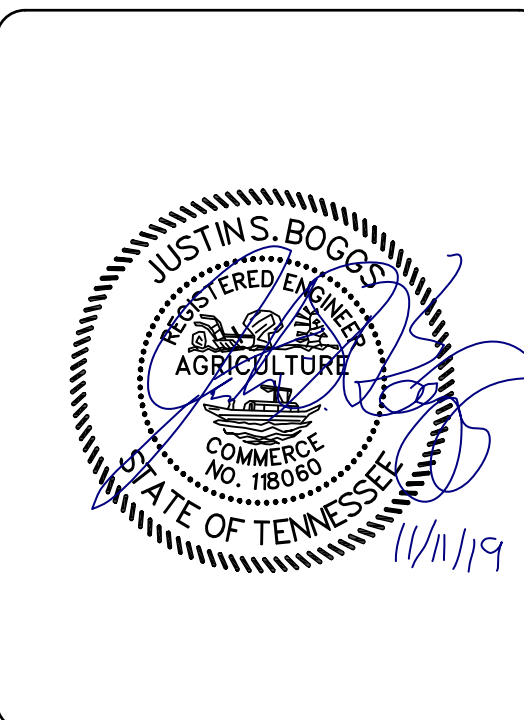
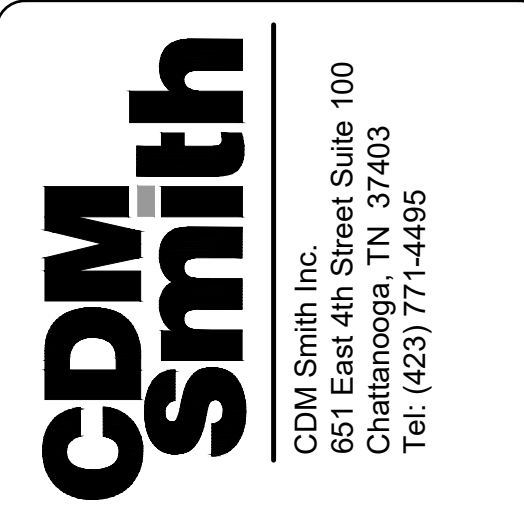
	GRATING SPAN DIRECTION		GRATING
	EARTH FILL		CHECKERED PLATE
	UNDISTURBED EARTH		SAND
	CONCRETE		GROUT
	CONCRETE MASONRY		DEMOLITION
	STEEL		STRUCTURAL FILL

ABBREVIATIONS

Ø	DIAMETER	INV	INVERT
#	NUMBER	JT	JOINT
&	AND	KO	KNOCKOUT
@	AT	LG	LENGTH
AB	ANCHOR BOLT	LLH	LONG LEG HORIZONTAL
ABV	ABOVE	LLV	LONG LEG VERTICAL
ADDL	ADDITIONAL	LNTL	LINTEL
AL	ALUMINUM	LOC	LOCATION/LOCATED
ALT	ALTERNATE (ING)	LONG.	LONGITUDINAL
APPROX	APPROXIMATELY	LP	LOW POINT
B TO B	BACK TO BACK	LT	LEFT
BEV	BEVEL (ED)	LW	LIGHTWEIGHT
BLK	BLOCKING	MAS	MASONRY
BOT	BOTTOM	MAX	MAXIMUM
BRG	BEARING	MB	MACHINE BOLTS
CIRC	CIRCUMFERENTIAL	MCJ	MASONRY CONTROL JOINT
CJ	CONSTRUCTION JOINT	MFR	MANUFACTURER
CL	CENTERLINE	MIN	MINIMUM
CLJ	CONTROL JOINT	MO	MASONRY OPENING
CLR	CLEAR	NF	NEAR FACE
CMU	CONCRETE MASONRY UNITS	NSG	NON-SHRINK GROUT
COL	COLUMN	OC	ON CENTER
CONC	CONCRETE	OD	OUTSIDE DIAMETER
CONN	CONNECTION	OF	OUTSIDE FACE
CONT	CONTINUOUS	OH	OVERHANG
CPLG	COUPLING	OPNG	OPENING
CRS	COURSE (S)	OPP	OPPOSITE
CSK	COUNTERSINK	OPT	OPTIONAL
CTR	CENTER(ED)	PJF	PREMOLDED JOINT FILLER
DET	DETAIL	PLYWD	PLYWOOD
DIA	DIAMETER	PREFAB	PREFABRICATED
DIAG	DIAGONAL	PROJ	PROJECTION
DIR	DIRECTION	PVMT	PAVEMENT
DL	DEAD LOAD	R	RISER(S)
DO.	DITTO	RAD	RADIUS
DWG	DRAWING	RC	REINFORCED CONCRETE
DWL	DOWEL	REF	REFERENCE/REFER
EB	EXPANSION BOLT	REINF	REINFORCE (D, ING)
EF	EACH FACE	REQD	REQUIRED
EL	ELEVATION	REV	REVISION
EQ	EQUAL (LY)	RLG	RAILING
ES	EACH SIDE	RO	ROUGH OPENING
EW	EACH WAY	RT	RIGHT
EXST	EXISTING	SCJ	SLAB CONTROL JOINT
EXP JT	EXPANSION JOINT	SECT	SECTION
EXT	EXTERIOR	SP	SPACE (S, ED)
f'c	CONCRETE COMPRESSION STRESS	SQ	SQUARE
f'm	MASONRY PRISM STRESS	SS	STAINLESS STEEL
FAB	FABRICATE (OR, ED)	STD	STANDARD
FDN	FOUNDATION	STIF	STIFFENER
FF	FAR FACE	STIR.	STIRRUP (S)
FHMS	FLATHEAD MACHINE SCREW	SYM	SYMMETRICAL
FHWS	FLATHEAD WOOD SCREW	T	TREAD(S)
FL	FLOOR	T/	TOP OF
FRP	FIBERGLASS REINFORCED PLASTIC	T&B	TOP AND BOTTOM
FTG	FOOTING	TF	TOP FACE
GALV	GALVANIZED	THD	THREADED
GLB	GLASS BLOCK	TOC	TOP OF CONCRETE
GR	GRADE	TRNSV	TRANSVERSE
GRGT	GRATING	TYP	TYPICAL
H	HIGH	UON/UNO	UNLESS NOTED OTHERWISE
HAS.	HEADED ANCHOR STUD	VB	VAPOR BARRIER
HDR	HEADER	VIF	VERIFY IN FIELD
HOR	HORIZONTAL	W	WIDE
HP	HIGH POINT	W/	WITH
ID	INSIDE DIAMETER	W/O	WITHOUT
IE	INVERT ELEVATION	WP	WORKING POINT
IF	INSIDE FACE	WSTP	WATERSTOP
IN	INTERIOR	WWF	WELDED WIRE FABRIC

ABBREVIATION NOTES:

1. ABBREVIATIONS AND DESIGNATIONS FOR STEEL MEMBERS MAY BE FOUND IN THE CURRENT MANUAL OF STEEL CONSTRUCTION BY AISC.
2. ABBREVIATIONS OF TECHNICAL SOCIETIES AND TRADE ASSOCIATIONS MAY BE FOUND IN THE SPECIFICATIONS.
3. WELDING SYMBOLS AND ABBREVIATIONS MAY BE FOUND IN AWS 2.4.



DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM

REV	DATE	REVISION DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.

PROJECT NO: 129699-109746

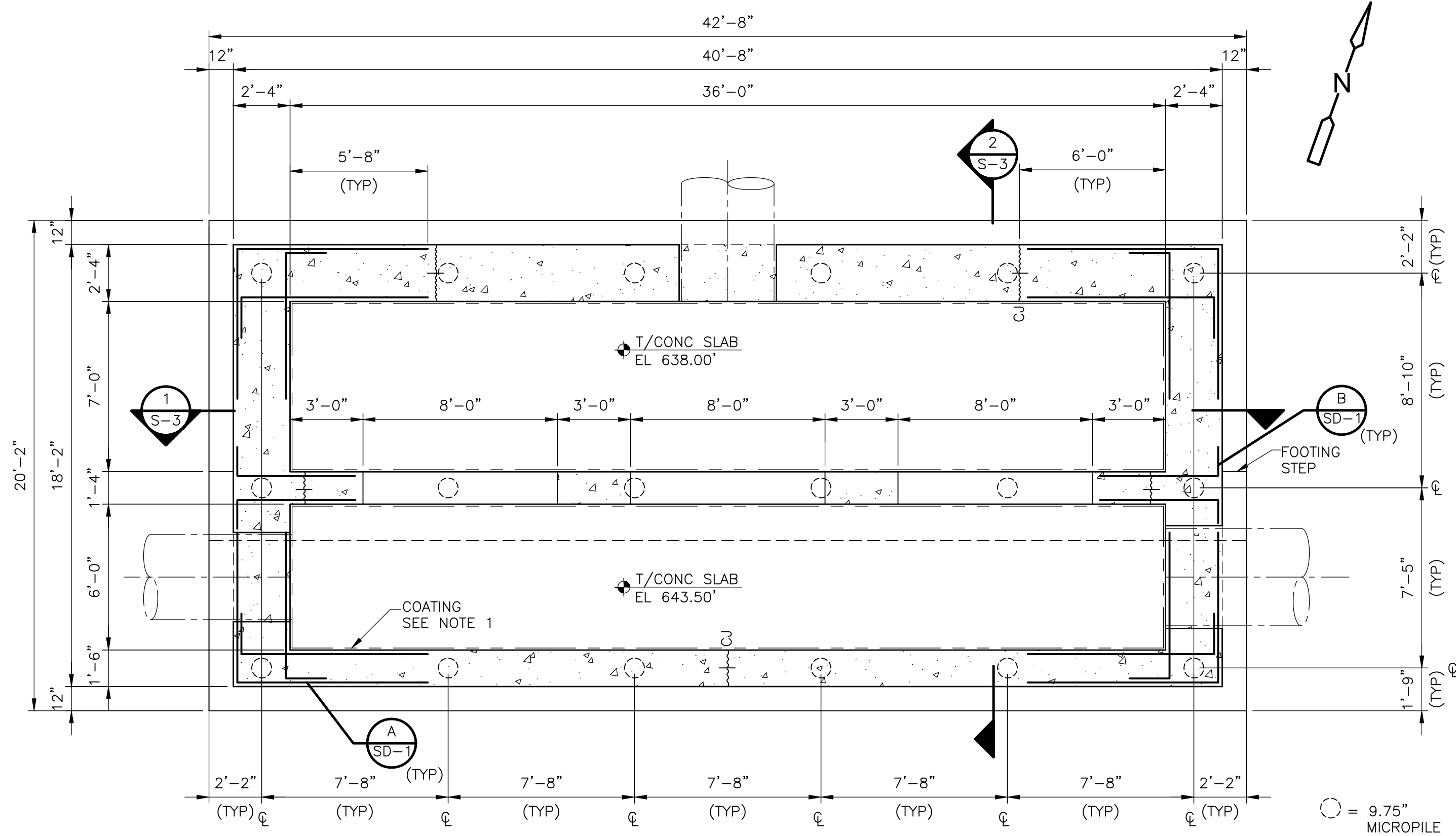
DATE: NOVEMBER 2019

DISC. LEAD: PHK	DESIGNER: PCS	CHECKER: JSB
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SHEET TITLE
STRUCTURAL
STANDARD STRUCTURAL
NOTES AND
ABBREVIATIONS

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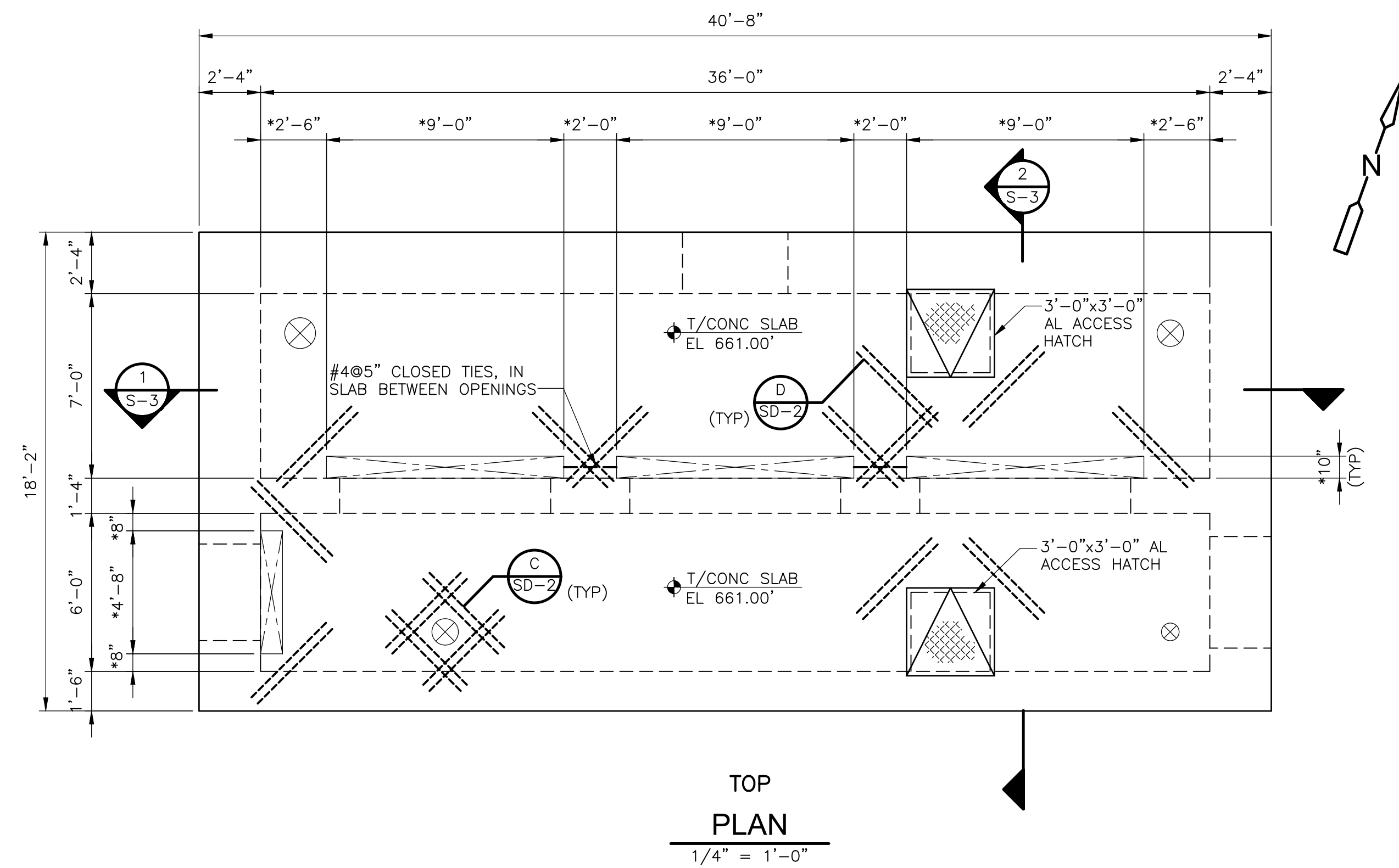


FOUNDATION PLAN
1/4" = 1'-0"

NOTES:

1. REFER TO SPECIFICATION 099723 FOR CONCRETE COATING.
2. REFER TO SD-3 FOR MICROPILE LENGTH, EMBEDMENT AND REINFORCING.
3. REFER TO DETAIL B/SD-3 FOR NEOPRENE SLIDE GATE SEAL AT ALL GATE PENETRATIONS THROUGH TOP SLAB.
4. * DIMENSION SHOWN FOR OPENING IS PRELIMINARY AND SHALL BE COORDINATED WITH FINAL APPROVED EQUIPMENT SUBMITTALS.

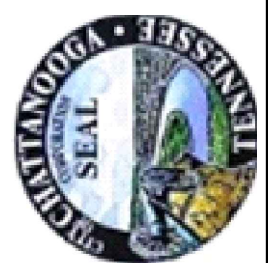
DESIGN LOAD DATA - DIVERSION STRUCTURE	
SEISMIC BASIC SEISMIC FORCE RESISTING SYSTEM:	CONCRETE CAST-IN-PLACE LIQUID CONTAINING STRUCTURE DESIGNED IN ACCORDANCE WITH ACI 350.3
SEISMIC RESPONSE COEFFICIENT:	Ci: 0.374 Cc: 0.174 Ct: 0.15
RESPONSE MODIFICATION FACTOR, R:	Ri: 3.0 R _c : 1.0
ANALYSIS PROCEDURE USED:	EQUIVALENT LATERAL FORCE PROCEDURE
DESIGN BASE SHEAR:	$[(P_i + P_w + P_r)^2 + P_c^2 + P_y^2]^{0.5}$
REFER TO SHEET S-1 FOR DESIGN LOAD DATA THAT IS THE SAME FOR ALL STRUCTURES.	



TOP PLAN
1/4" = 1'-0"



DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM



REV	DATE	REVISION DESCRIPTION

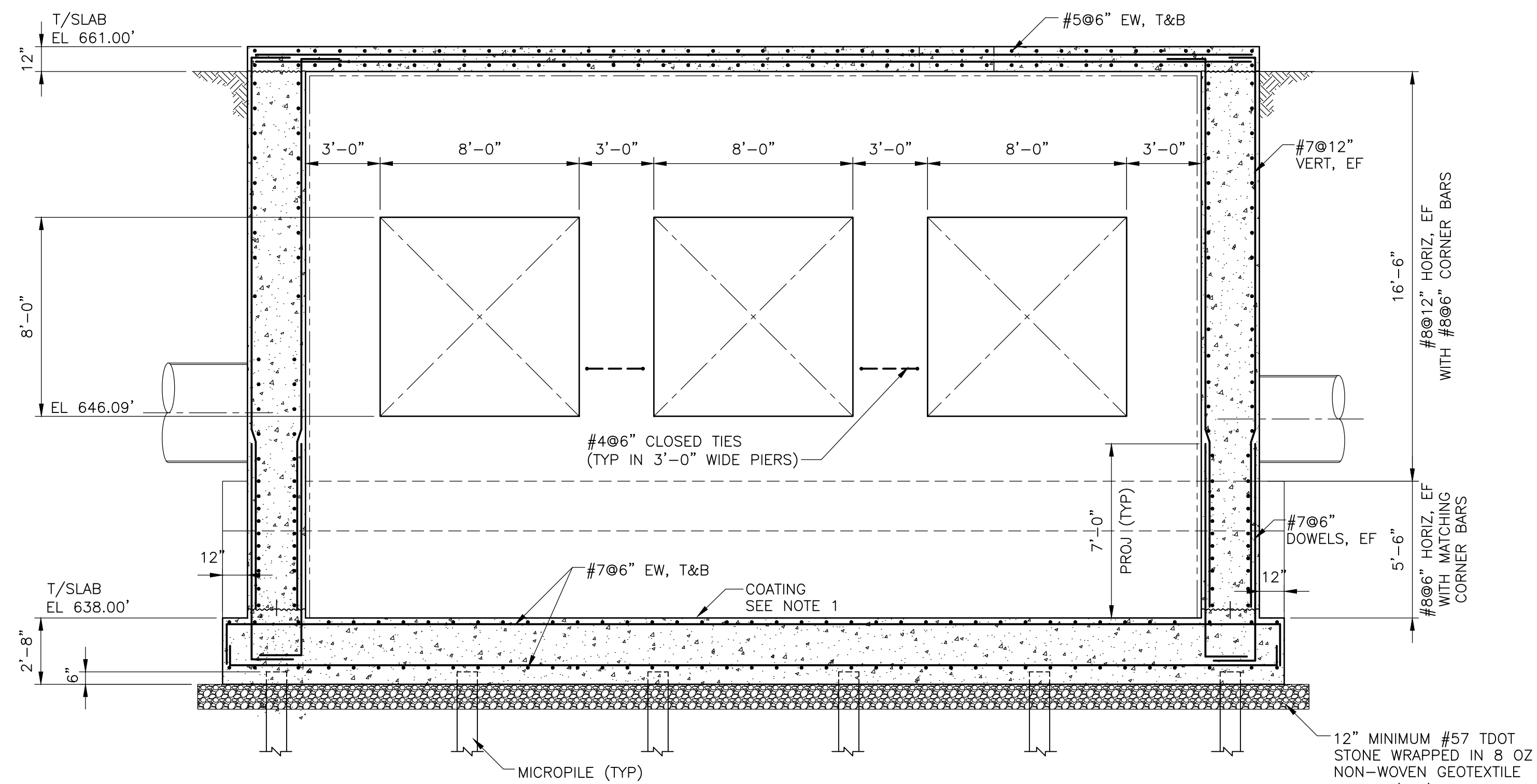
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THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
PROJECT NO: 129699-109746
DATE: NOVEMBER 2019
DISC. LEAD: PHK DESIGNER: S. SANKAR CHECKER: JSB

SHEET TITLE
STRUCTURAL
DIVERSION STRUCTURE
FOUNDATION AND
TOP PLANS

SHEET S-2

ISSUED FOR BID

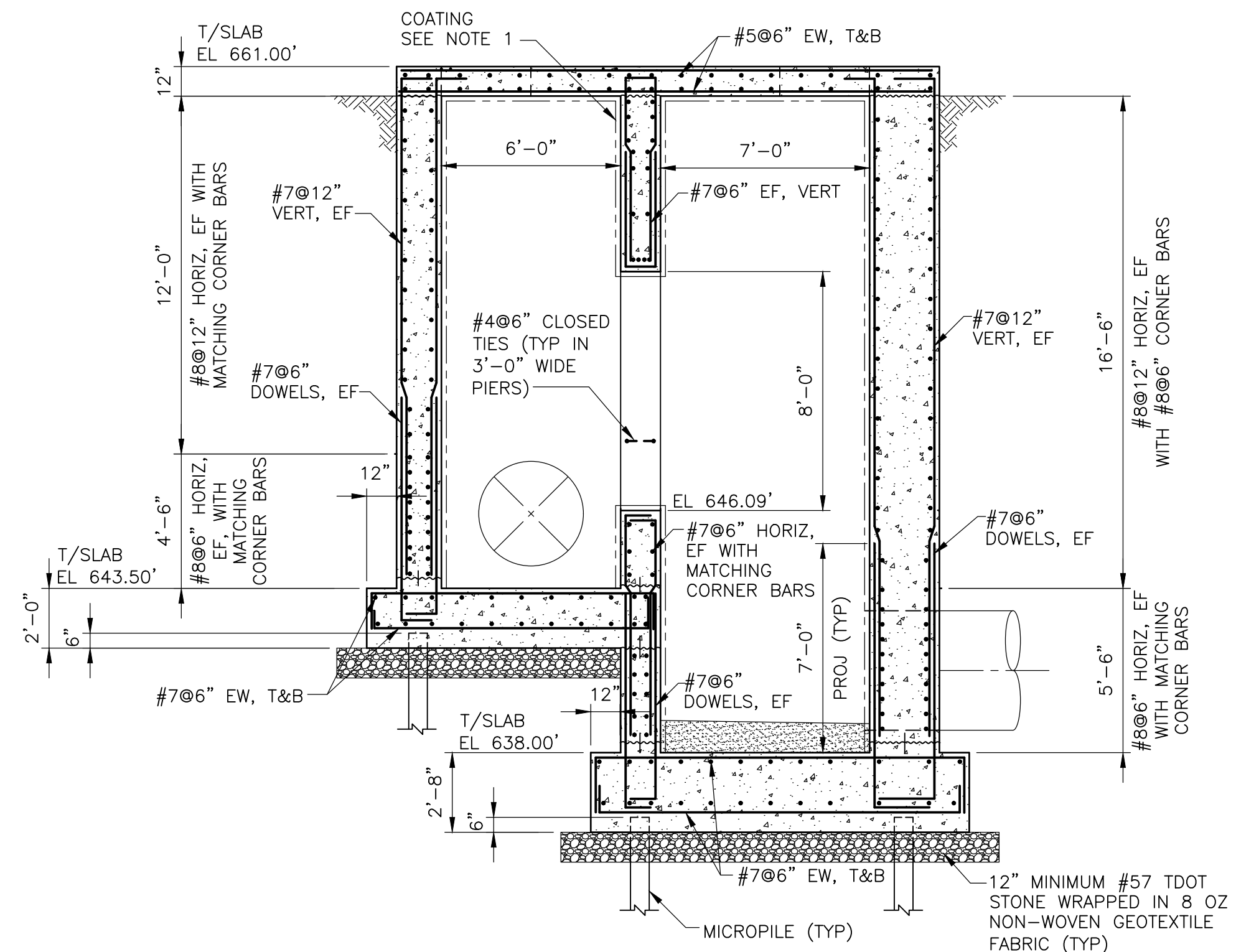
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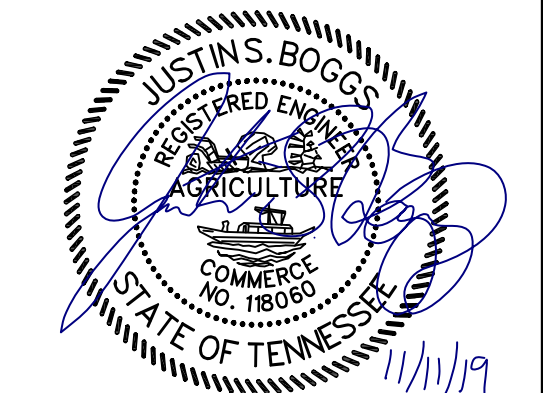
SECTION 1
1/4" = 1'-0"
S-2

NOTES:

1. REFER TO SPECIFICATION 099723 FOR CONCRETE COATING.
2. REFER TO SD-3 FOR MICROPILE LENGTH, EMBEDMENT AND REINFORCING.



SECTION 2
1/4" = 1'-0"
S-2



DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM



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PROJECT NO: 129699-109746

DATE: NOVEMBER 2019

DISC. LEAD: PHK	DESIGNER: S. SANKAR	CHECKER: JSB
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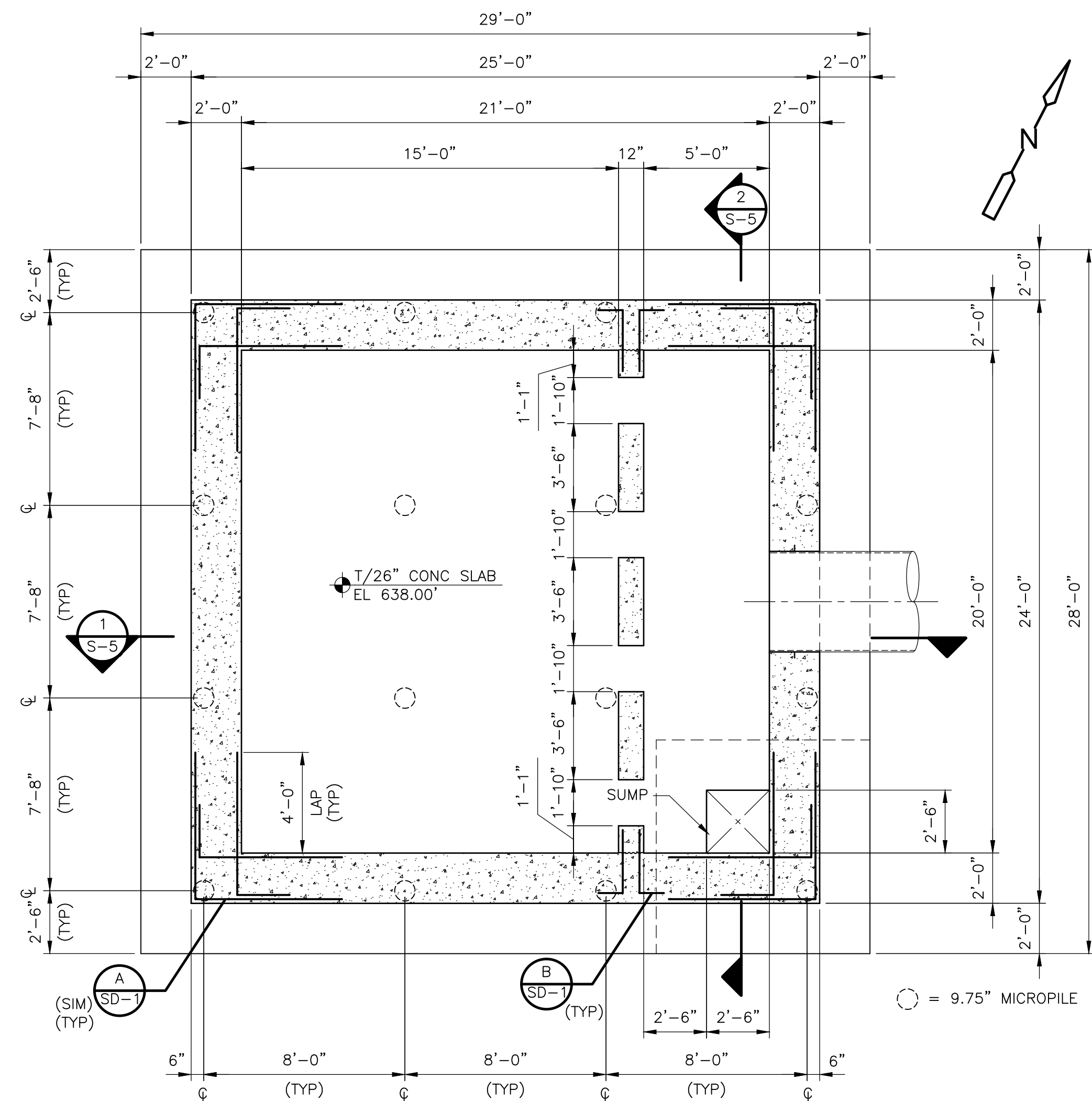
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STRUCTURAL

DIVERSION STRUCTURE
SECTIONS

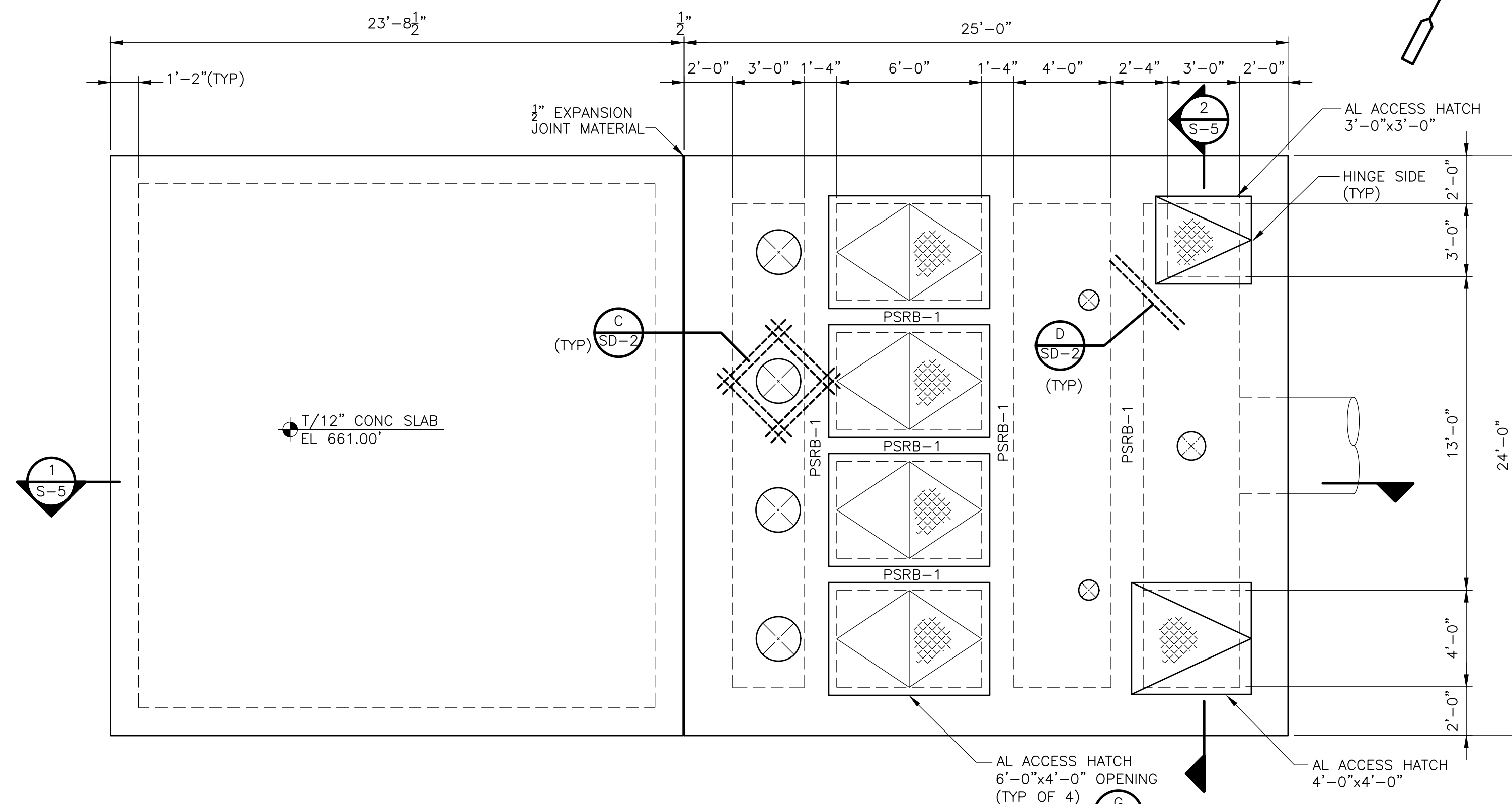
SHEET S-3

ISSUED FOR BID

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FOUNDATION PLAN
1/4" = 1'-0"

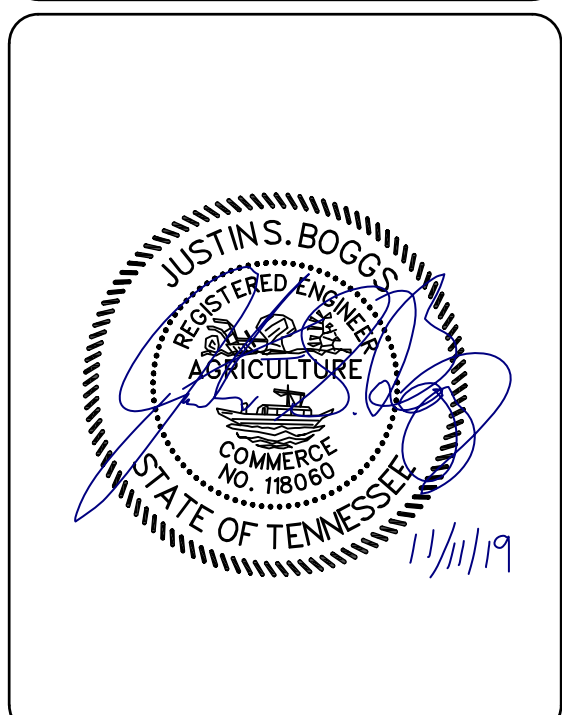
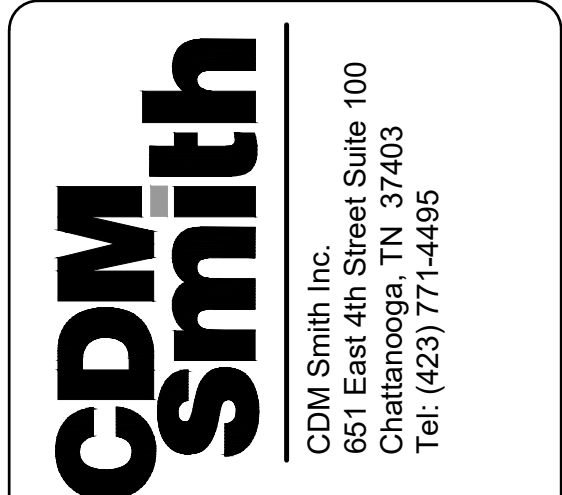


TOP PLAN
1/4" = 1'-0"

NOTES:

1. REFER TO 'M' DRAWINGS FOR PIPE AND DUCT PENETRATION SIZES AND LOCATIONS.
2. REFER TO SD-3 FOR CONCRETE BEAM REINFORCING AND DETAILS.
3. REFER TO SD-3 FOR MICROPILE LENGTH, EMBEDMENT AND REINFORCING.

DESIGN LOAD DATA - WET-WEATHER PUMP STATION	
SEISMIC BASIC SEISMIC FORCE RESISTING SYSTEM:	CONCRETE CAST-IN-PLACE LIQUID CONTAINING STRUCTURE DESIGNED IN ACCORDANCE WITH ACI 350.3
SEISMIC RESPONSE COEFFICIENT:	Ci: 0.374 Cc: 0.092 Ct: 0.150
RESPONSE MODIFICATION FACTOR, R:	Ri: 3.0 R _c : 1.0
ANALYSIS PROCEDURE USED:	EQUIVALENT LATERAL FORCE PROCEDURE
DESIGN BASE SHEAR:	$[(P_i + P_w + P_r)^2 + P_c^2 + P_y^2]^{0.5}$
REFER TO SHEET S-1 FOR DESIGN LOAD DATA THAT IS THE SAME FOR ALL STRUCTURES.	



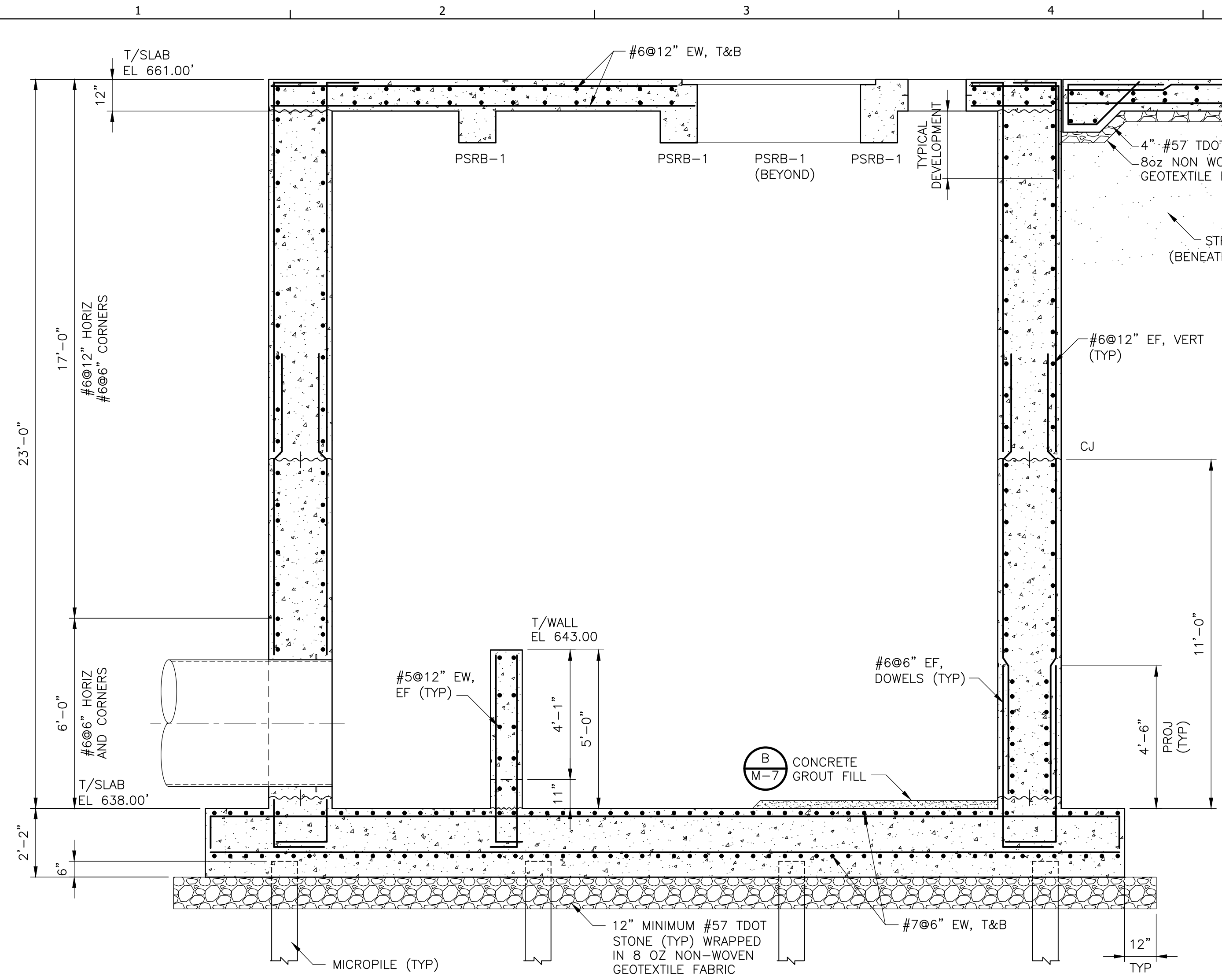
DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
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CONSENT DECREE PROGRAM

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PROJECT NO: 129699-109746
DATE: NOVEMBER 2019
DISC. LEAD: PHK DESIGNER: PHK CHECKER: JSB

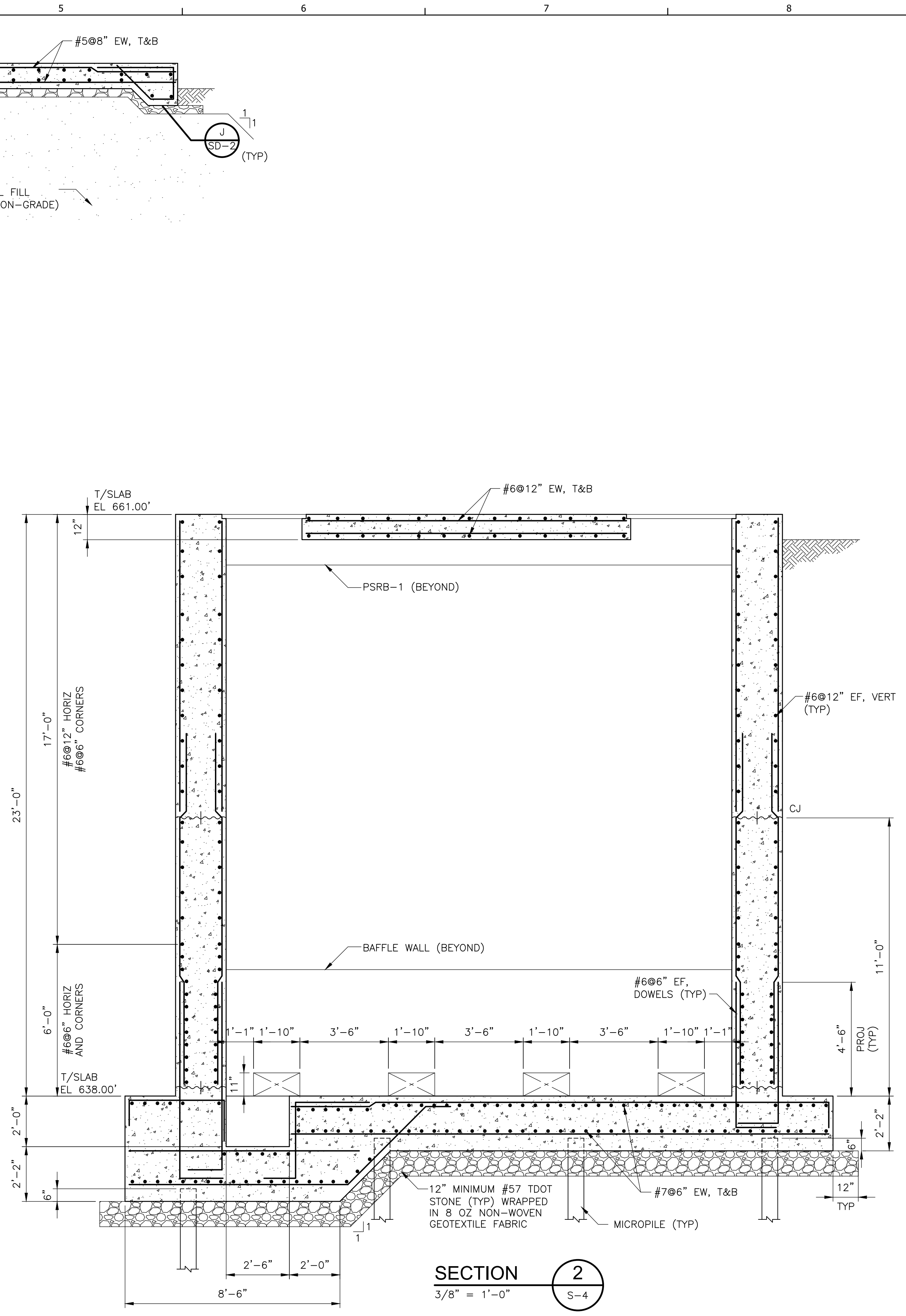
SHEET TITLE
STRUCTURAL
WET-WEATHER PUMP STATION
FOUNDATION AND TOP PLANS
SHEET **S-4**

CREATED: 10/21/2019 LAST SAVED: 10/21/2019 BY: SCHIAVOPC PLOT DATE: 11/11/2019 © 2019 CDM SMITH ALL RIGHTS RESERVED. REUSE OF DOCUMENTS, THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



SECTION 1
3/8" = 1'-0"

- NOTES:**
1. FOR CONCRETE GROUT FILL OVER THE BOTTOM SLAB, SEE "M" DRAWINGS.
 2. REFER TO "M" DRAWINGS FOR PIPE AND DUCT PENETRATION SIZES AND LOCATIONS.
 3. REFER TO SD-3 FOR MICROPILE LENGTH, EMBEDMENT AND REINFORCING.
 4. REFER TO SD-3 FOR CONCRETE BEAM REINFORCING AND DETAILS.



SECTION 2
3/8" = 1'-0"

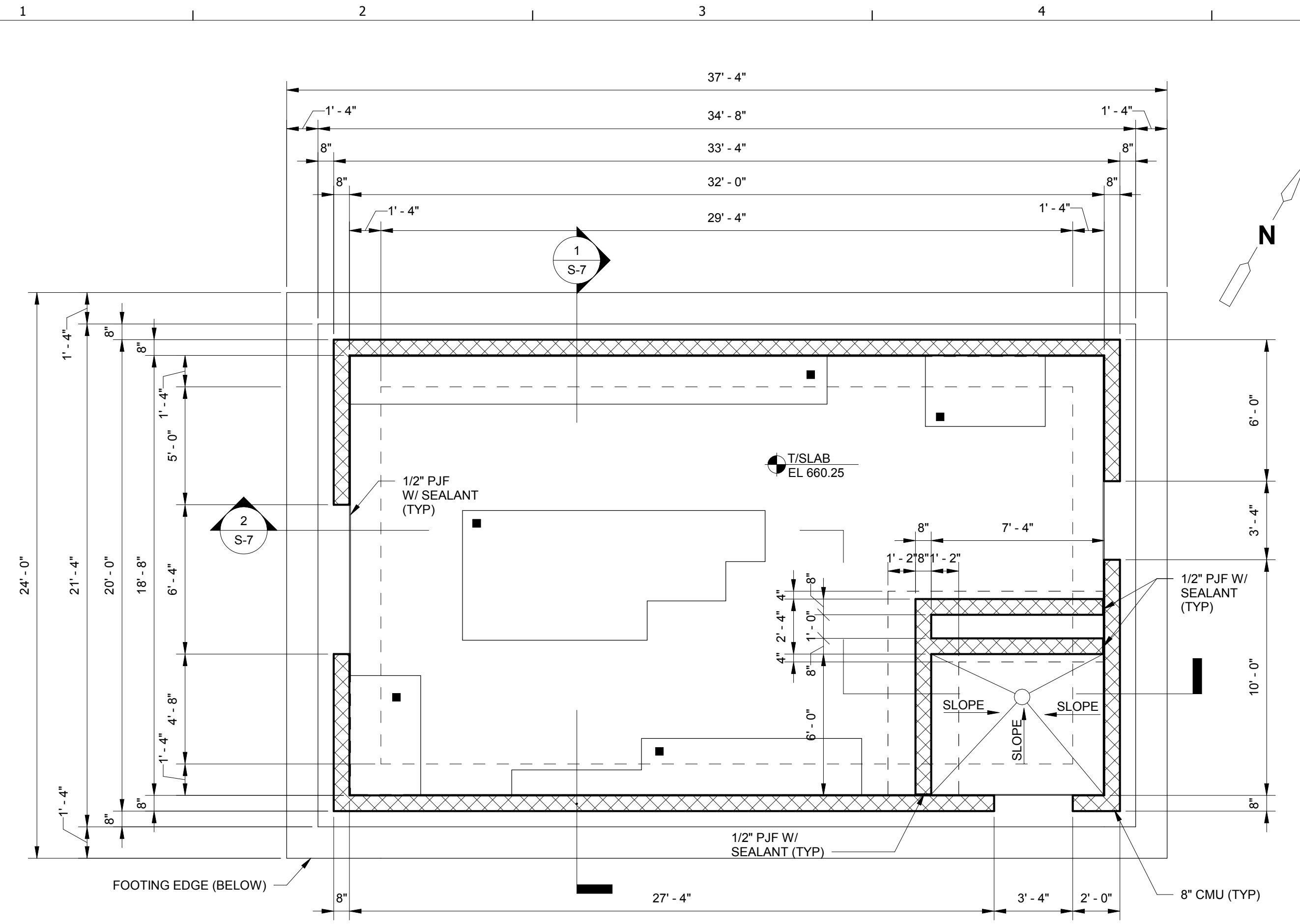


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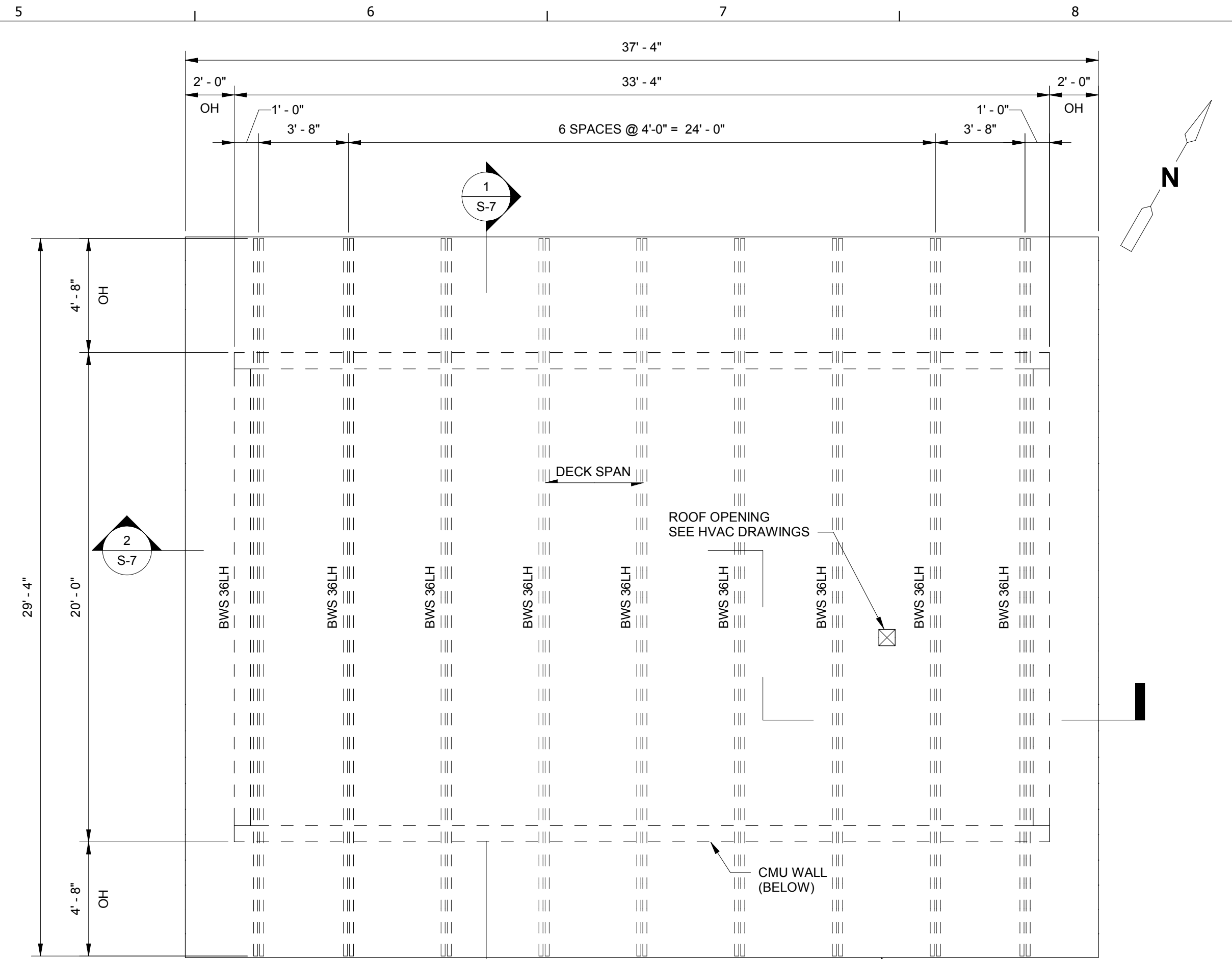
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DISC. LEAD: PHK DESIGNER: PHK CHECKER: JSB
SHEET TITLE: STRUCTURAL WET WEATHER PUMP STATION SECTIONS
SHEET: S-5

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 BY: SALLDOCE
 LAST SAVED: 9/26/2019
 CREATED: 9/25/2019



SLAB PLAN
1/4" = 1'-0"

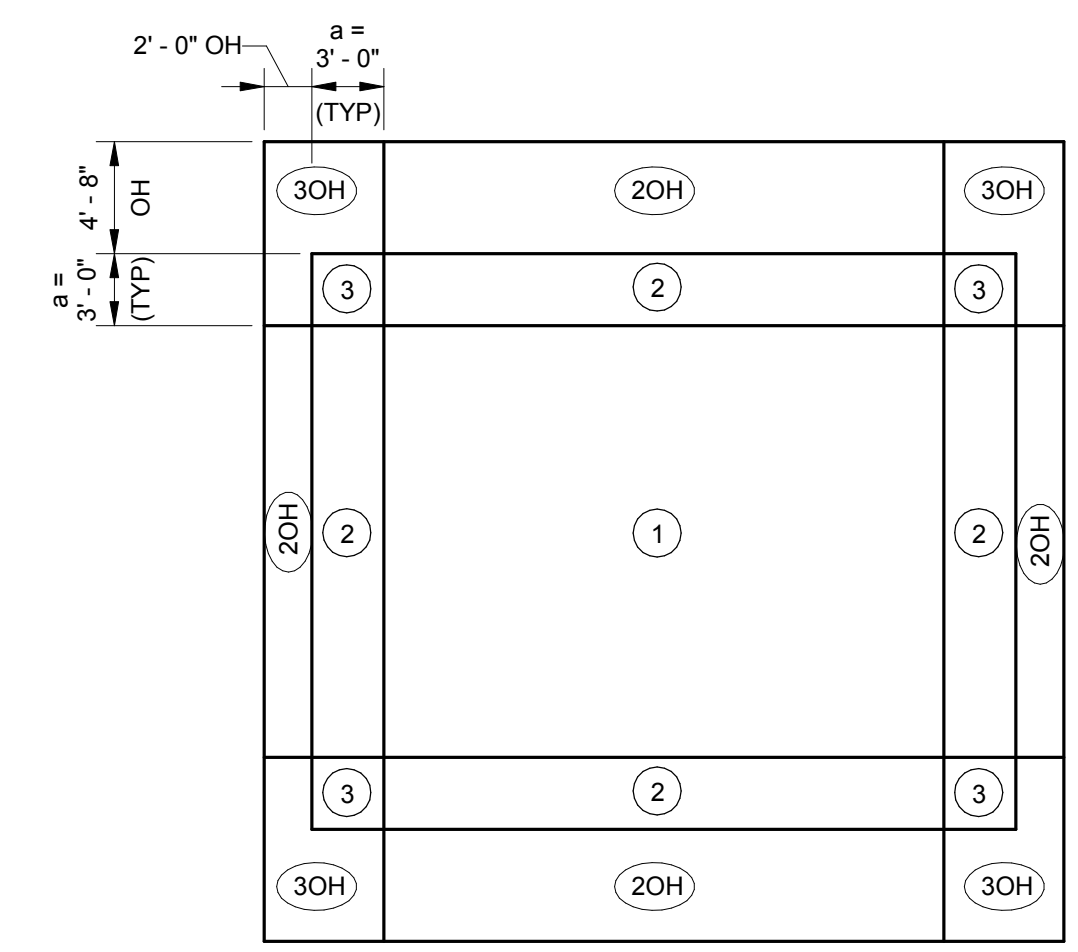


ROOF PLAN
1/4" = 1'-0"

DESIGN LOAD DATA - ELECTRICAL BUILDING	
SEISMIC:	
BASIC SEISMIC-FORCE-RESISTING SYSTEM:	INTERMEDIATE REINFORCED MASONRY SHEAR WALLS
DESIGN BASE SHEAR:	Cs*W
SEISMIC RESPONSE COEFFICIENT:	Cs: 0.13
RESPONSE MODIFICATION FACTOR:	R: 3.5
ANALYSIS PROCEDURE USED:	EQUIVALENT LATERAL FORCE PROCEDURE
WIND DESIGN DATA:	
ENCLOSURE CLASSIFICATION:	PARTIALLY ENCLOSED
INTERNAL PRESSURE COEFFICIENT:	+/- 0.55
REFER TO SHEET S-1 FOR DESIGN LOAD DATA THAT IS THE SAME FOR ALL STRUCTURES.	

- NOTES:**
- SEE SHEET S-1 FOR STRUCTURAL NOTES.
 - SEE SHEET SD-4 FOR STANDARD MASONRY DETAILS.
 - SEE SHEET SD-4 FOR JOIST DETAILS.
 - INDICATES HOUSEKEEPING PAD. SEE DETAIL A/SD-2.
 - INDICATES FLOOR DRAIN. SEE PLUMBING DRAWINGS FOR LOCATIONS.

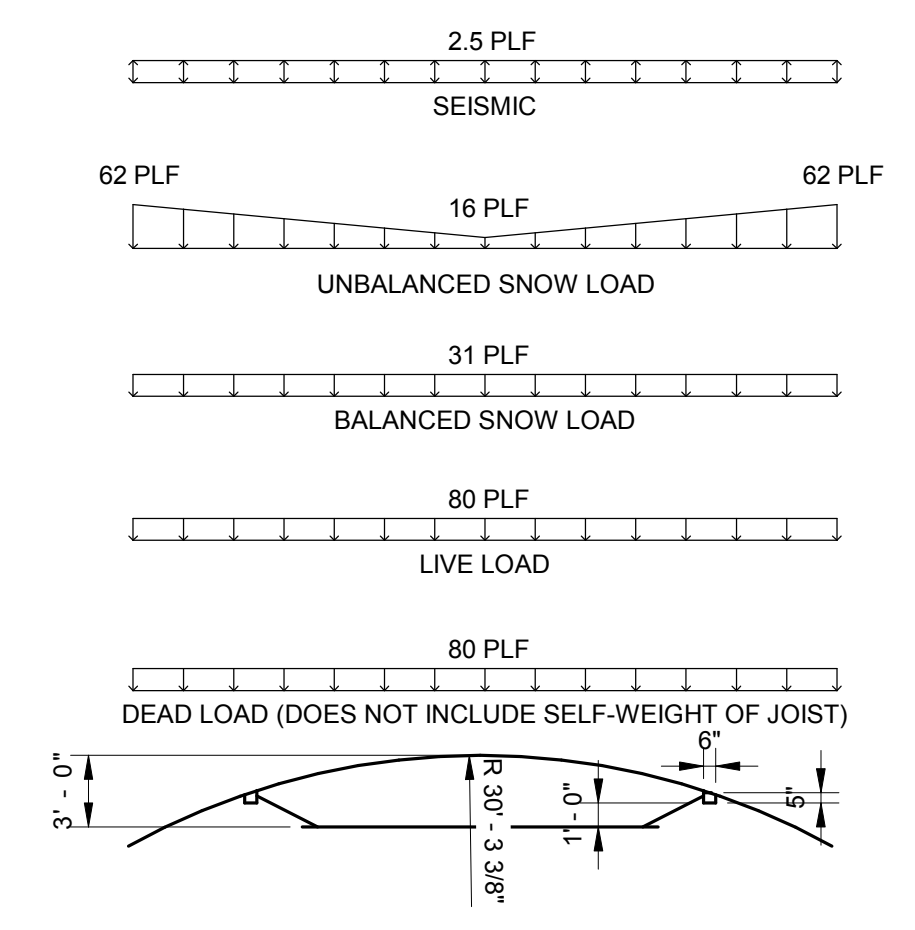
- JOIST AND DECK NOTES:**
- JOIST AND ALL BRACE CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TENNESSEE.
 - MAXIMUM JOIST SPACING SHALL BE 4'-0" ON CENTER.
 - HORIZONTAL, DIAGONAL AND UPLIFT BRIDGING NOT SHOWN. PROVIDE BRIDGING AS REQUIRED BY JOIST MANUFACTURER AND SJ SPECIFICATIONS. PER DETAIL G/SD-4 BRIDGING SHALL BE POSITIONED SO AS NOT TO INTERFERE WITH ROOF OPENING.
 - ROOF JOIST SUPERIMPOSED LOADS:
 - LIVE LOAD = 20 PSF
 - DEAD LOAD = 20 PSF (INCLUDES 10 PSF COLLATERAL)
 - EQUIPMENT = PER EQUIPMENT MANUFACTURER
 - SNOW = REFER TO SPECIAL JOIST LOAD DIAGRAM
 - NET WIND UPLIFT (ASD) = -39 PSF
 - ROOF DECK DIAPHRAGM:
 - DECK: 1.5B18 GALVANIZED WIDE RIB DECK BY VULCRAFT OR APPROVED EQUAL.
 - SUPPORT FASTENERS: HILTI X-HSN 24** 36/4 PATTERN OR APPROVED EQUAL.
 - SIDELAP FASTENERS: 2 HILTI S-SLC01M HWH SIDELAP CONNECTORS PER SPAN OR APPROVED EQUAL.
- ** COORDINATE FASTENER MODEL WITH JOIST CHORD THICKNESS.



WIND PRESSURE PLAN
NTS

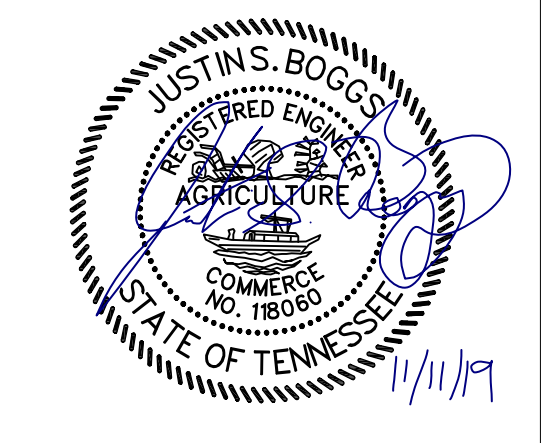
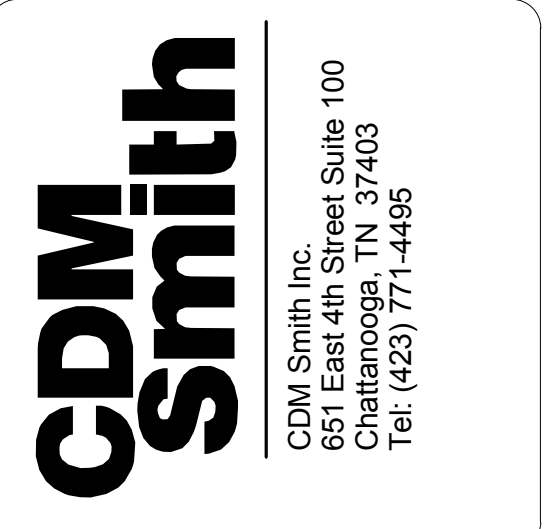
WIND PRESSURE (PSF) FOR COMPONENT AND CLADDING (VULT)		
WALL OPENING PRESSURES		
NAME	MAX +	MAX -
A	38.6	-41.0
B	38.6	-41.0
C	38.6	-48.1

NOTE: WIND PRESSURES ARE STRENGTH LEVEL.



- WEB LAYOUT PER JOIST SUPPLIER
- SEE WIND PRESSURE PLAN AND TABLE FOR WIND LOADING (NOT SHOWN HERE)
- LOADS SHOWN ARE SERVICE/UNFACTORED UNLESS OTHERWISE NOTED.
- ADD 5PSF RAIN-ON-SNOW TO BALANCED SNOW LOAD WHEN NOT IN COMBINATION WITH UNBALANCED LOADS.

36LH SPECIAL JOIST LOAD DIAGRAM
NTS



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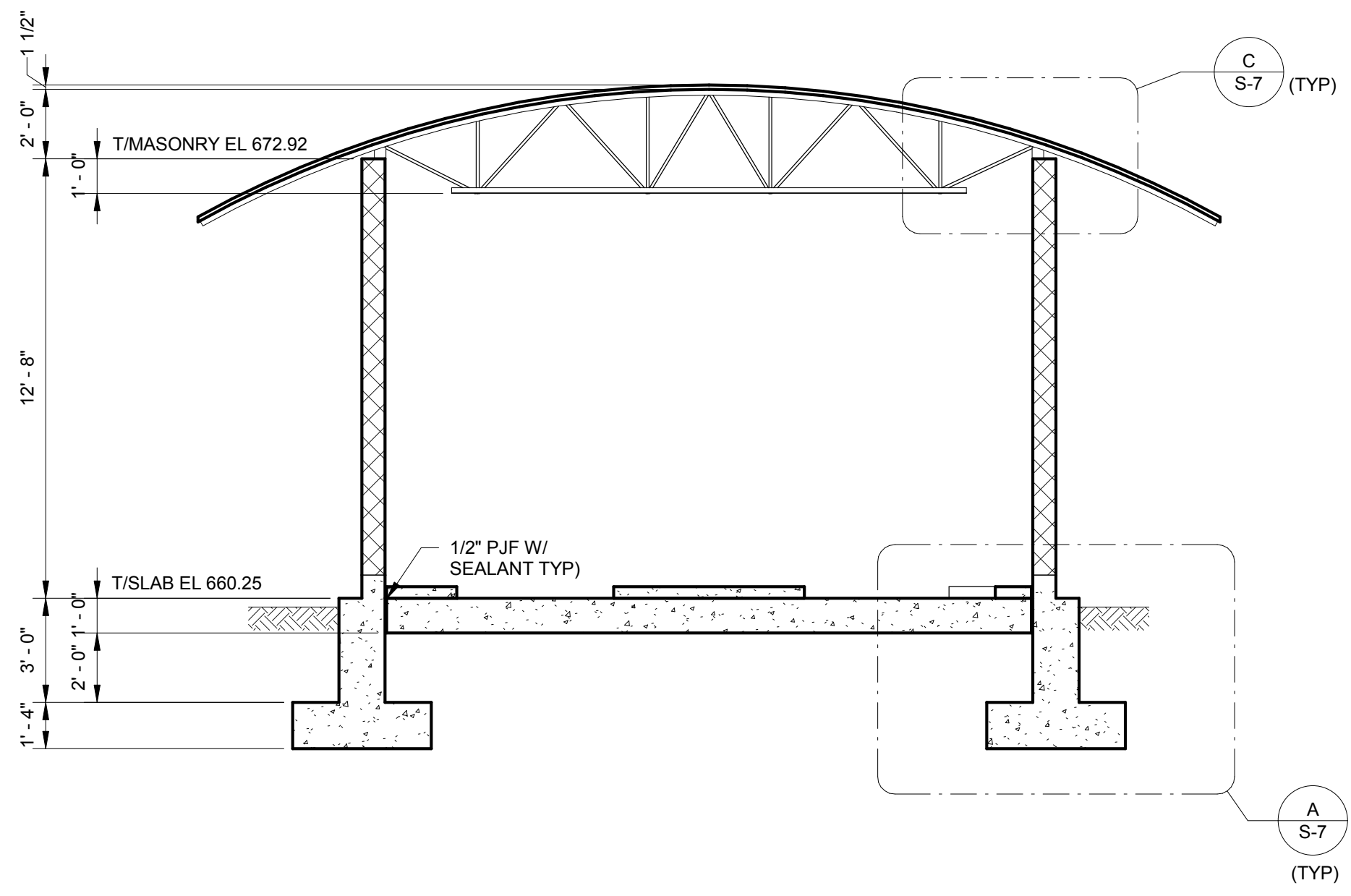
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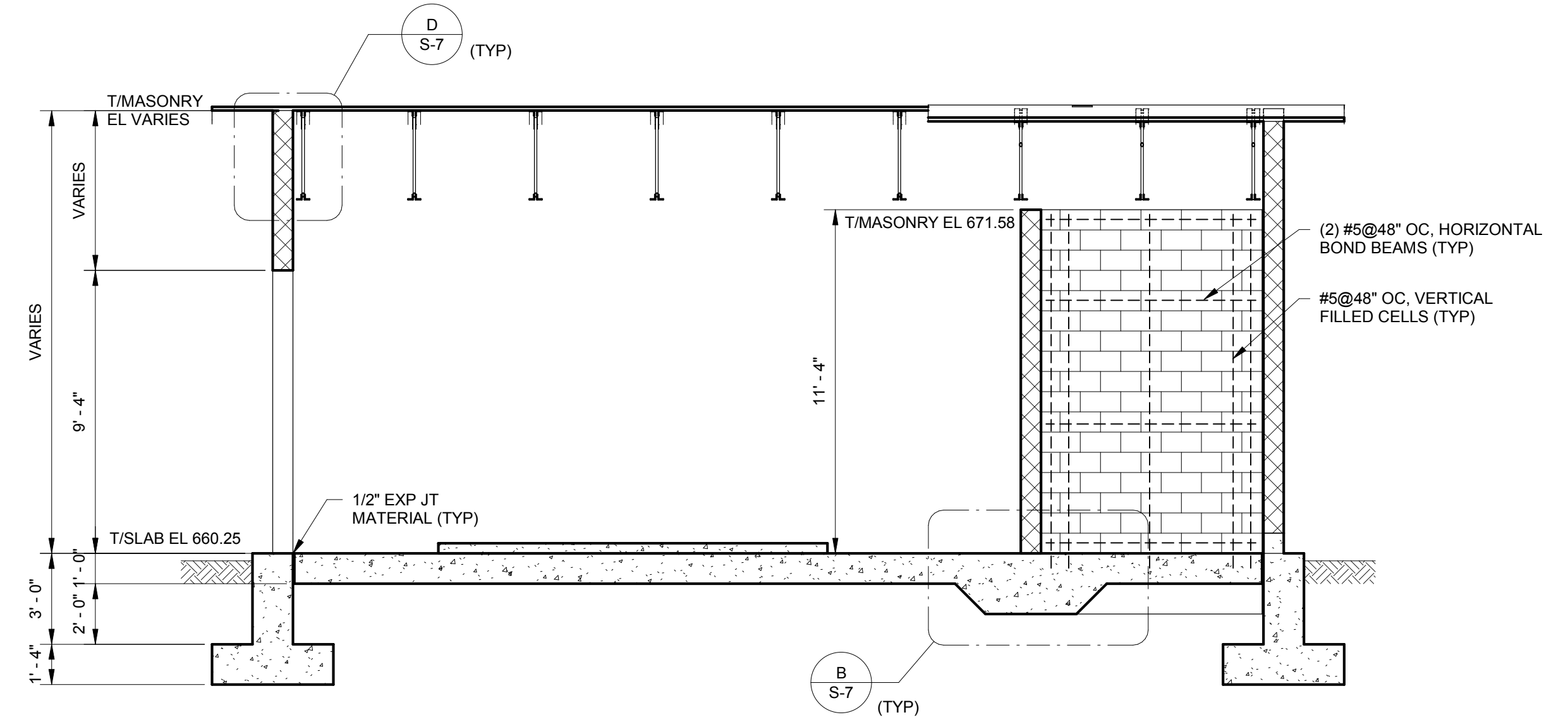
PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: PHK DESIGNER: PCS CHECKER: JSB

SHEET TITLE
 STRUCTURAL
ELECTRICAL BUILDING PLANS

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 BY: SALLDQCE
 LAST SAVED: 9/26/2019
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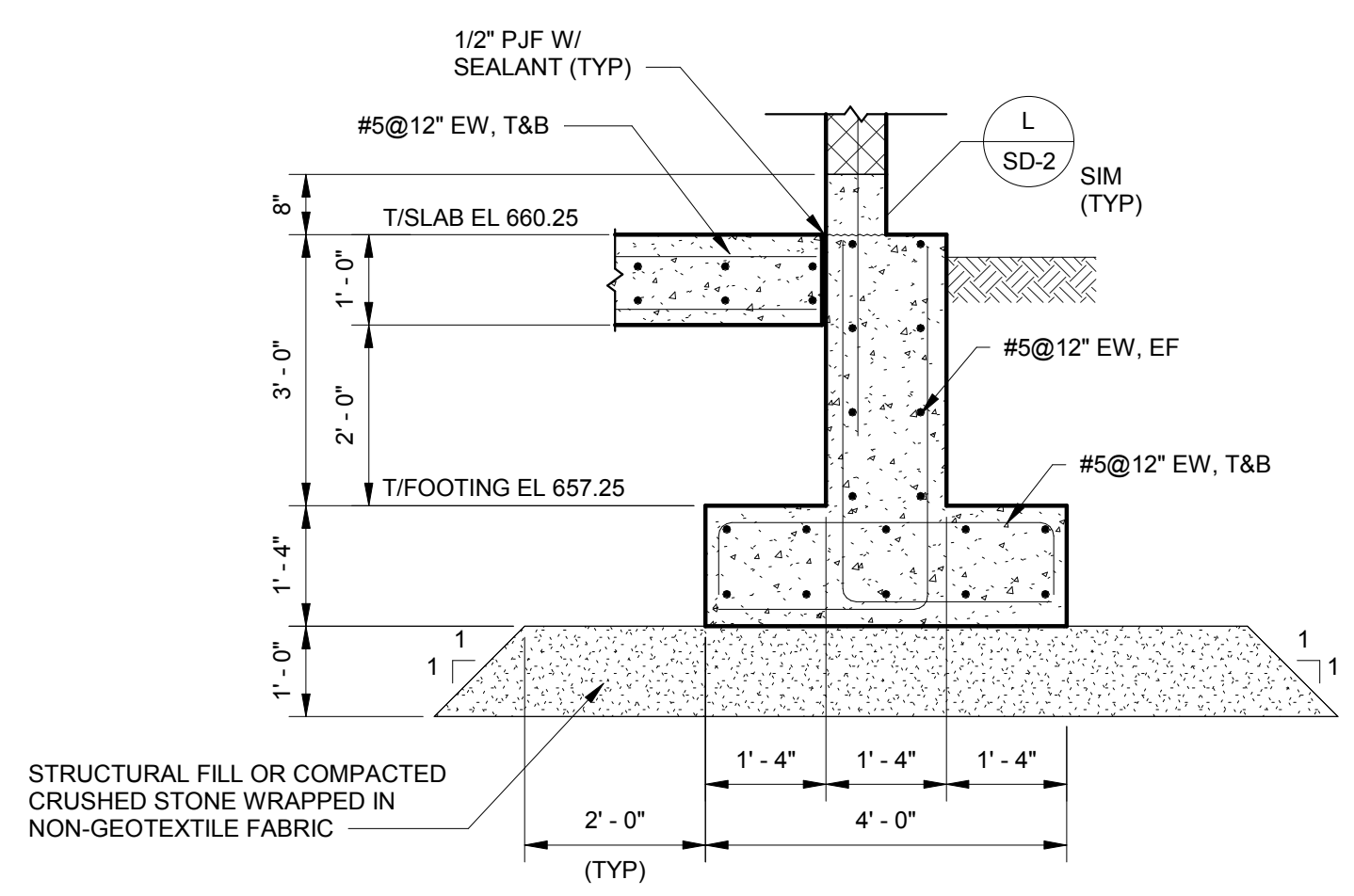


1 SECTION
S-6 1/4" = 1'-0"

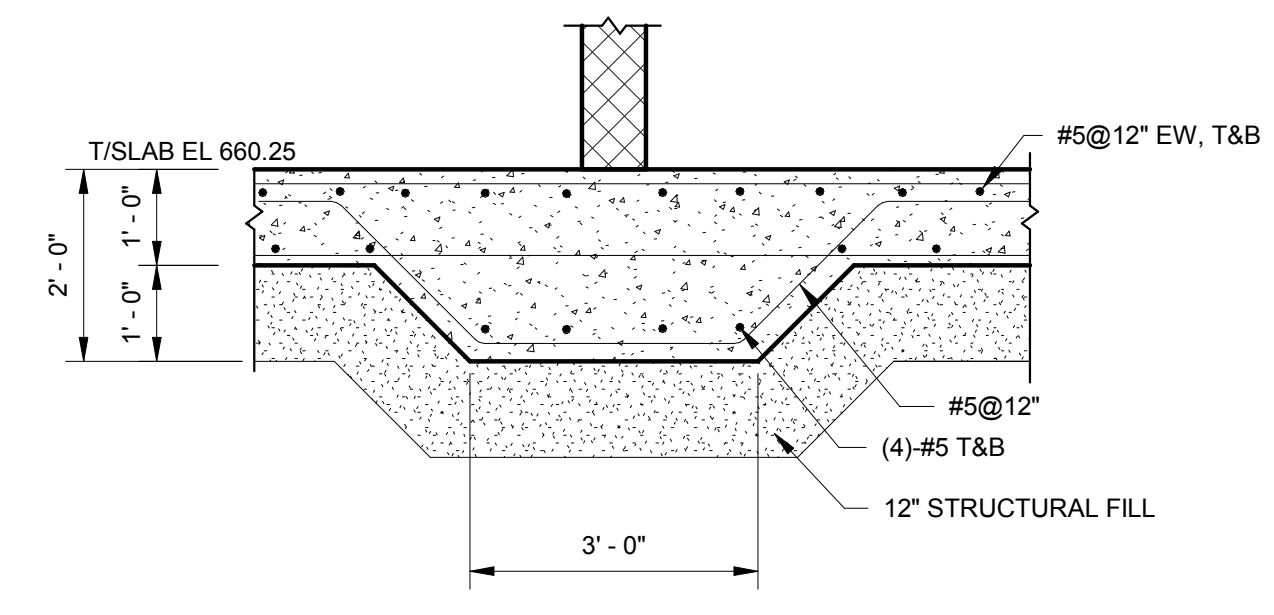


2 SECTION
S-6 1/4" = 1'-0"

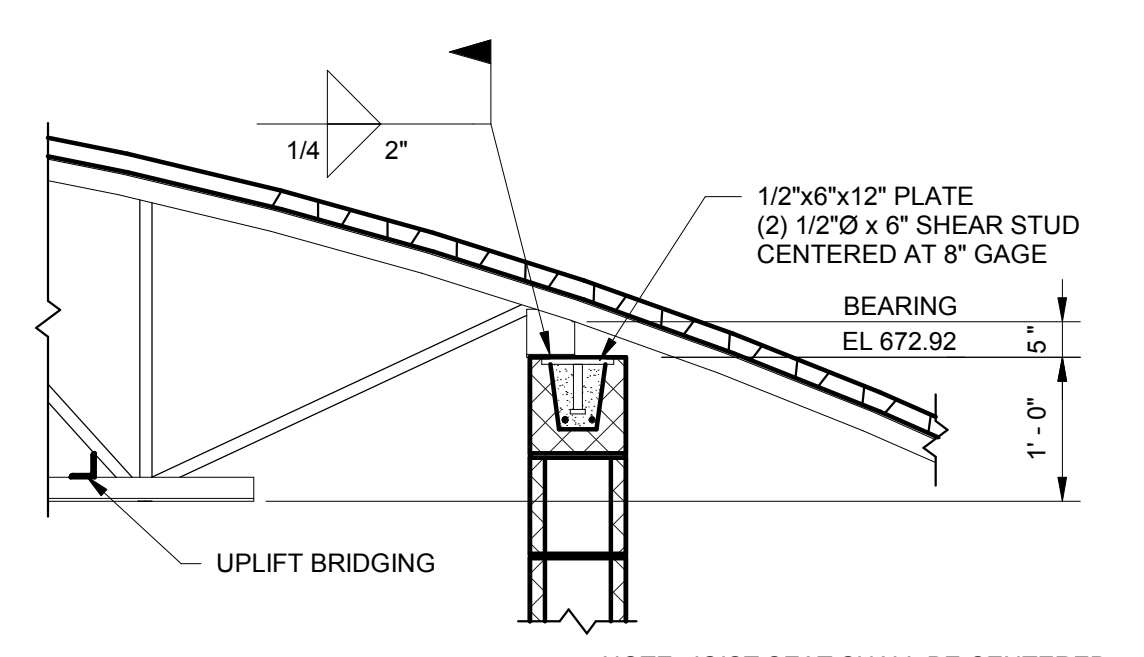
NOTES:
1. REFER TO SD-4 FOR STANDARD MASONRY DETAILS.



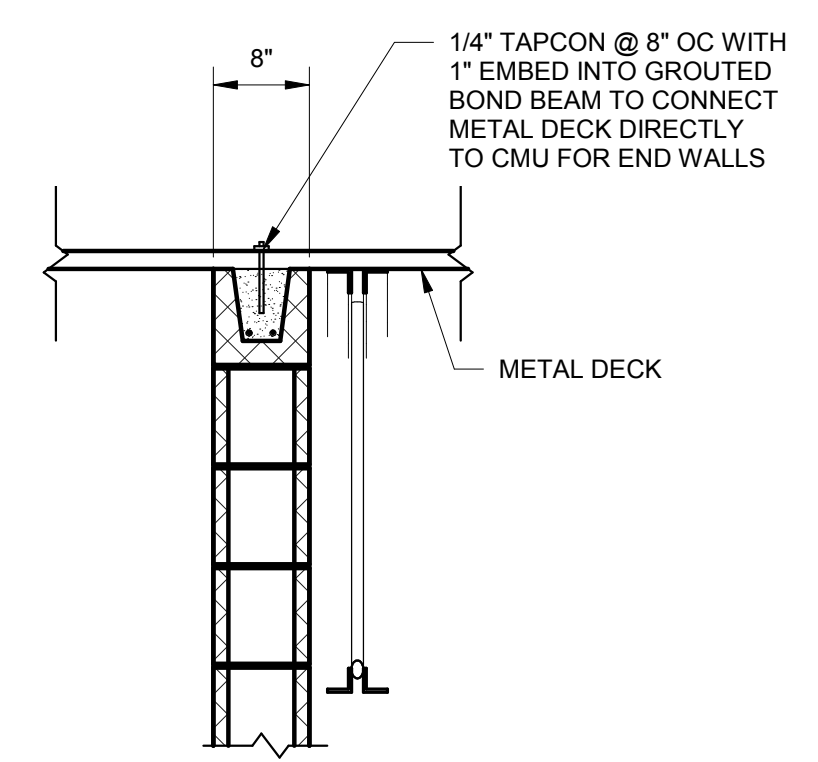
A DETAIL
1/2" = 1'-0"



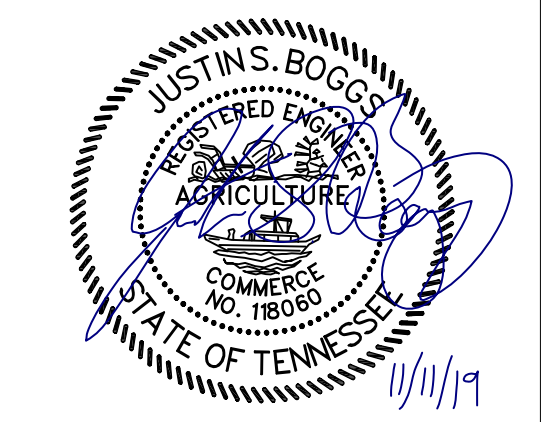
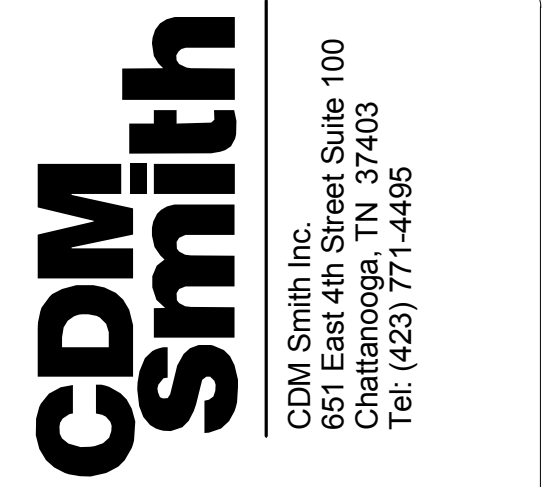
B DETAIL
1/2" = 1'-0"



C DETAIL
3/4" = 1'-0"



D DETAIL
3/4" = 1'-0"

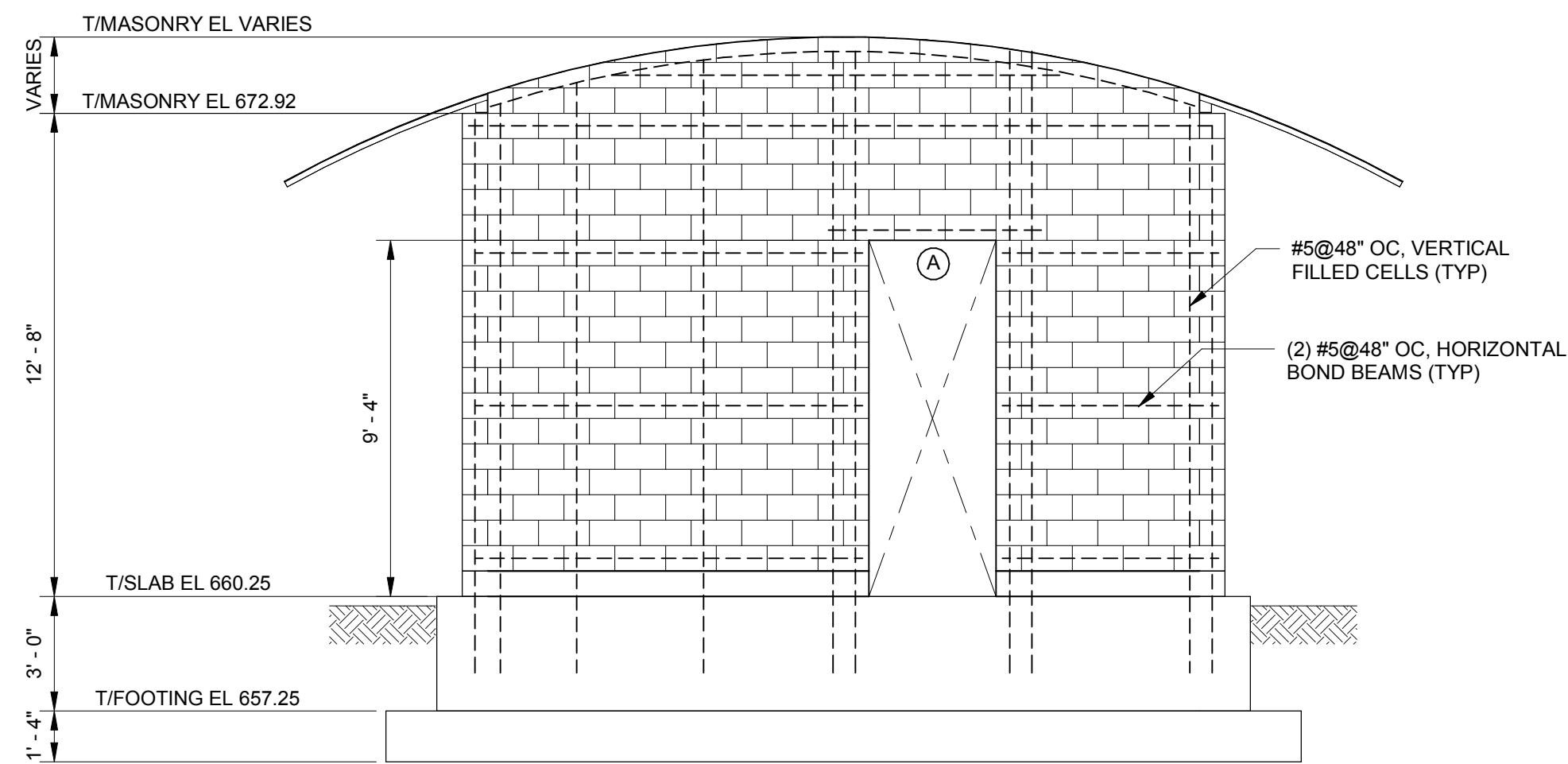


DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

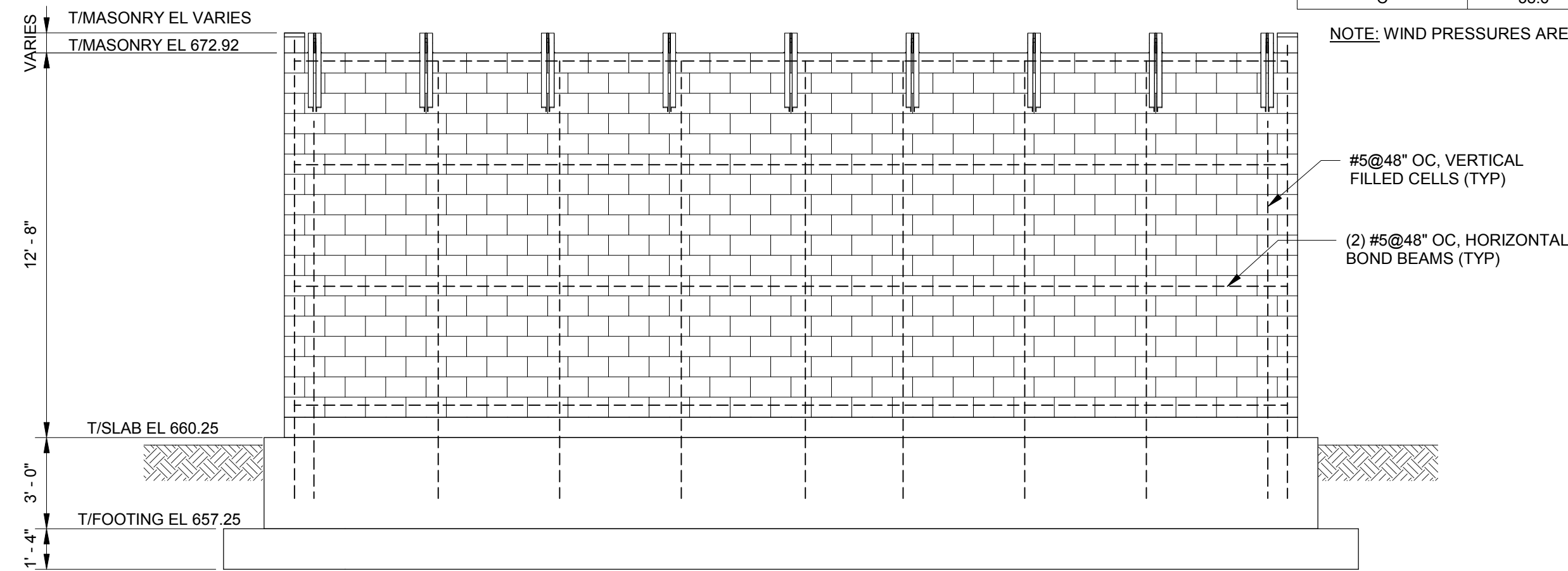
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 DATE: NOVEMBER 2019
 DISC. LEAD: PHK
 DESIGNER: PCS
 CHECKER: JSB
 SHEET TITLE: STRUCTURAL
ELECTRICAL BUILDING SECTIONS AND DETAILS
 SHEET: S-7

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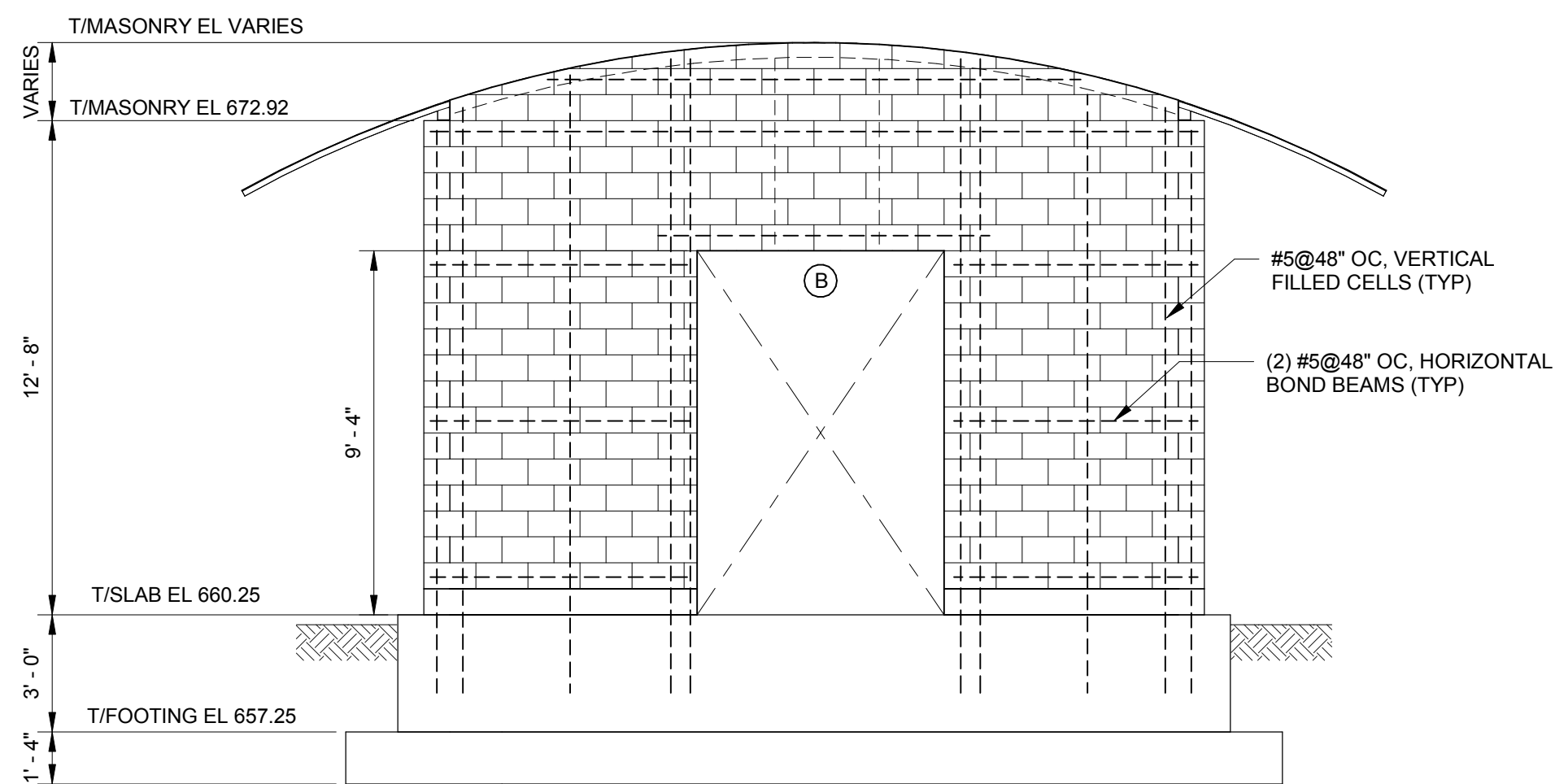


EAST ELEVATION
1/4" = 1'-0"

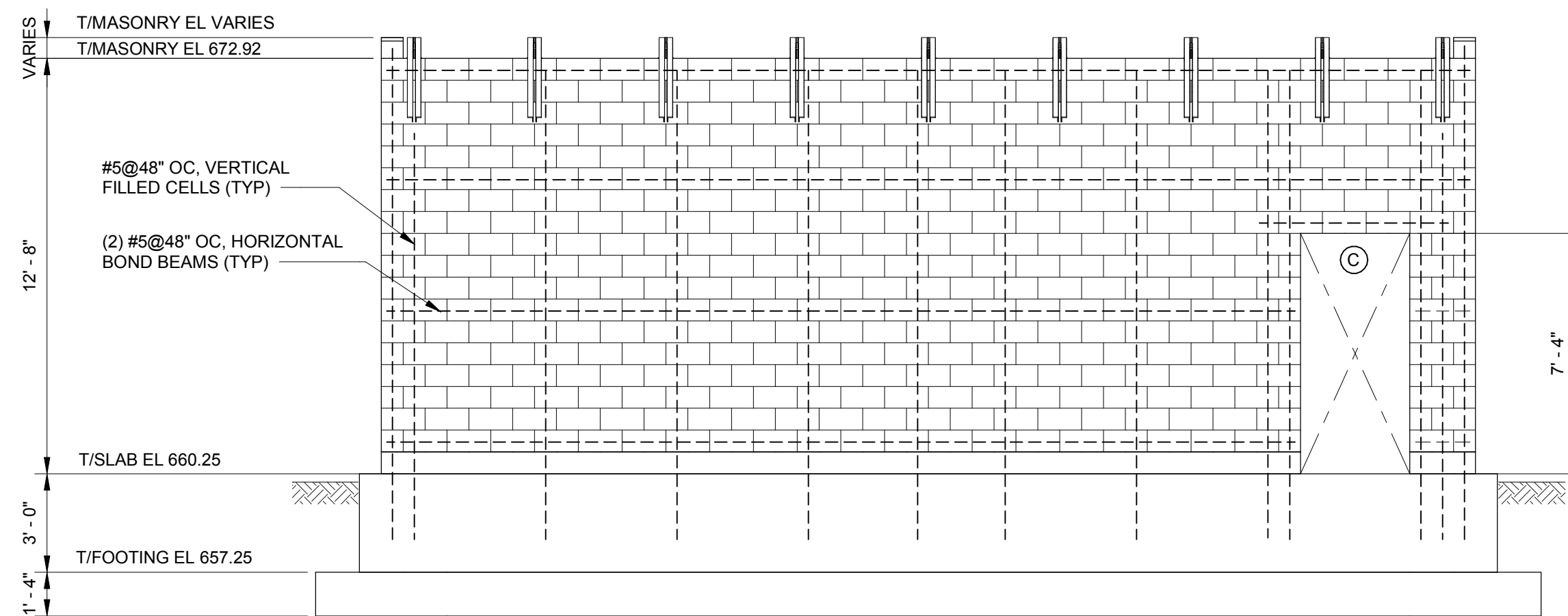


NORTH ELEVATION
1/4" = 1'-0"

- NOTES:**
1. ROOF DECK NOT SHOWN FOR CLARITY.
 2. REFER TO SD-4 FOR STANDARD MASONRY DETAILS.



WEST ELEVATION
1/4" = 1'-0"

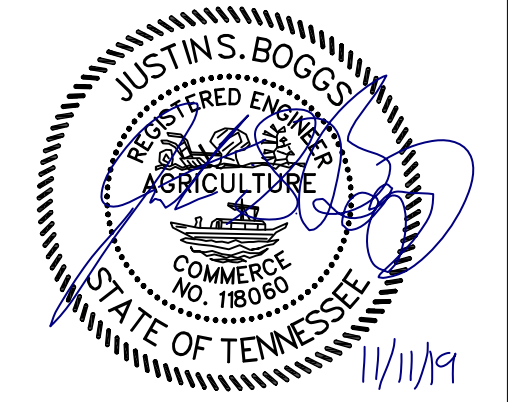
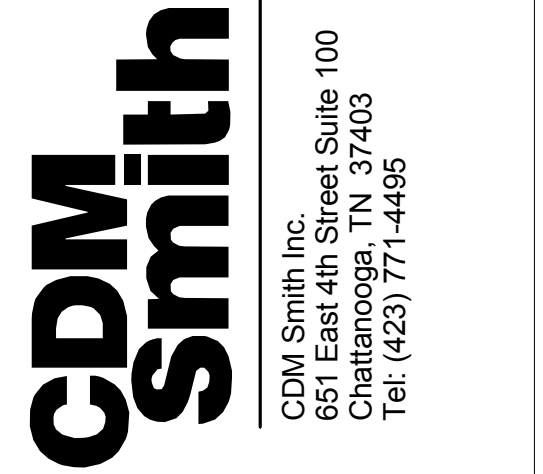


SOUTH ELEVATION
1/4" = 1'-0"

WIND PRESSURE (PSF) FOR COMPONENT AND CLADDING (VULT)

WALL OPENING PRESSURES		
NAME	MAX +	MAX -
A	38.6	-41.0
B	38.6	-41.0
C	38.6	-48.1

NOTE: WIND PRESSURES ARE STRENGTH LEVEL.



DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

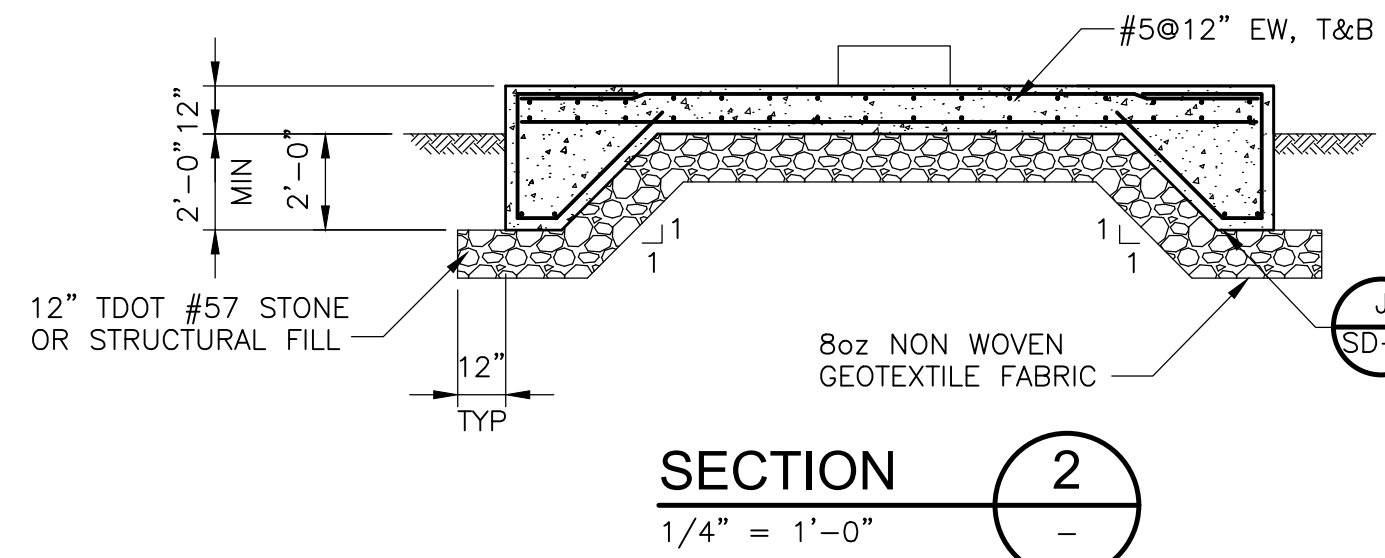
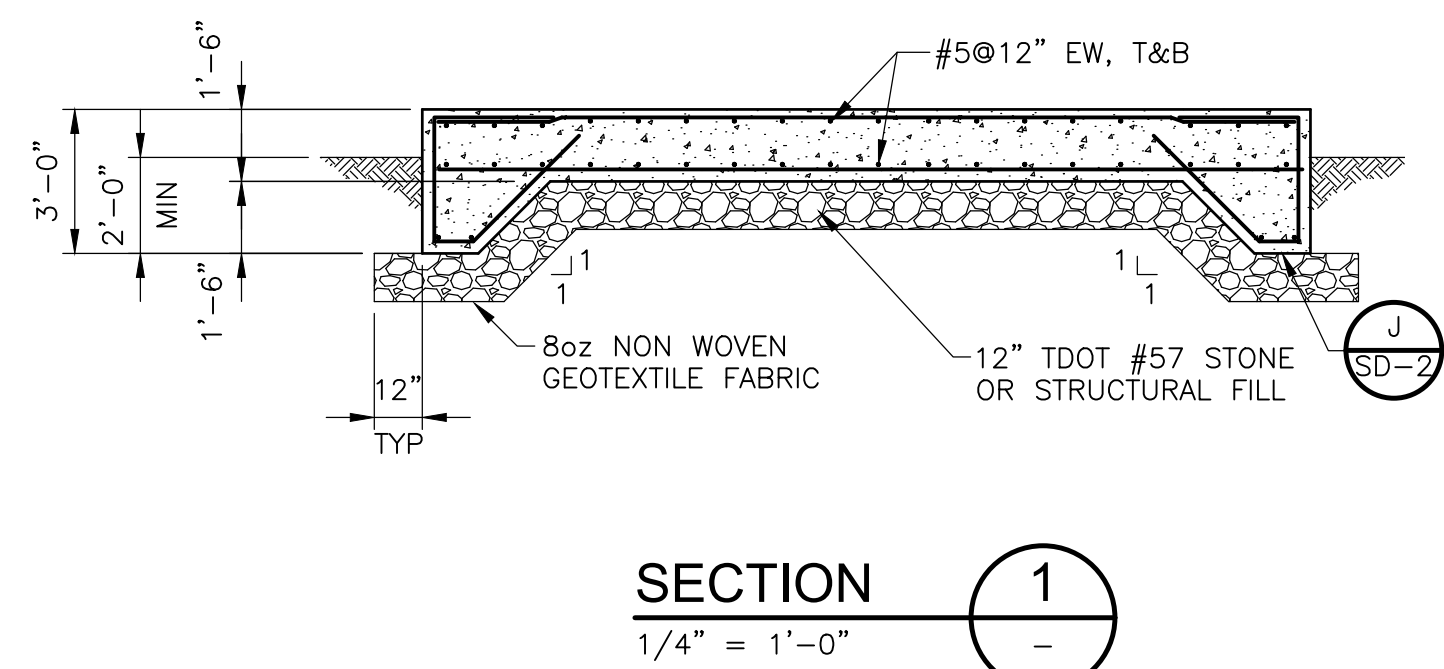
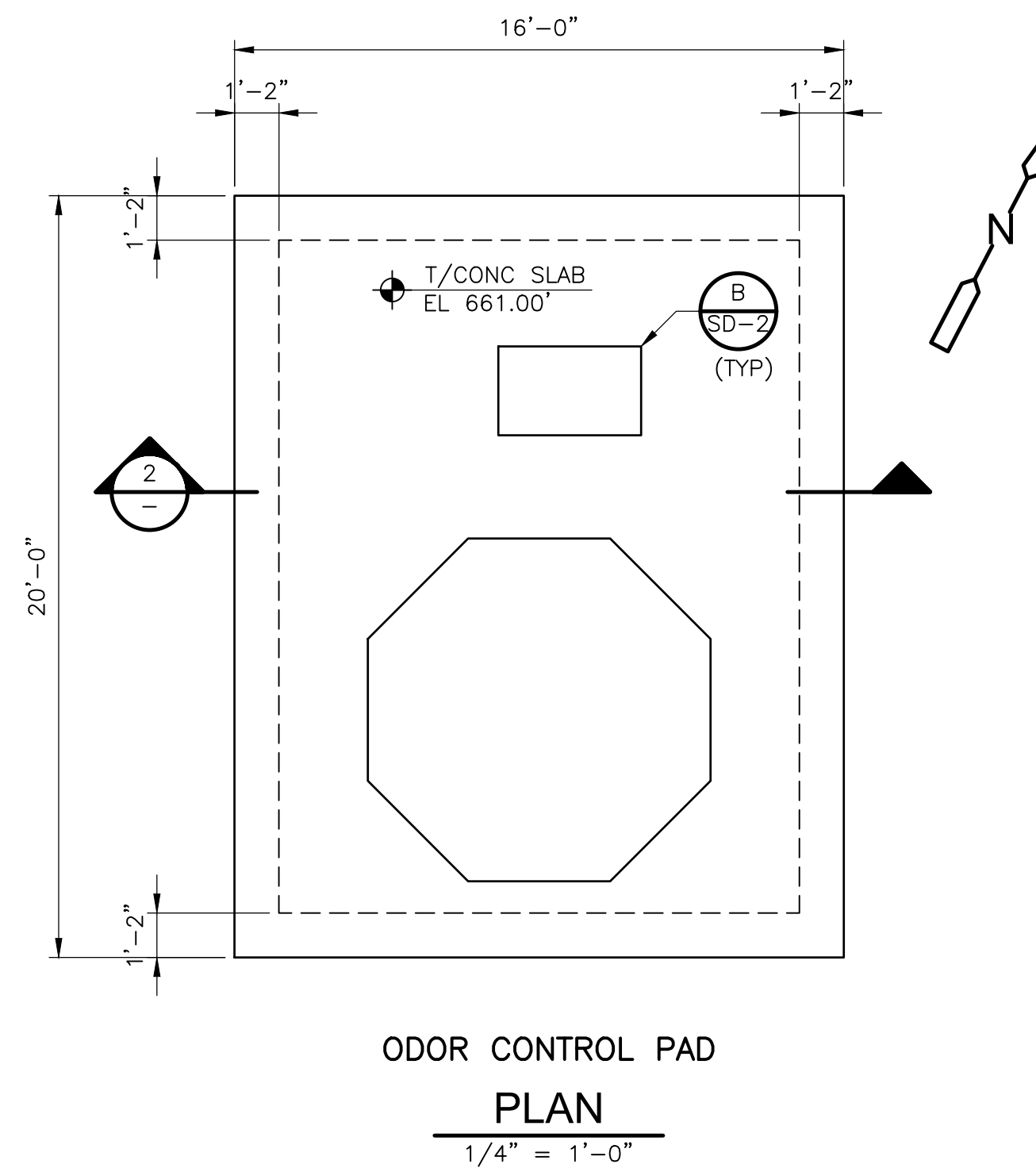
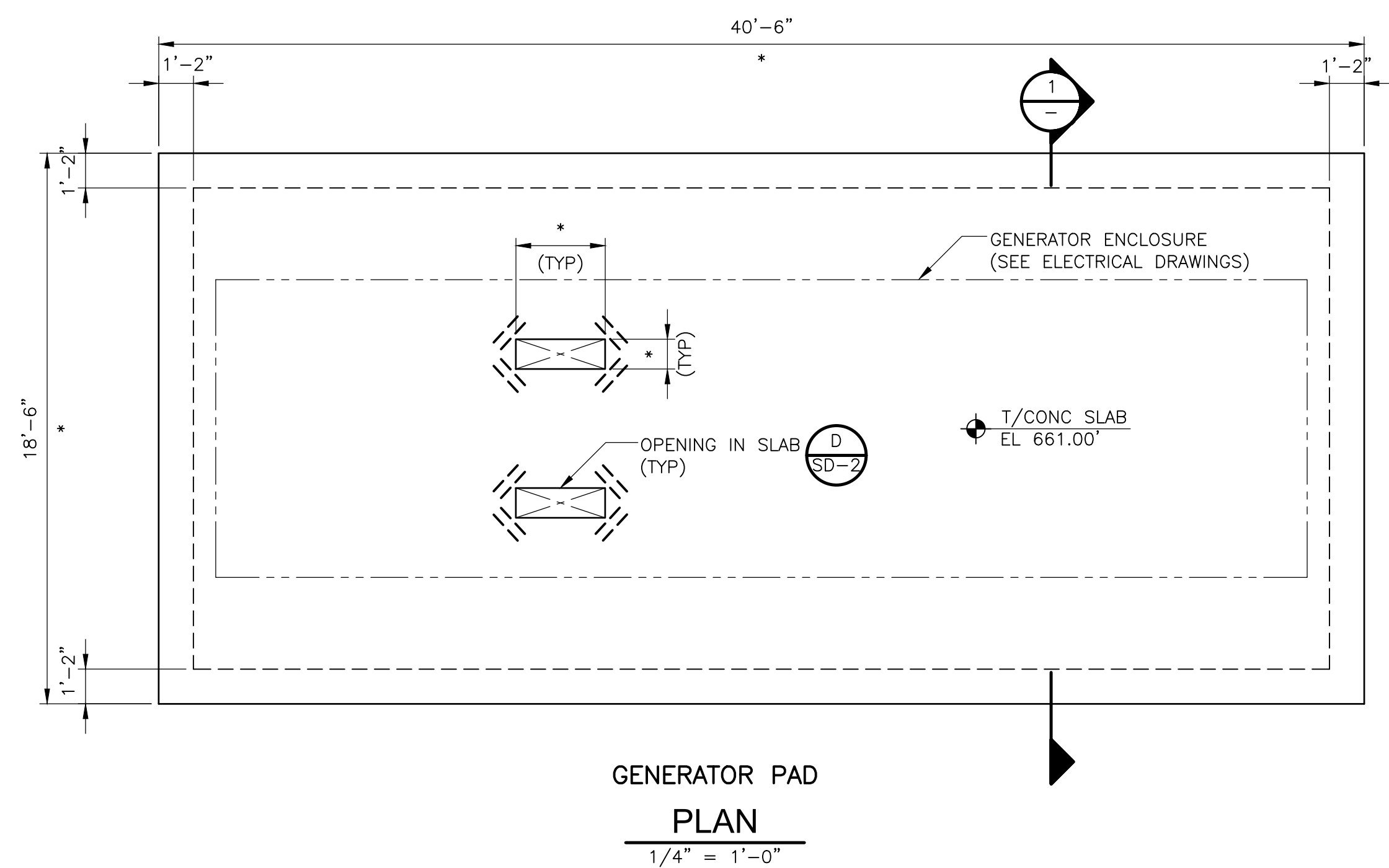


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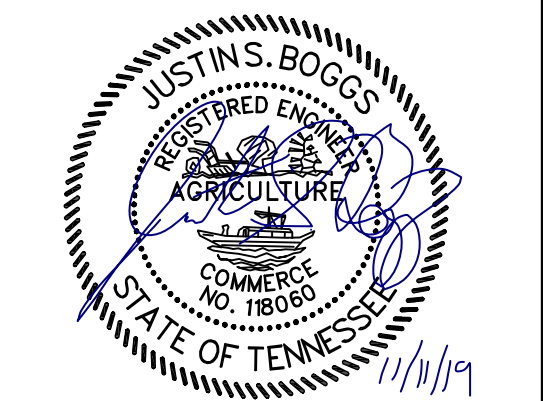
SHEET TITLE
 STRUCTURAL
ELECTRICAL BUILDING ELEVATIONS

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FOUNDATIONS NOTES:

- * INDICATES DIMENSIONS AND/OR INFORMATION IS PRELIMINARY AND IS TO BE COORDINATED BY THE CONTRACTOR WITH THE MANUFACTURER OF THE APPROVED EQUIPMENT PRIOR TO FABRICATION AND CONSTRUCTION.
- GENERATOR FOUNDATION SHALL NOT BE FABRICATED OR CONSTRUCTED UNTIL THE EQUIPMENT LOADS AND DIMENSIONS HAVE BEEN SUBMITTED AND ADJUSTMENTS TO THE FOUNDATION DETAILS, IF REQUIRED, HAVE BEEN COMPLETED BY THE ENGINEER. ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.



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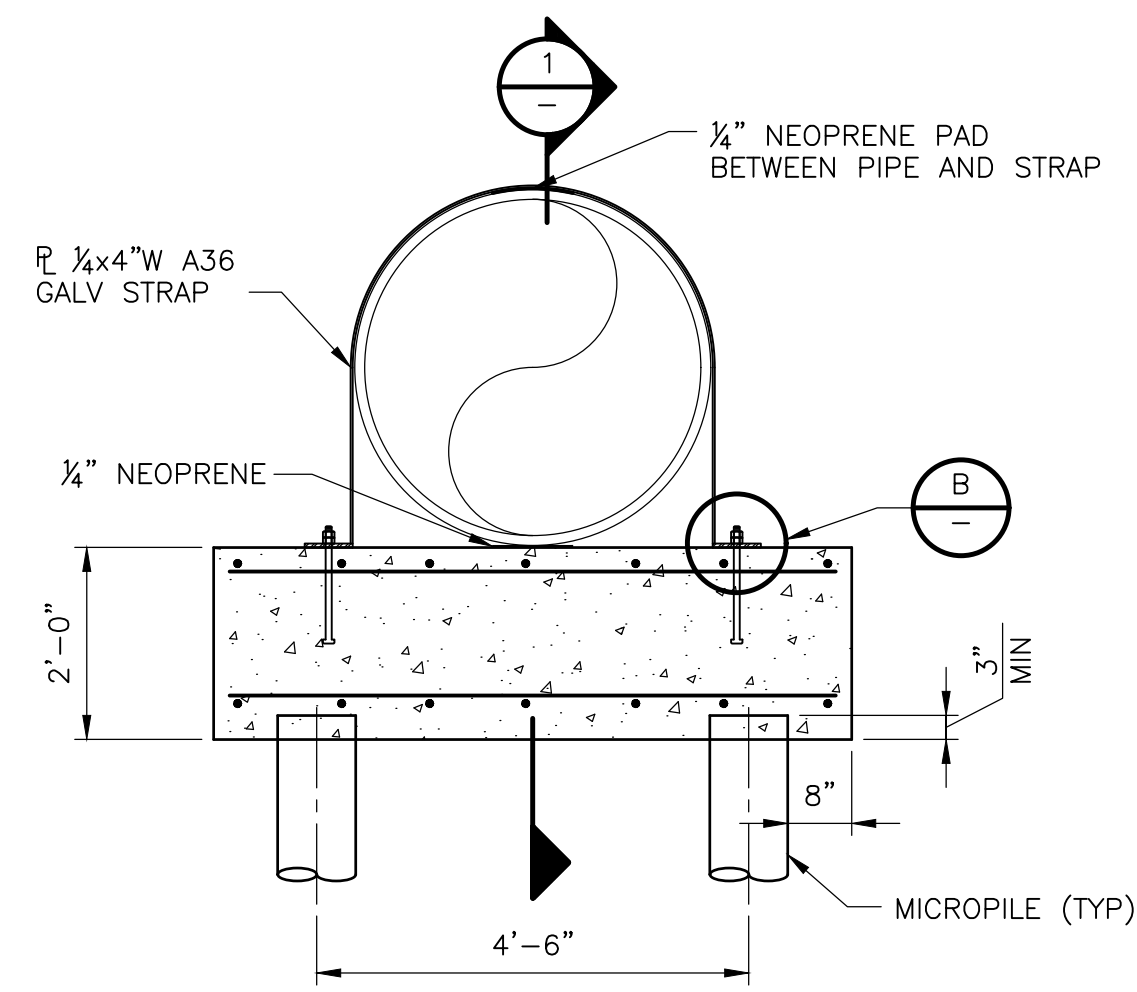
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SHEET TITLE
STRUCTURAL

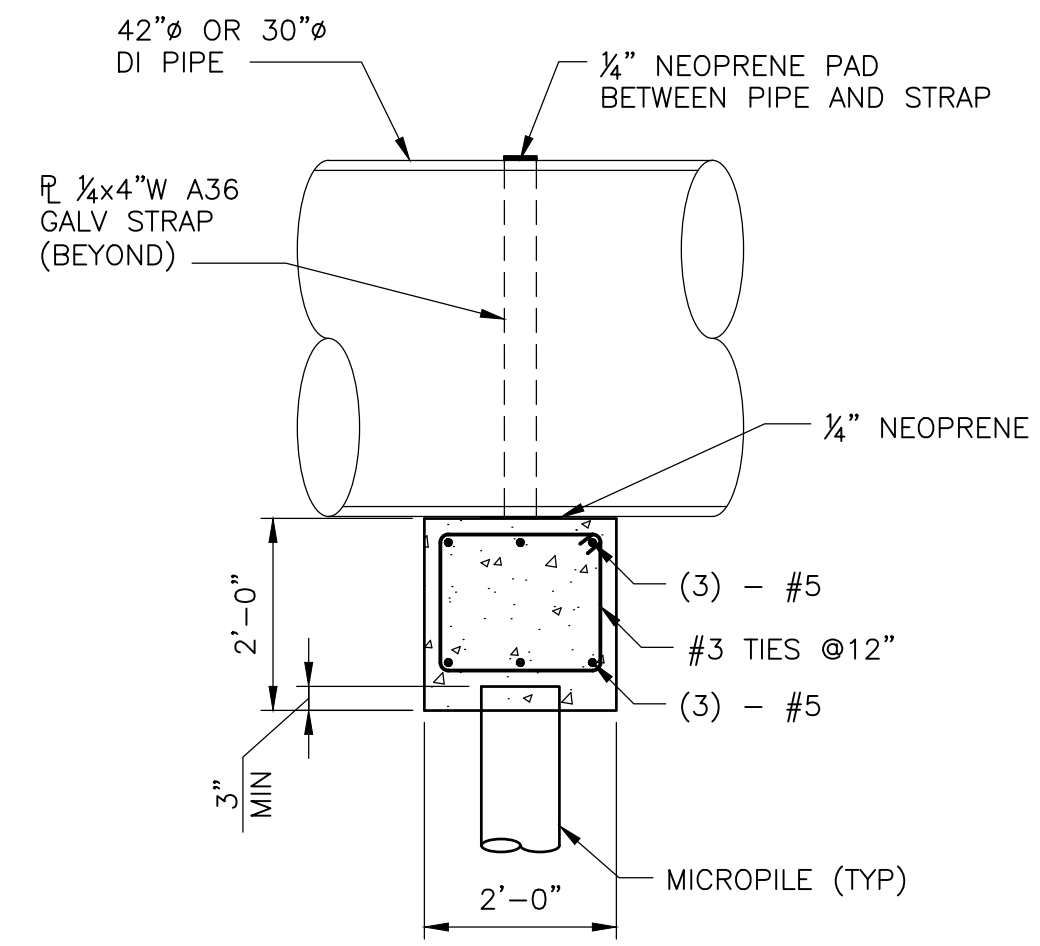
MISCELLANEOUS PADS
PLANS AND SECTIONS

SHEET S-9

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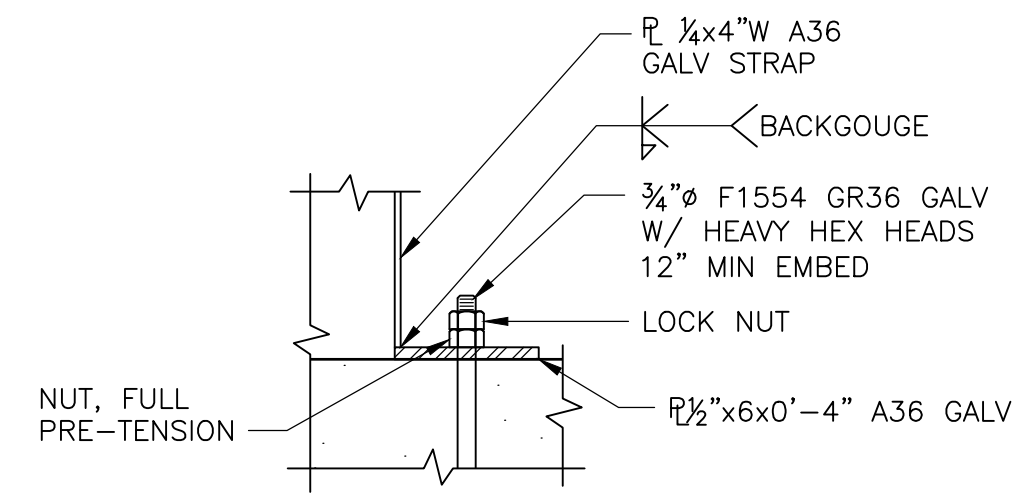


DETAIL A
3/4" = 1'-0"



SECTION 1
3/4" = 1'-0"

NOTE:
1. REFER TO SD-3 FOR MICROPILE LENGTH, EMBEDMENT AND REINFORCING.



DETAIL B
1 1/2" = 1'-0"



DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
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CONSENT DECREE PROGRAM



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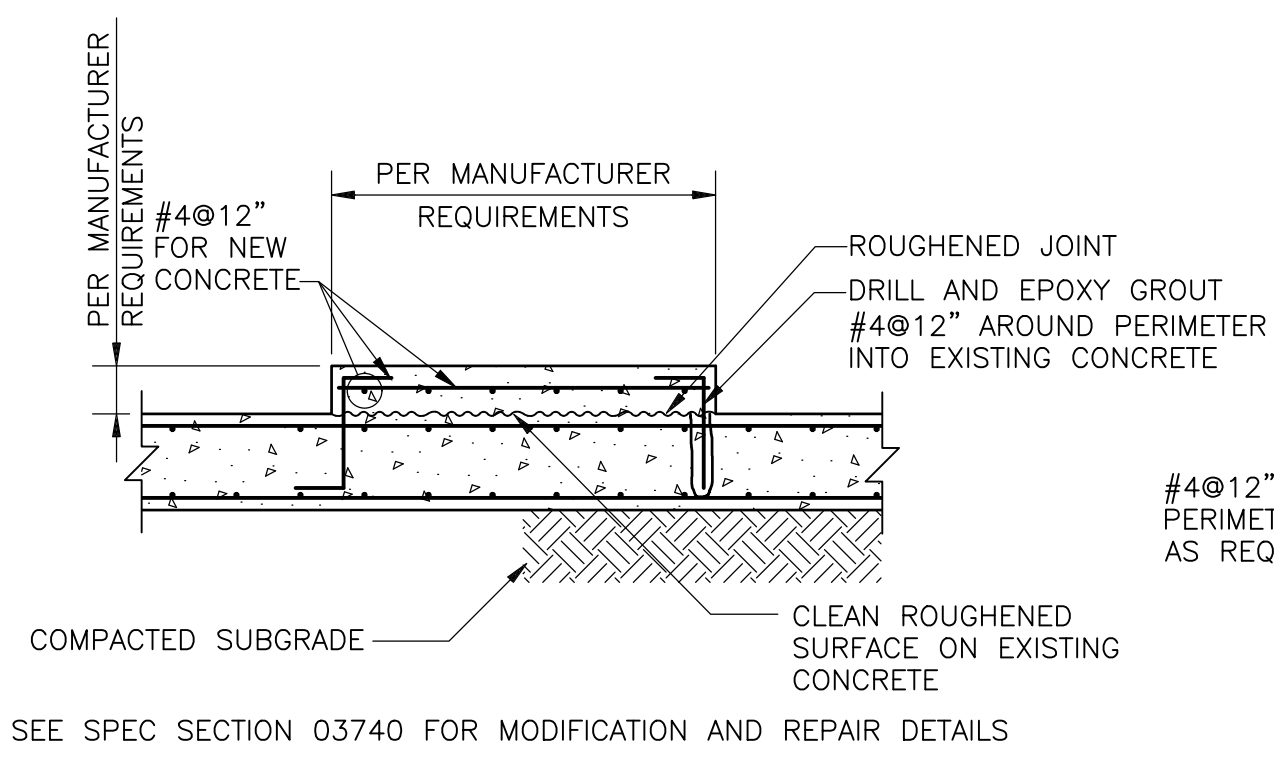
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SHEET TITLE
STRUCTURAL
STREAM CROSSING
PIER FOUNDATION
PLAN

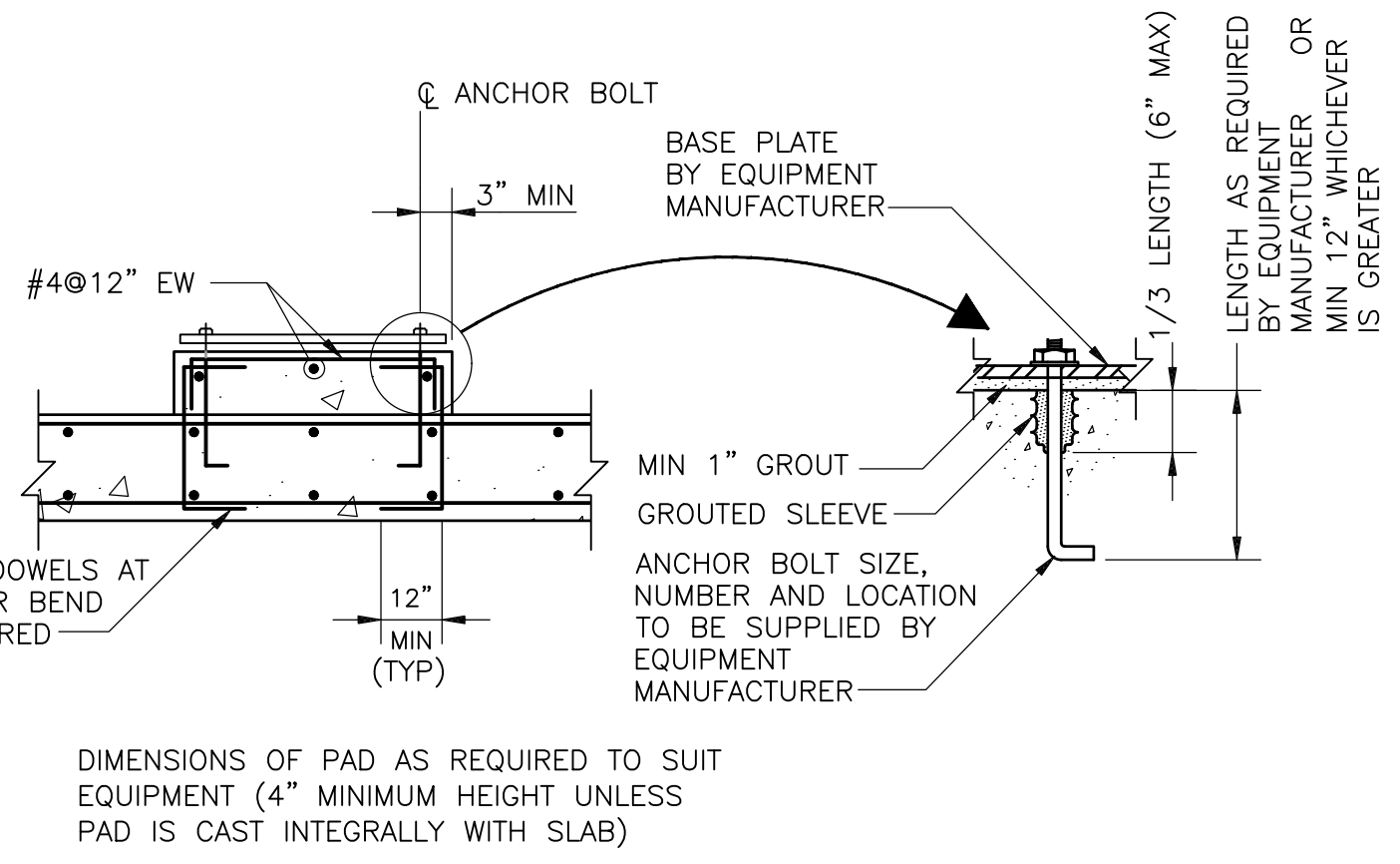
SHEET S-10

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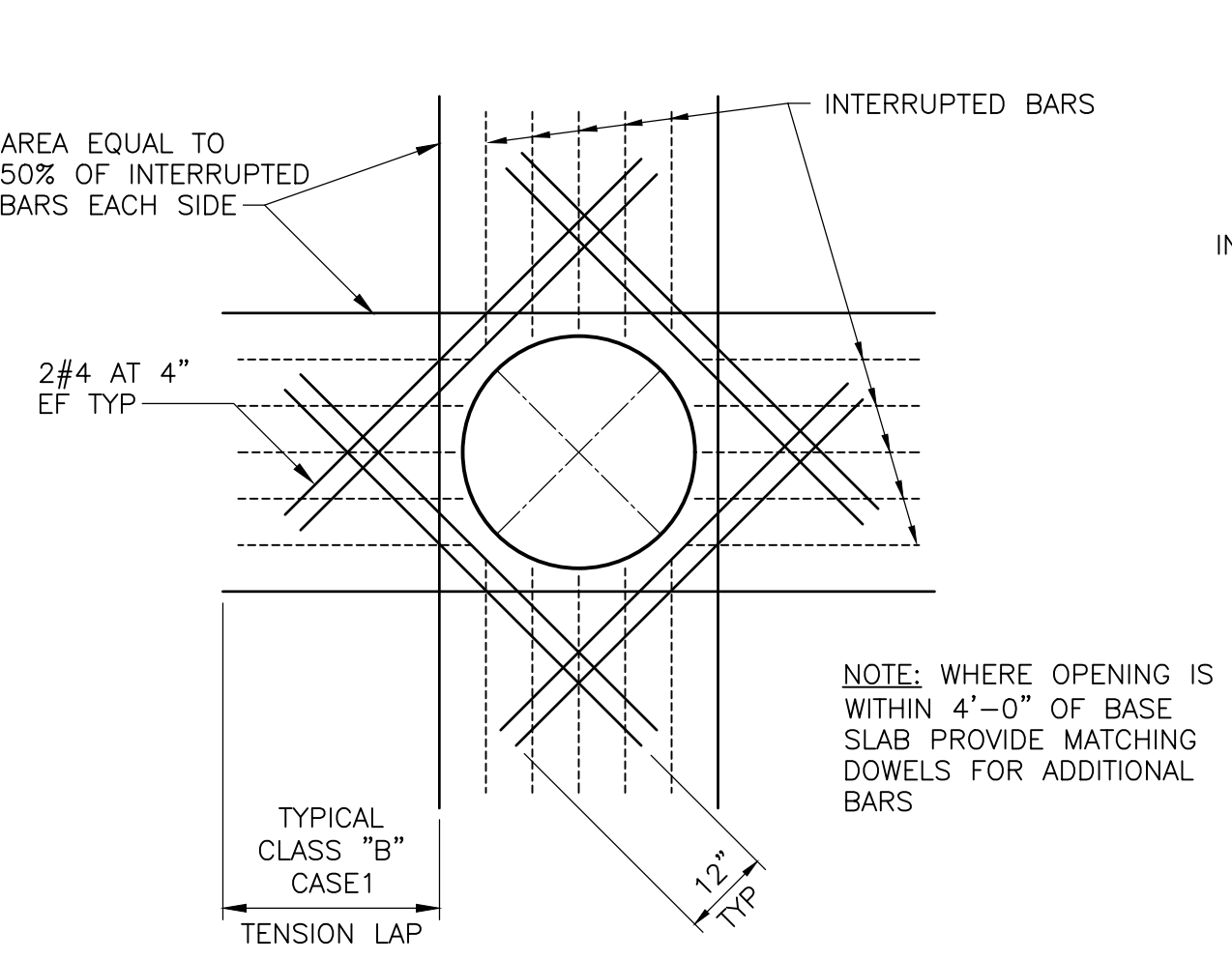
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 CREATED: 11/8/2019 LAST SAVED: 11/8/2019
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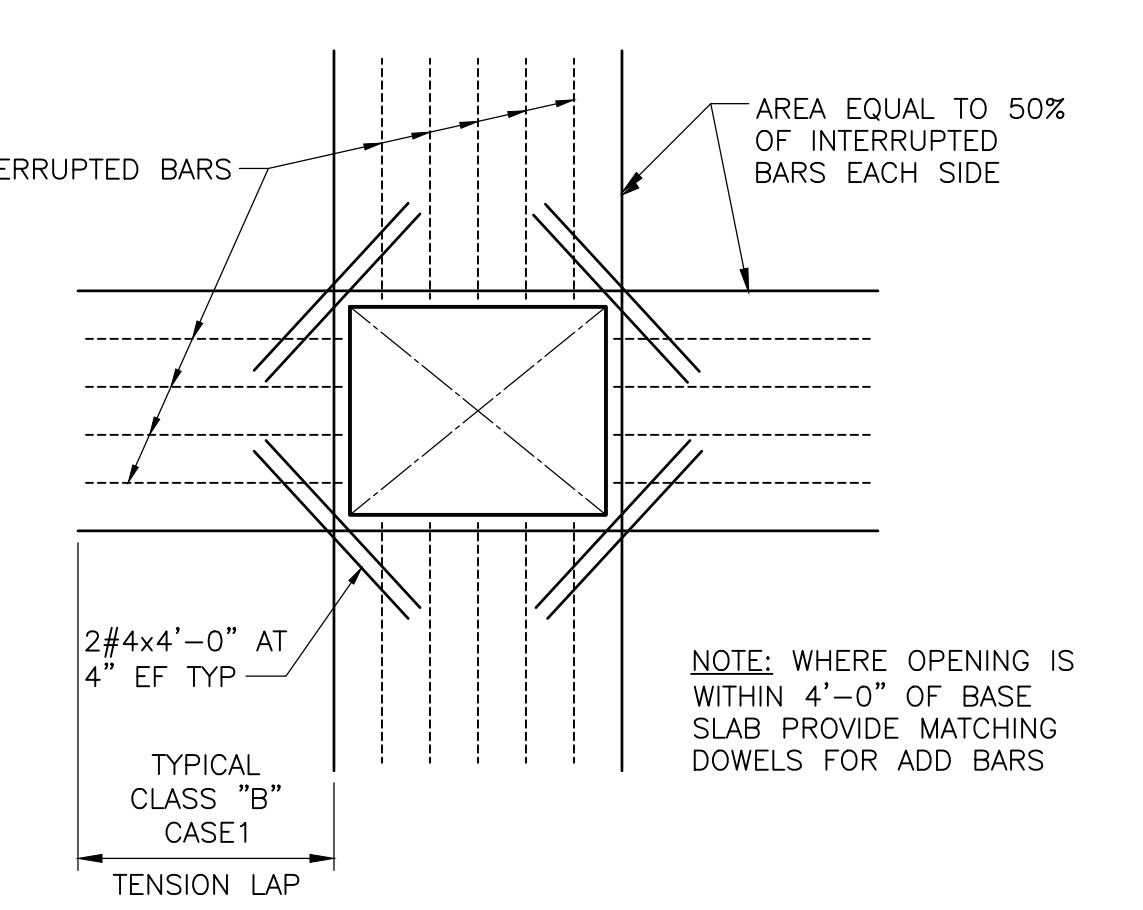
HOUSEKEEPING PAD FOR NEW OR EXISTING SLAB
 DETAIL A
 NTS



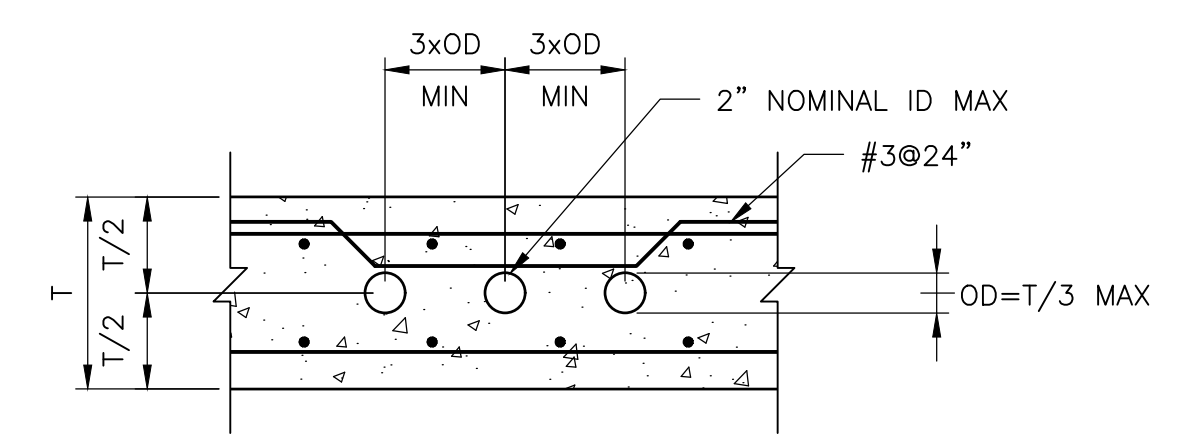
EQUIPMENT PAD
 DETAIL B
 NTS



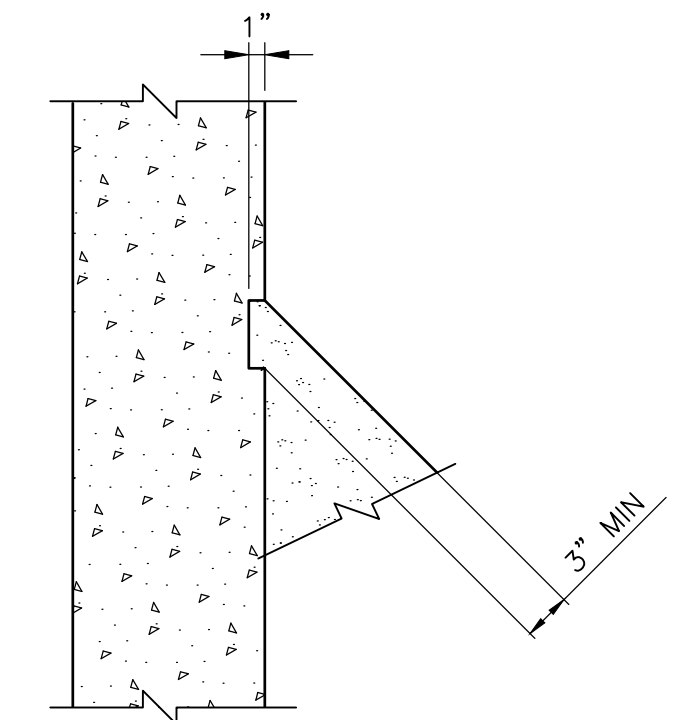
REINFORCEMENT AT CIRCULAR OPENINGS GREATER THAN 12"
 DETAIL C
 NTS



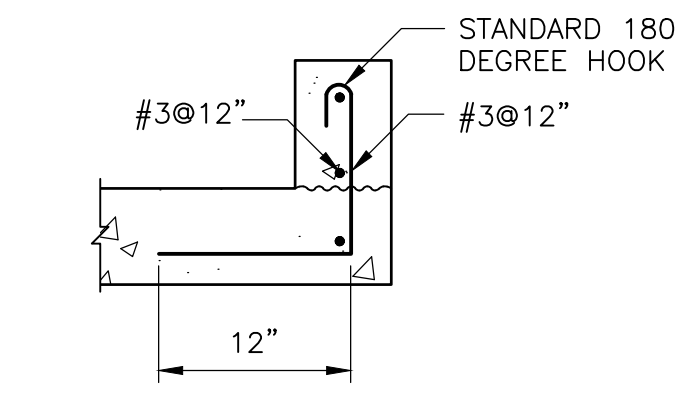
REINFORCEMENT AT RECTANGULAR OPENINGS GREATER THAN 12"
 DETAIL D
 NTS



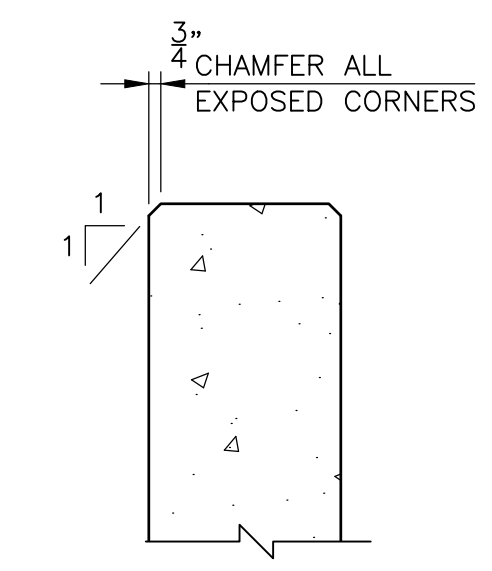
CONDUIT IN SLAB OR WALL
 DETAIL E
 NTS



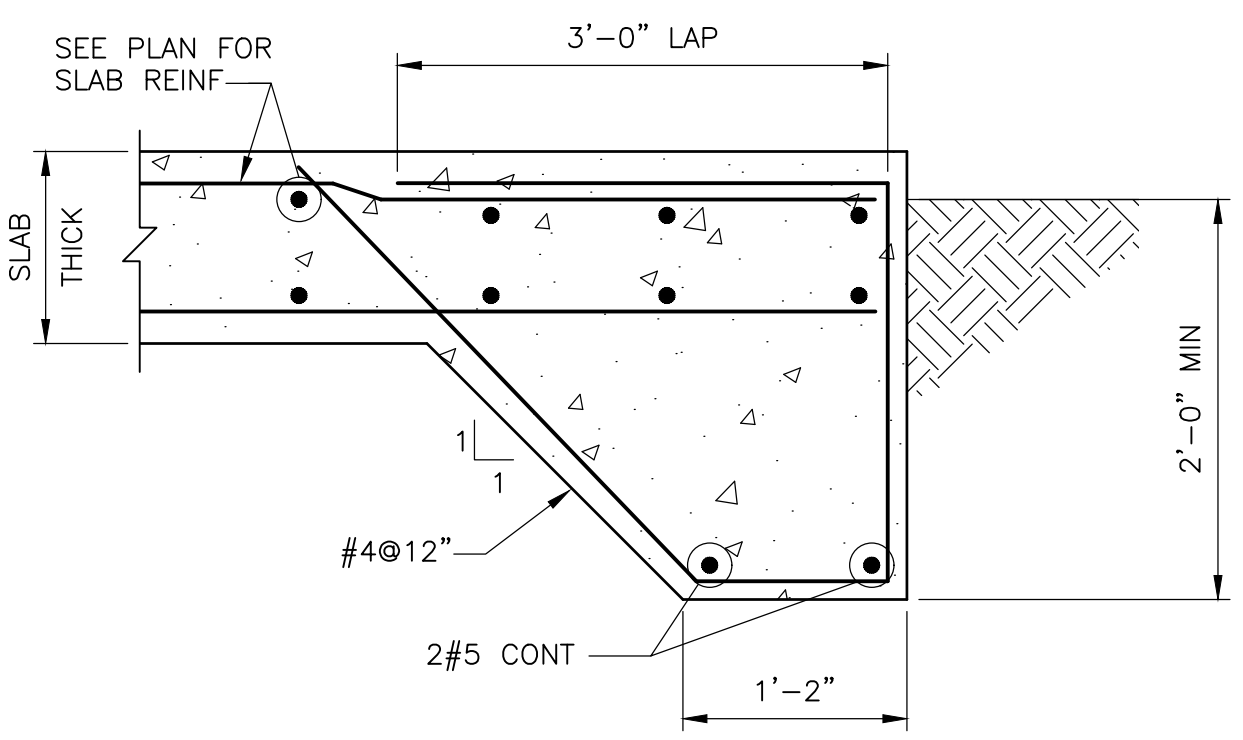
GROUT FILLET
 DETAIL F
 NTS



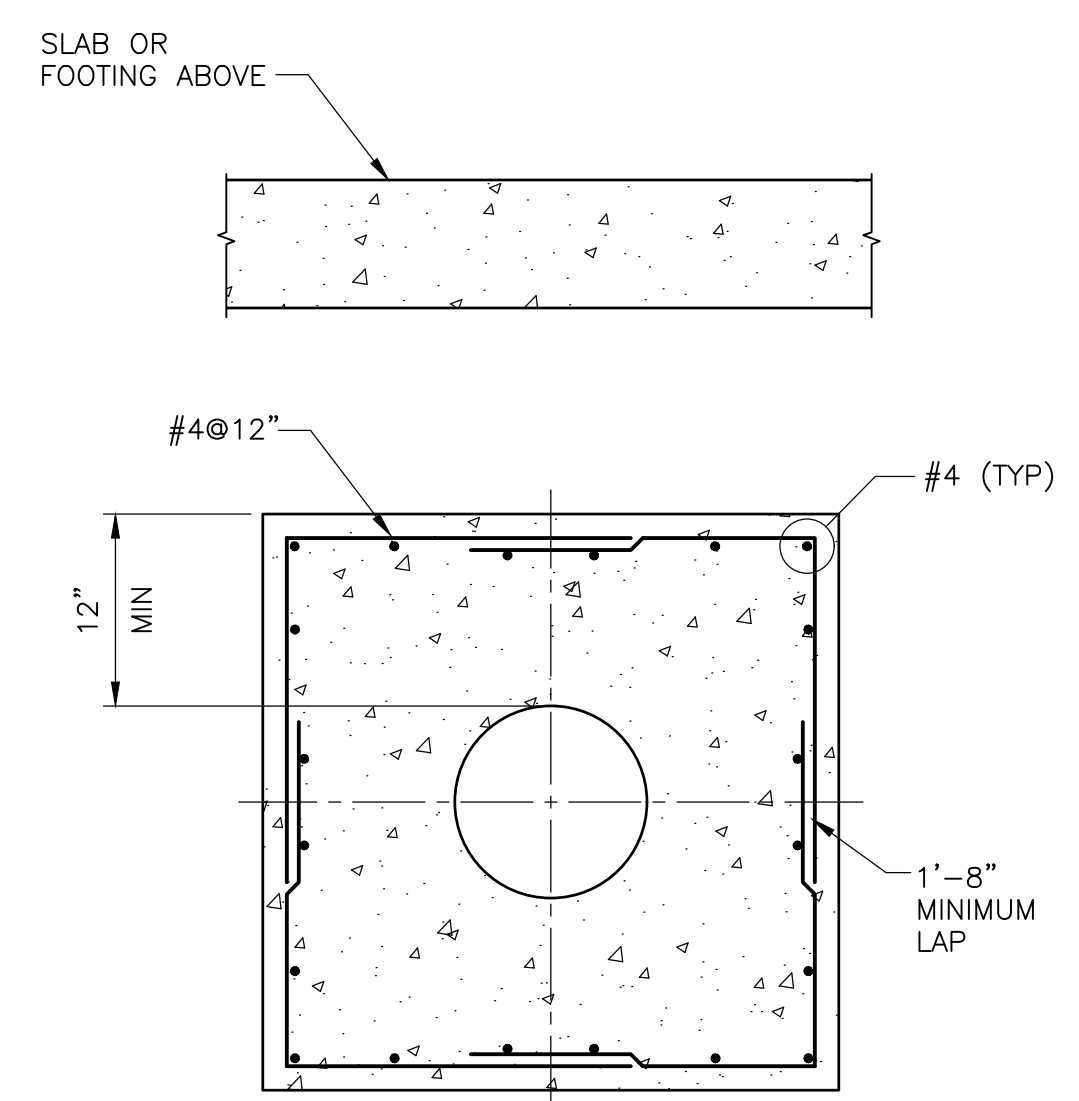
CURB
 DETAIL G
 NTS



CHAMFER
 DETAIL H
 NTS

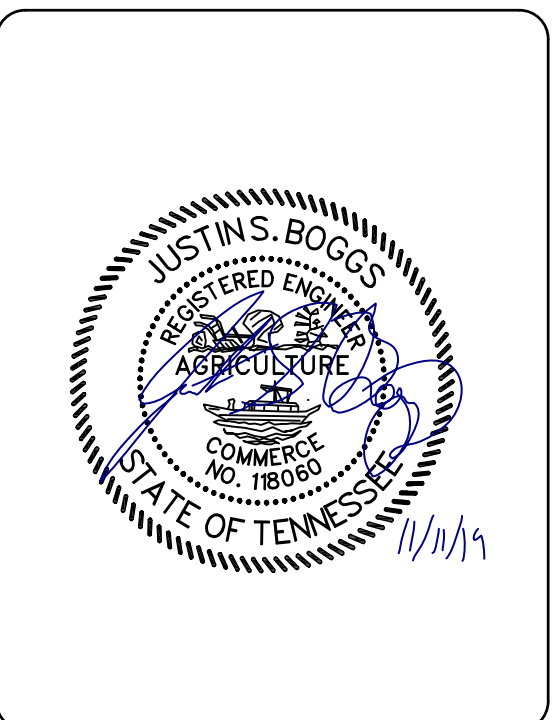


THICKENED EDGE SLAB
 DETAIL J
 NTS



PIPE ENCASEMENT
 DETAIL K
 NTS

- PIPE ENCASEMENT NOTES:
1. ALL PIPE SHALL BE PRESSURE TESTED BEFORE CONCRETE PLACEMENT.
 2. ALL BELOW GRADE PIPES SHALL BE SUPPORTED ON CONCRETE BLOCKS PRIOR TO CASTING OF CONCRETE BEDDING. SIZE AND SPACING OF CONCRETE BLOCK SUPPORTS SHALL BE PER PIPE MANUFACTURER.
 3. FOR ALL PIPES 12-INCH DIAMETER AND LARGER, ENCASEMENT SHALL BE CAST IN TWO POURS. INITIAL CAST SHALL BE CURED FOR 12 HR. BEFORE CASTING THE SECOND POUR.
 4. THE DEPTH OF THE INITIAL POUR SHALL BE SELECTED TO PREVENT FLOTATION OF THE PIPE. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT FLOTATION OF THE PIPE DURING CONCRETING.
 5. ENCASE ALL PIPES BELOW SLABS AND FOOTINGS. EXTEND ENCASEMENT 5'-0" BEYOND EDGE OF SLAB OR FOOTING.
 6. ENCASEMENT FOR 6" DIAMETER AND SMALLER PIPES SHALL BE 6" MINIMUM. FOR PIPE DIAMETERS GREATER THAN 6", ENCASEMENT SHALL BE 12" MINIMUM.
 7. MAINTAIN MINIMUM COVER FOR LAPS FOR PIPES SMALLER THAN 6" DIAMETER.



DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
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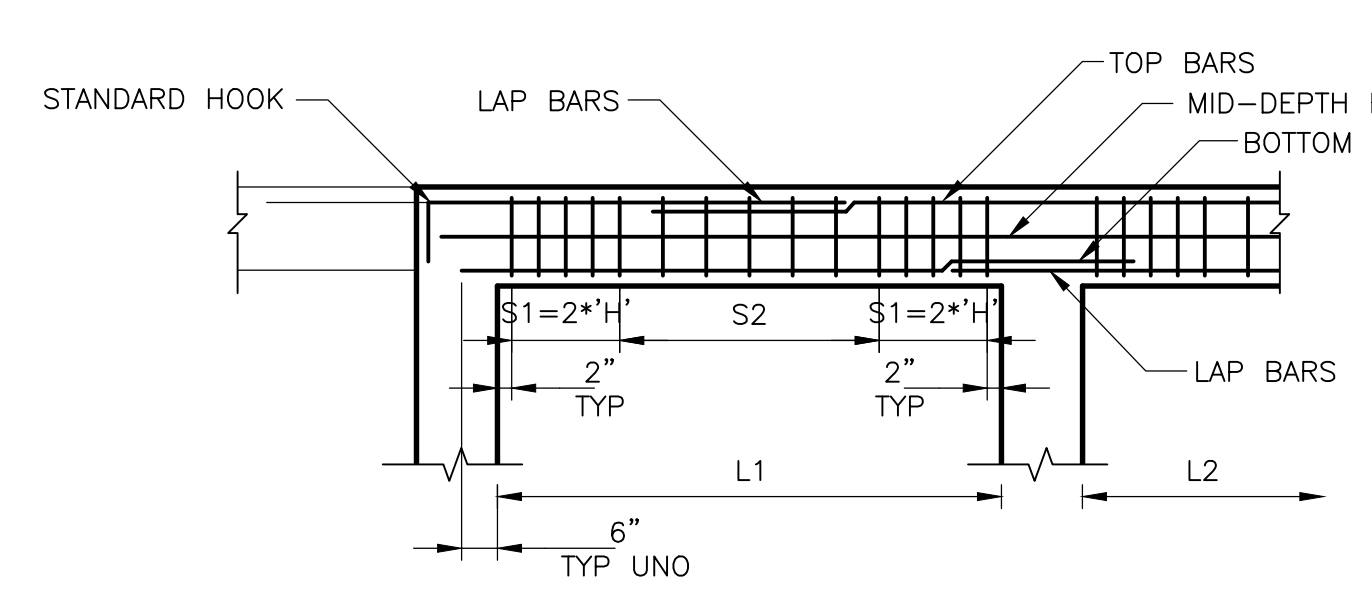
SHEET TITLE
 STRUCTURAL
 STANDARD STRUCTURAL DETAILS
 SHEET SD-2

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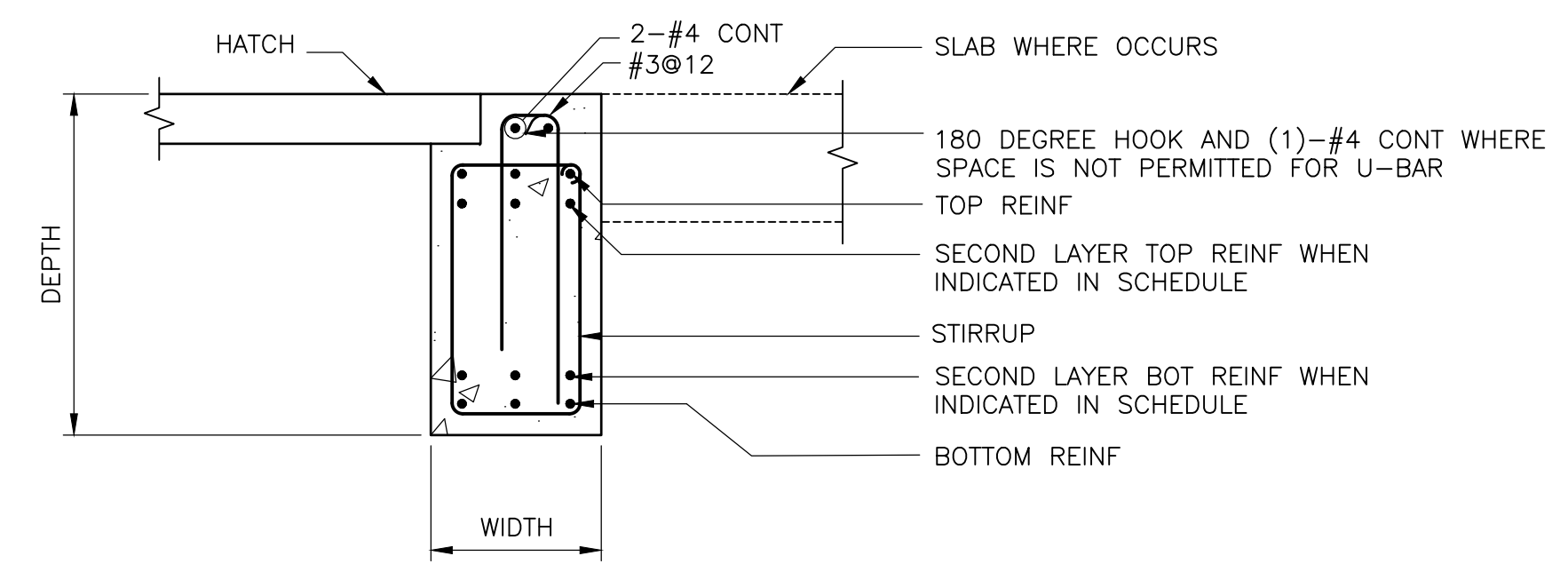
BEAM SCHEDULE											
MARK	T/BEAM ELEV	SIZE 'B' x 'H'	BOTTOM BARS	TOP BARS	MID-DEPTH BARS (SIDE FACE)	STIRRUPS				SKETCH	REMARKS
						SIZE	TYPE	SPACING S1 = 2*'H' FROM FACE OF SUPPORT AND AT ALL SPLICES	SPACING S2 = INTERIOR SPACING		
PSRB-1	661.00'	16"x24"	4#8	4#8	2#8	#3	□	8" OC	8" OC		

BEAM NOTES

- CONTINUOUS TOP AND BOTTOM BARS SHALL BE PLACED IN THE BEAM SECTION SUCH THAT ONE OF THE CONTINUOUS BARS IS LOCATED IN EACH CORNER OF THE BEAM STIRRUPS.
- ALL TOP AND BOTTOM BARS SHALL BE PLACED IN ONE LAYER UNLESS INDICATED OTHERWISE. WHERE MORE THAN ONE LAYER IS NOTED, PROVIDE GREATER OF 2.5 INCHES OR 3 BAR DIAMETER CLEAR BETWEEN LAYERS.
- SIDE FACE REINFORCING SHALL BE CONTINUOUS. A 90° STANDARD HOOK SHALL BE PROVIDED AT THE EXTERIOR ENDS OF SPANS WHERE INDICATED IN SCHEDULE. SCHEDULED SIDE FACE REINFORCING SHALL BE SPACED EQUALLY ON EACH FACE.
- WHERE TWO-PIECE STIRRUPS ARE SHOWN OR APPROVED, CONSECUTIVE STIRRUP CROSSTIES SHALL HAVE THEIR 90° HOOK PLACED ON OPPOSITE SIDES. IN THE EVENT THAT A SLAB FRAMES INTO ONLY ONE SIDE OF A BEAM, THEN 90° HOOK SHALL BE PLACED ON THE SLAB SIDE CONSISTENTLY. IN THE EVENT A BEAM IS NOT CONFINED BY A SLAB ON EITHER SIDE, THE STIRRUP CROSSTIE SHALL HAVE TWO 135° HOOKS AND NO 90° HOOK.
- SPLICE CONTINUOUS REINFORCING ONLY WHERE NECESSARY. SPLICE IN ACCORDANCE WITH TYPICAL BEAM REINFORCEMENT DETAIL.
- CONTINUOUS REINFORCING ONLY WHERE NECESSARY. SPLICE IN ACCORDANCE WITH TYPICAL BEAM REINFORCEMENT DETAIL.



TYPICAL BEAM REINFORCEMENT
NTS



TYPICAL BEAM SECTION AT HATCH
NTS

NOTE: BEAM DEPTH INDICATED IS MINIMUM REQUIRED BEAM DEPTH AT LOW POINT OF FLOOR (WHERE FLOOR SLOPES)

CLASS B TENSION LAP SPLICE LENGTHS IN WALLS AND SLABS (INCHES)

BAR SIZE	BLACK STEEL f'c=4000 psi	
	TOP BARS	OTHER BARS
3	15	12
4	20	15
5	29	23
6	40	31
7	65	50
8	81	62
8*	49	37
9*	60	46
10*	74	57

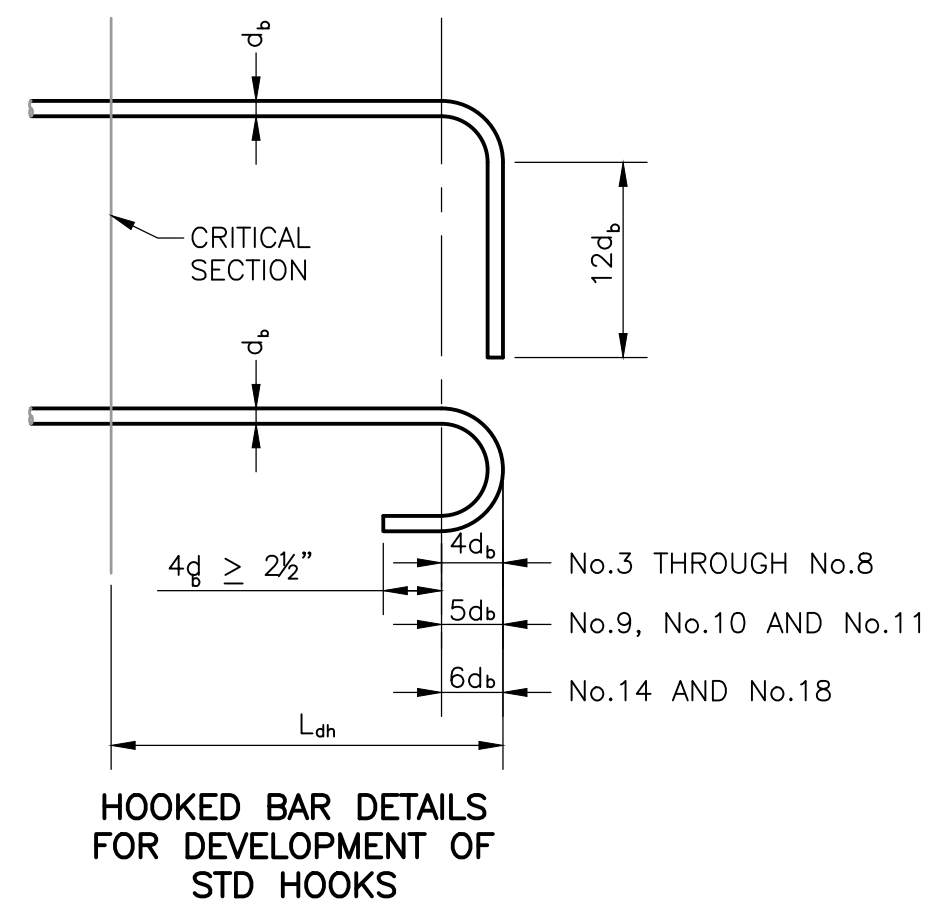
TENSION DEVELOPMENT LENGTHS IN WALLS AND SLABS (INCHES)

BAR SIZE	BLACK STEEL f'c=4000 psi	
	TOP BARS	OTHER BARS
3	12	12
4	15	12
5	22	17
6	31	24
7	50	38
8	62	48
8*	37	29
9*	46	36
10*	57	44

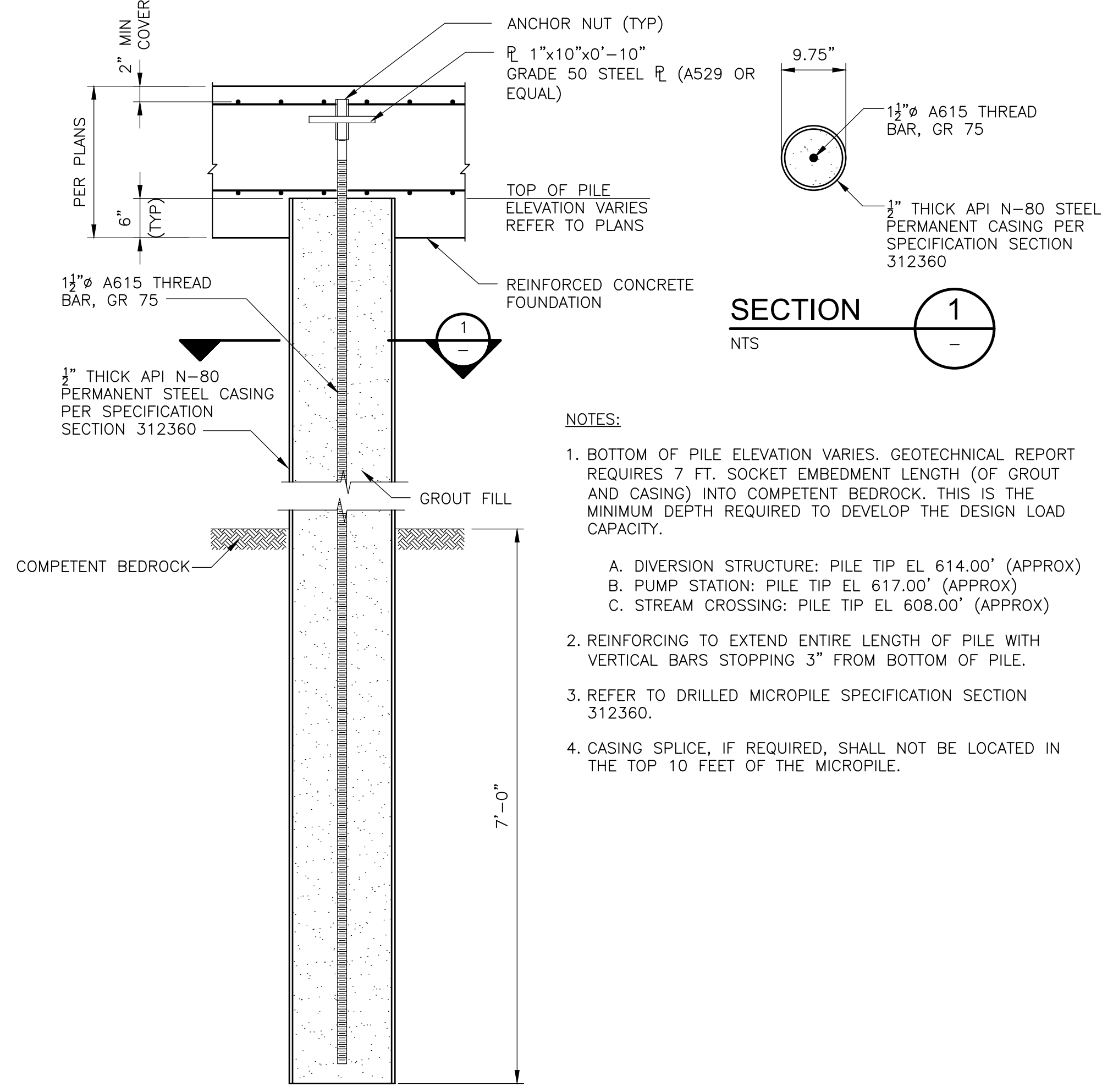
NOTES:

- MINIMUM BAR SPACING = 6" INCHES ON CENTER.
- MINIMUM CONCRETE COVER = 1", EXCEPT AS NOTED BY * .
* INDICATES MINIMUM CONCRETE COVER= 2".
- A TOP BAR IS A HORIZONTAL BAR WHERE MORE THAN 12" OF FRESH CONCRETE IS CAST DIRECTLY BELOW THE BAR. WHERE HORIZONTAL WALL REINFORCEMENT IS UNIFORMLY SPACED IN A VERTICAL PLANE AT 12" MAXIMUM SPACING, LENGTHS MAY BE AS FOR "OTHER BARS".
- LENGTHS FOR BEAMS AND COLUMNS SHALL BE AS SHOWN ON THE DRAWINGS.

STANDARD HOOKS, LAP SPLICE AND DEVELOPMENT LENGTHS TABLES



HOOKED BAR DETAILS FOR DEVELOPMENT OF STD HOOKS



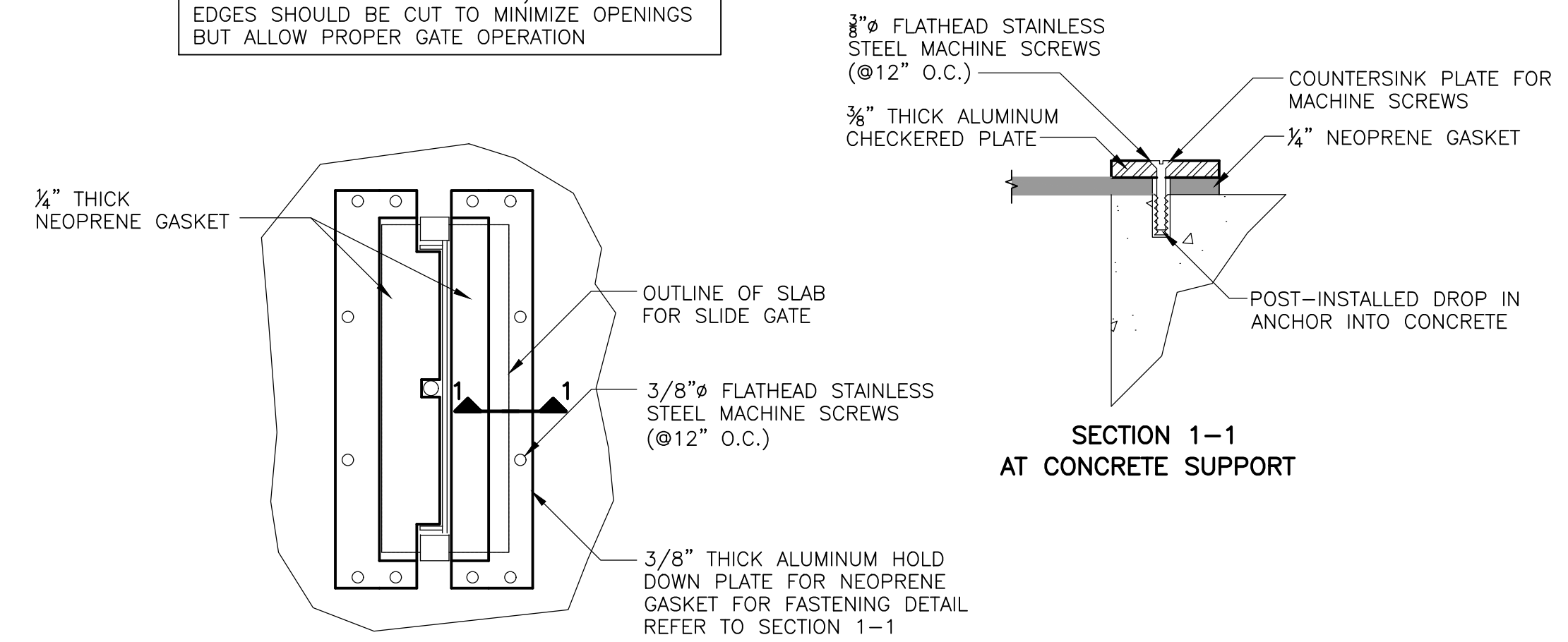
TYPICAL MICROPILE DETAIL

DETAIL A
NTS

NOTES:

- BOTTOM OF PILE ELEVATION VARIES. GEOTECHNICAL REPORT REQUIRES 7 FT. SOCKET EMBEDMENT LENGTH (OF GROUT AND CASING) INTO COMPETENT BEDROCK. THIS IS THE MINIMUM DEPTH REQUIRED TO DEVELOP THE DESIGN LOAD CAPACITY.
 - A. DIVERSION STRUCTURE: PILE TIP EL 614.00' (APPROX)
 - B. PUMP STATION: PILE TIP EL 617.00' (APPROX)
 - C. STREAM CROSSING: PILE TIP EL 608.00' (APPROX)
- REINFORCING TO EXTEND ENTIRE LENGTH OF PILE WITH VERTICAL BARS STOPPING 3" FROM BOTTOM OF PILE.
- REFER TO DRILLED MICROPILE SPECIFICATION SECTION 312360.
- CASING SPLICE, IF REQUIRED, SHALL NOT BE LOCATED IN THE TOP 10 FEET OF THE MICROPILE.

NOTE: GASKET SHOULD BE CUT TO ALLOW FOR SNUG FIT (SLIGHT 1" OVERLAP ON THE GATE EDGE TO CREATE A TIGHT SEAL) ALL OTHER EDGES SHOULD BE CUT TO MINIMIZE OPENINGS BUT ALLOW PROPER GATE OPERATION



NEOPRENE SLIDE GATE SEAL

DETAIL B
NTS

CDM Smith
 CDM Smith Inc.
 651 East 4th Street Suite 100
 Chattanooga, TN 37403
 Tel: (423) 771-4495

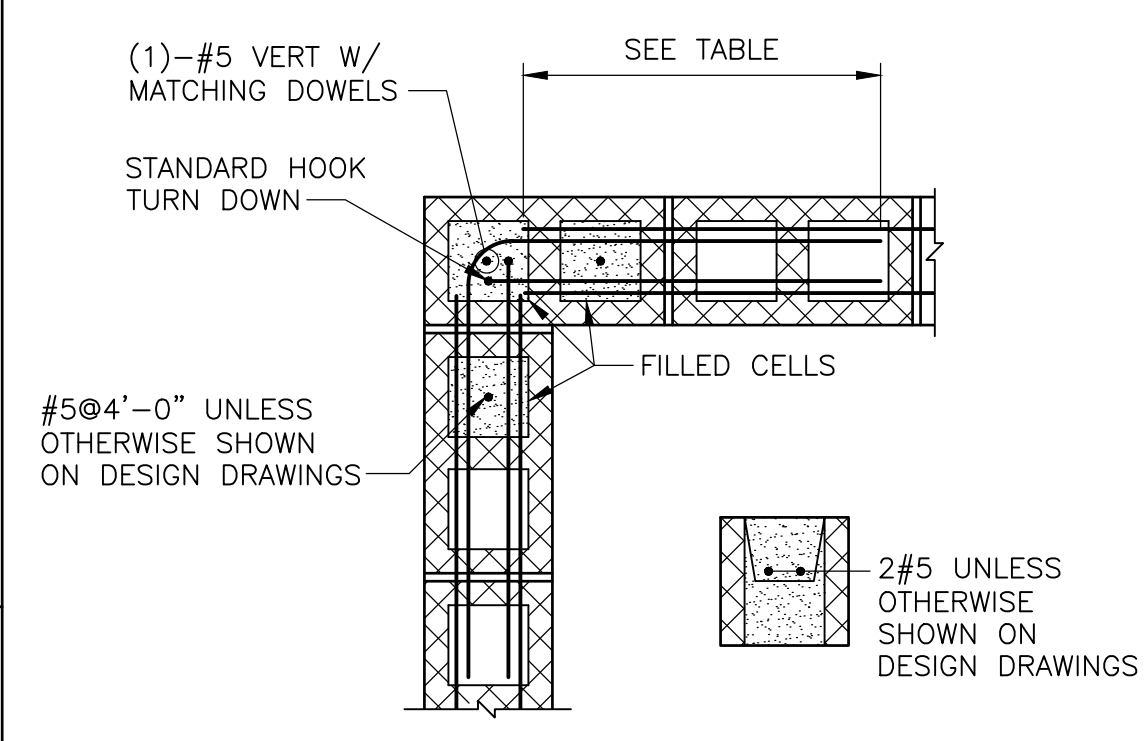


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 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

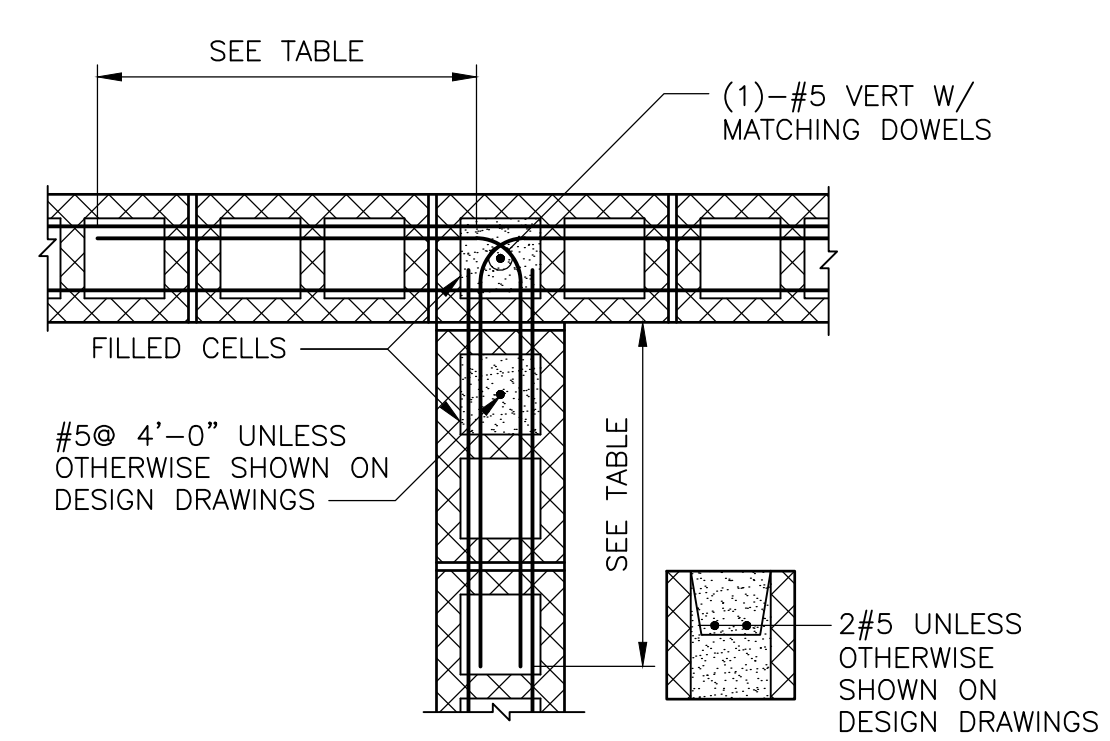
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 SHEET TITLE: STRUCTURAL
STANDARD STRUCTURAL DETAILS
 SHEET: SD-3

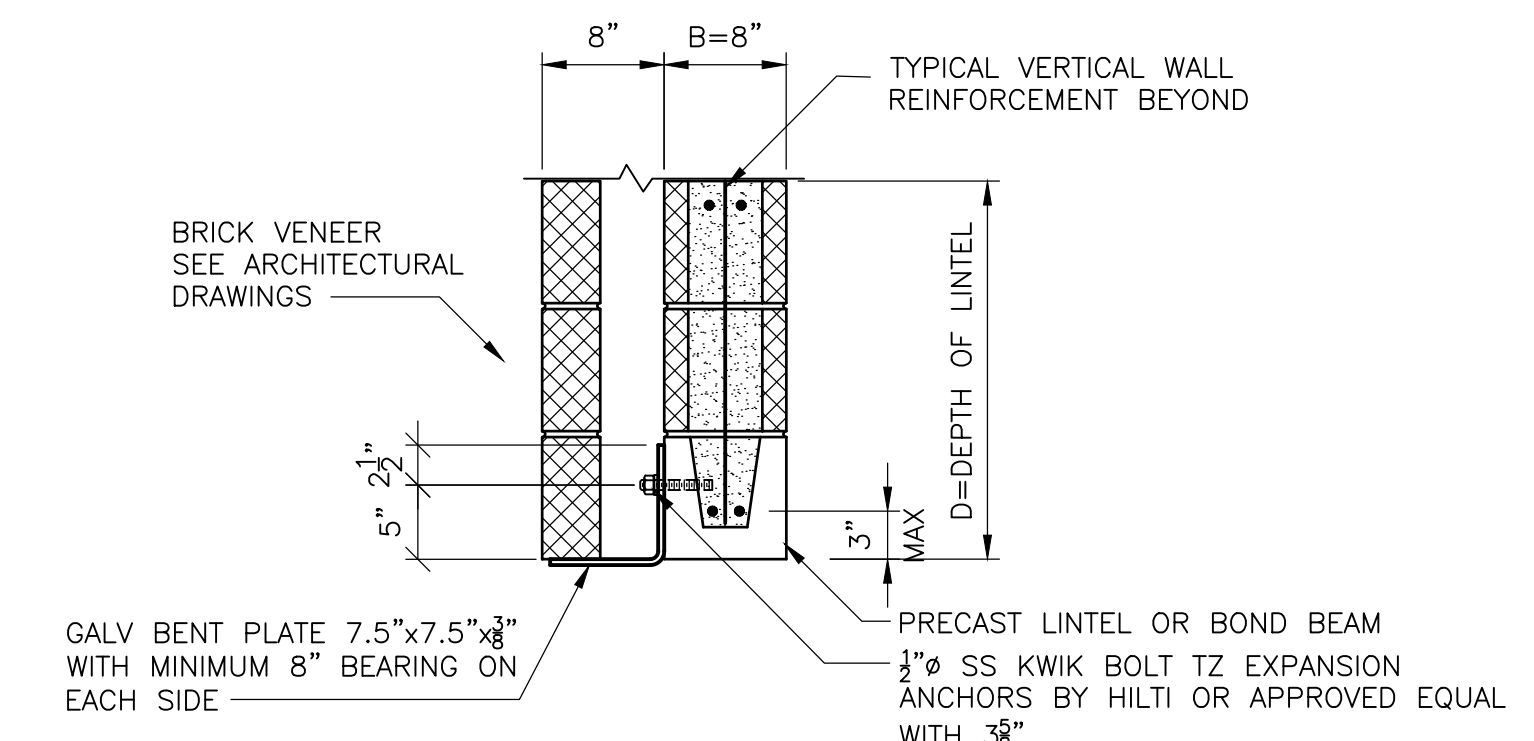
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CORNER CMU/BOND BEAM/FILLED CELL
DETAIL A
 NTS



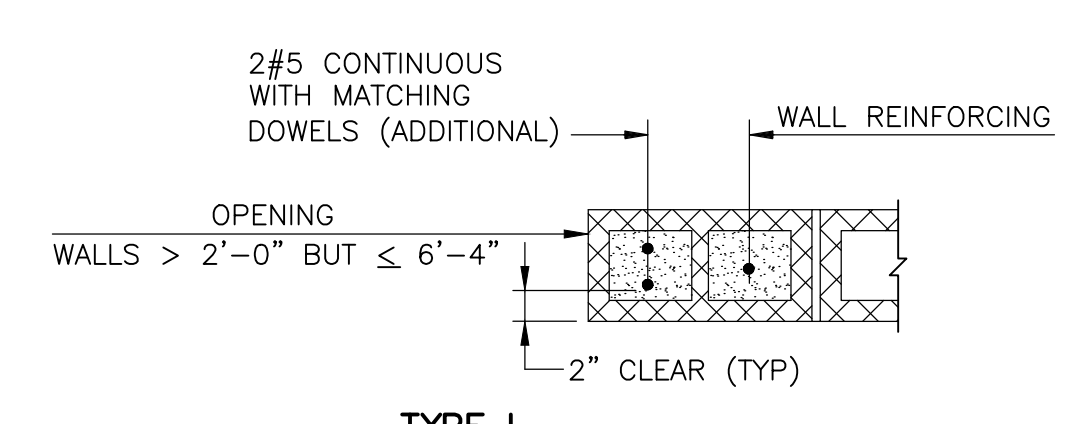
INTERSECTION CMU/BOND BEAM/FILLED CELL
DETAIL B
 NTS



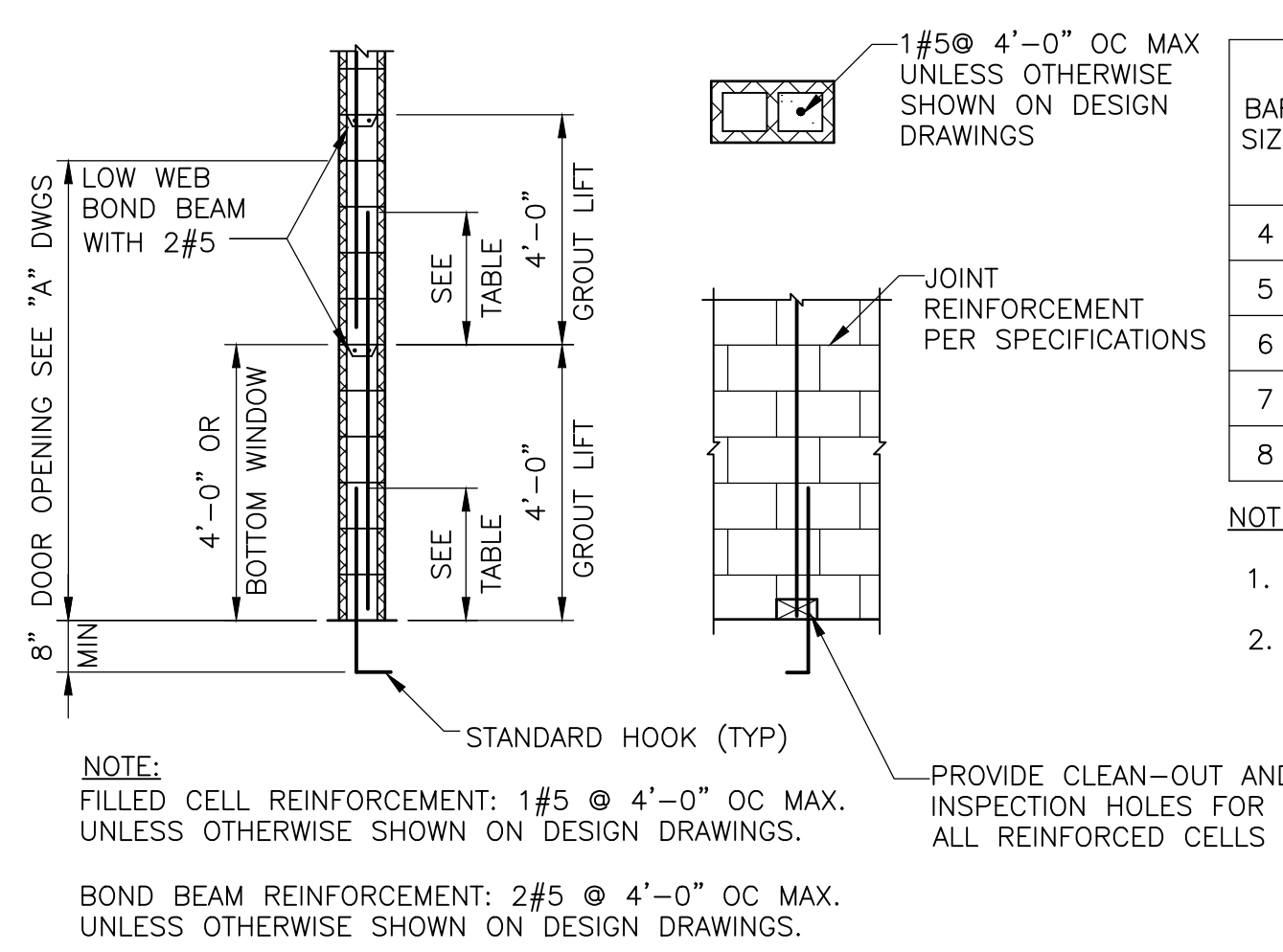
LINTEL SCHEDULE

LINTEL ID	CLEAR SPAN	TYPE ¹	B	D	LOAD CAPACITY (PLF)		BEARING LENGTH
					VERTICAL	LATERAL	
L1	0" TO ≤ 3'-4"	8F8-0B	8"	8"	1349	411	8"
L2	>3'-4" TO ≤ 6'-4"	8F16-0B	8"	16"	1625	326	8"

1. LINTELS SHALL BE PRE-CAST/PRE-STRESSED CONCRETE BY CAST CRETE, OR APPROVED EQUAL. REINFORCING SHALL EXTEND PAST OPENING AS SHOWN ON DETAIL F OF THIS SHEET



TYPICAL 8" CMU WALL OPENING
DETAIL D
 NTS



FILLED CELL
DETAIL E
 NTS

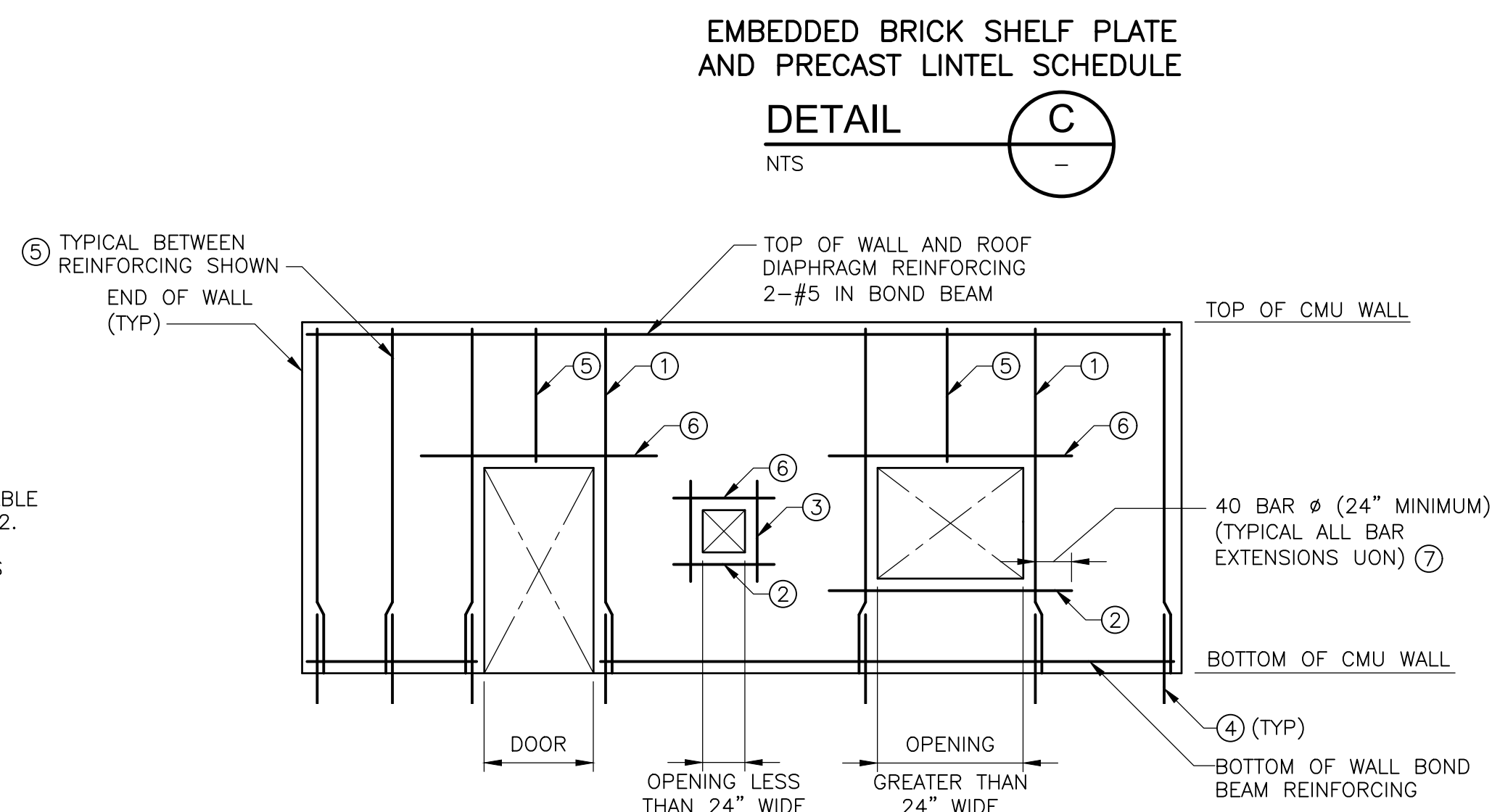
LAP SPLICE LENGTH (IN)

BAR SIZE	8" BLOCK	
	CENTER	EF
4	14	31
5	21	49
6	39	91
7	53	124
8	80	186

NOTES:
 1. MASONRY LAP SPLICES APPLICABLE FOR ACI 530-11 AND IBC 2012.
 2. SEE DRAWINGS OR CONTACT ENGINEER FOR SPLICE LENGTHS NOT SHOWN.

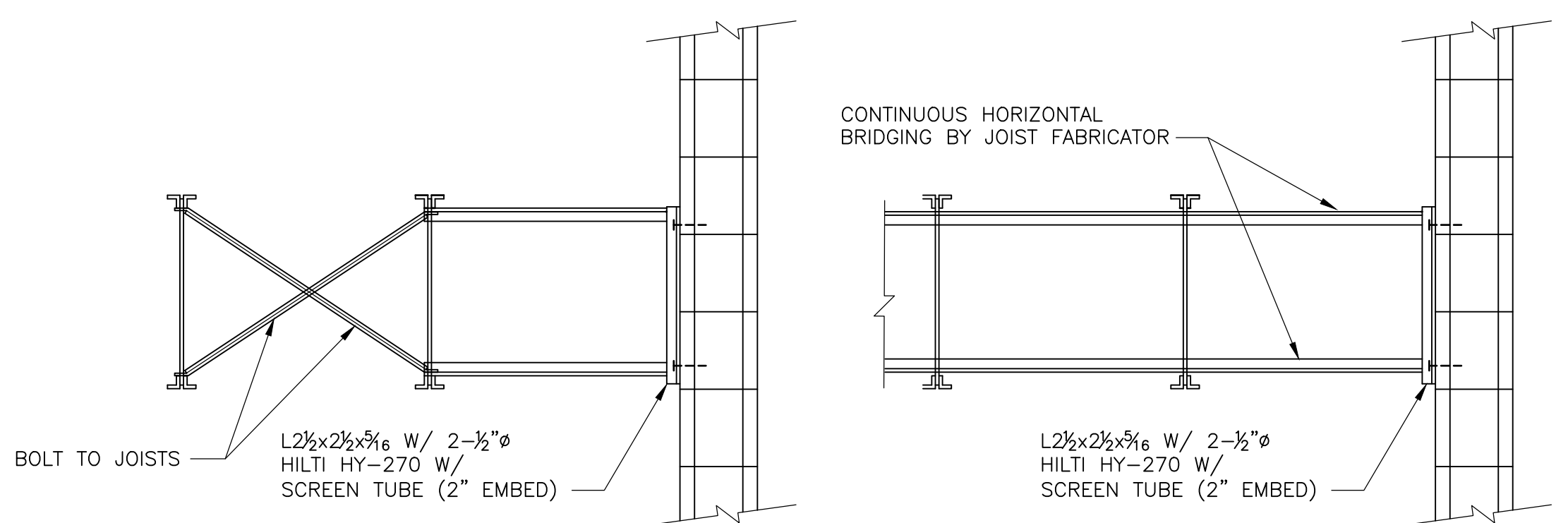
NOTE:
 FILLED CELL REINFORCEMENT: 1#5 @ 4'-0" OC MAX. UNLESS OTHERWISE SHOWN ON DESIGN DRAWINGS.
 BOND BEAM REINFORCEMENT: 2#5 @ 4'-0" OC MAX. UNLESS OTHERWISE SHOWN ON DESIGN DRAWINGS.

PROVIDE CLEAN-OUT AND INSPECTION HOLES FOR ALL REINFORCED CELLS

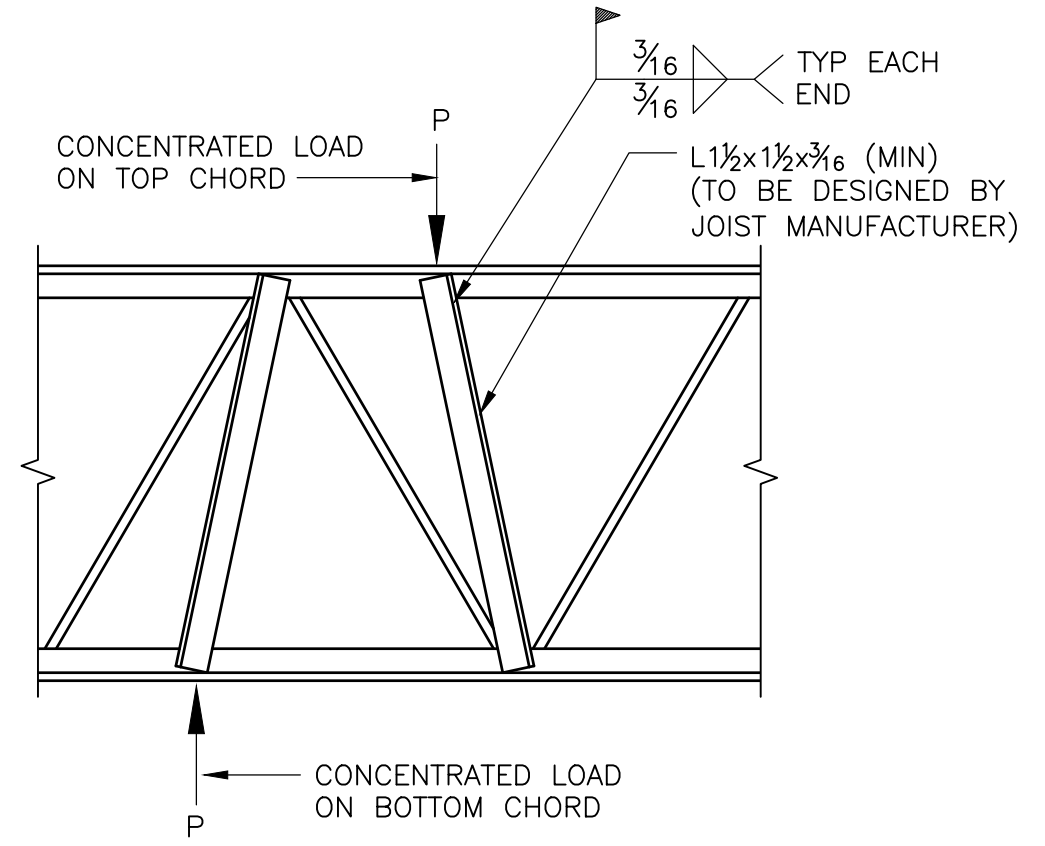


TYPICAL CMU WALL ELEVATION
DETAIL F
 NTS

NOTES:
 ① SEE TYPICAL CMU WALL OPENING JAMB DETAILS ON THIS SHEET.
 ② SILL BARS, 2-#5 IN BOND BEAM.
 ③ 1-#5 EACH SIDE UNO.
 ④ SEE FILLED CELL DETAIL ON THIS SHEET AND SECTIONS AND ELEVATIONS.
 ⑤ BETWEEN BARS SHOWN, PROVIDE TYPICAL WALL REINFORCING PER FILLED CELL DETAIL ON THIS SHEET AND SECTIONS AND ELEVATIONS.
 ⑥ SEE TYPICAL PRECAST LINTEL REINFORCING SCHEDULE ON THIS SHEET.
 ⑦ IF FULL LENGTH IS NOT AVAILABLE, EXTEND AS FAR AS POSSIBLE, HOOK 90 DEGREE, THEN EXTEND BEYOND BEND, REMAINDER OF LENGTH REQUIRED (BUT NOT LESS THAN 12").



TYPICAL BRIDGING DETAIL
DETAIL G
 NTS



CONCENTRATED LOAD REINFORCEMENT
DETAIL H
 NTS



DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
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SHEET TITLE
STRUCTURAL
STANDARD STRUCTURAL DETAILS
 SHEET SD-4

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SCHEDULE OF SPECIAL INSPECTIONS

- NOTES:
- THIS DRAWING IS PROVIDED TO OUTLINE THE MINIMUM LEVEL OF SPECIAL INSPECTIONS DURING CONSTRUCTION TO ENSURE CONFORMANCE TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. A STATEMENT OF SPECIAL INSPECTIONS WILL BE PREPARED BY A REGISTERED DESIGN PROFESSIONAL AND SUBMITTED WITH THE BUILDING PERMIT APPLICATION.
 - SPECIAL INSPECTIONS WILL BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE (IBC).
 - IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE, THE OWNER WILL PROVIDE A SPECIAL INSPECTOR (AN APPROVED AGENCY OR AGENCIES, INDEPENDENT FROM THE CONTRACTOR AND EMPLOYING QUALIFIED PERSONNEL) TO PERFORM SPECIAL INSPECTIONS IDENTIFIED IN THE STATEMENT OF SPECIAL INSPECTIONS. THE SPECIAL INSPECTOR WILL FURNISH INSPECTION REPORTS TO THE ENGINEER AND BUILDING OFFICIAL.
 - SPECIAL INSPECTIONS SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR QUALITY CONTROL OF THE WORK OR FOR CONFORMANCE TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. DETECTION, OR FAILURE TO DETECT, DEFECTS IN THE WORK SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO CORRECT ALL DEFECTS IN THE WORK, WHETHER DETECTED OR NOT, AND OF RESPONSIBILITY FOR CONFORMANCE TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
 - REMOVE AND REPLACE, OR REPAIR, DEFECTS IN THE WORK AND WORK NOT IN CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL BEAR THE COSTS FOR THE INSPECTION OF ANY REPLACED OR REPAIRED PORTIONS OF THE WORK.
 - CONTRACTOR SHALL COOPERATE WITH SPECIAL INSPECTIONS BY PROVIDING SUFFICIENT NOTICE FOR THE SCHEDULING OF PERSONNEL AND BY ALLOWING FREE AND SAFE ACCESS TO THE WORK FOR OBSERVATION, VERIFICATION, SAMPLING AND INSPECTION. PROVIDE AND PERMIT THE USE OF LADDERS, SCAFFOLDING, INCIDENTAL EQUIPMENT, AND SAFETY EQUIPMENT AS MAY BE REQUIRED TO CONDUCT SPECIAL INSPECTIONS. ALL SUCH PROVISIONS FOR FREE AND SAFE ACCESS AND EQUIPMENT SHALL BE SAFE, IN GOOD WORKING CONDITION, AND ERECTED, MAINTAINED, AND HANDLED BY QUALIFIED PERSONNEL.
 - SPECIAL INSPECTIONS DO NOT APPLY TO CONTRACTOR'S EQUIPMENT, TEMPORARY STRUCTURES USED FOR CONSTRUCTION, MEANS AND METHODS OF CONSTRUCTION, OR SITE SAFETY. CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ADEQUACY AND SAFETY OF EQUIPMENT, TEMPORARY STRUCTURES USED FOR CONSTRUCTION, MEANS AND METHODS OF CONSTRUCTION AND SITE SAFETY.

TABLE 1 – REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION (IBC, TABLE 1705.3)

VERIFICATION AND INSPECTION	IBC REFERENCE	INSPECTION FREQUENCY		REFERENCE STANDARD
		CONTINUOUS	PERIODIC	
INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT	1705.3 1910.4		X	ACI 318: SECTION 3.5 AND SECTIONS 7.1–7.7
INSPECTION OF WELDING FOR REINFORCING STEEL IN ACCORDANCE WITH IBC, TABLE 1705.2.2 ITEM 2B (WHEN WELDING IS SPECIFIED OR APPROVED IN WRITING)	1705.3			SEE TABLE 3
INSPECTION OF BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE	1705.3 1908.5 1909.1	X		ACI 318: SECTIONS 8.1.3, 21.2.8
VERIFICATION AND INSPECTION OF MECHANICAL REINFORCING STEEL COUPLING SYSTEM (WHEN SPECIFIED OR APPROVED IN WRITING). PRODUCT NAME AND MODEL NUMBER/TYPE, REINFORCING STEEL GRADE AND BAR DIAMETER(S) TO BE SPLICED. THREADED SYSTEMS: END PLUGS INSTALLED OVER INTERNALLY THREADED ENDS, INTERNAL AND EXTERNAL THREAD CONDITION AND CLEANLINESS, PROPER LENGTH OF INSERTION, AND TIGHTENED TO MANUFACTURER'S RECOMMENDED TORQUE. SET SCREW TYPE SYSTEMS: PROPER LENGTH OF INSERTION, SET SCREWS TIGHTENED TO MANUFACTURER'S RECOMMENDED TORQUE. OTHER TYPES OF MECHANICAL REINFORCING STEEL COUPLING SYSTEMS OR SUBSTITUTIONS: VERIFICATION AND INSPECTION REQUIREMENTS WILL BE ESTABLISHED BY THE ENGINEER.		X		PER ICC TEST REPORT FOR COUPLING SYSTEM
VERIFYING USE OF REQUIRED DESIGN MIX	1705.3 1904.2 1910.2 1910.3		X	ACI 318: CHAPTER 4, SECTIONS 5.2–5.4
AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	1705.3 1910.10	X		ACI 318: SECTIONS 5.6, 5.8 ASTM C172 ASTM C31
INSPECTION OF CONCRETE PLACEMENT	1705.3 1910.6 1910.7 1910.8	X		ACI 318: SECTIONS 5.9, 5.10
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	1705.3 1910.9		X	ACI 318: SECTIONS 5.11–5.13
INSPECTION OF PRESTRESSED CONCRETE: a. APPLICATION OF PRESTRESSING FORCES b. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE-RESISTING SYSTEM	1705.3	X		ACI 318: SECTION 18.20
		X		ACI 318: SECTION 18.18.4
ERECTION OF PRECAST CONCRETE MEMBERS	1705.3		X	ACI 318: CHAPTER 16
VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POSTTENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	1705.3		X	ACI 318: SECTION 6.2
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	1705.3		X	ACI 318: SECTION 6.1.1
REQUIRED VERIFICATION AND INSPECTION OF POST INSTALLED CONCRETE ANCHORS				
INSPECTION OF MECHANICAL ANCHORS INSTALLED IN HARDENED CONCRETE (EXPANSION ANCHORS AND UNDERCUT ANCHORS)	1705.3 1909.1		X	ACI 318: SECTIONS 3.8.6, 8.1.3, AND 21.1.8
VERIFICATION AND INSPECTION OF ADHESIVE ANCHORS AND DOWELS INSTALLED IN HARDENED CONCRETE. ANCHOR PRODUCT NAME, TYPE, DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, HOLE PREPARATION AND SURFACE ROUGHNESS, CLEANLINESS OF THE HOLE AND ANCHOR, ADHESIVE EXPIRATION DATE, ANCHOR/ADHESIVE INSTALLATION, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE	1703.4.2	X		ACI 318: SECTIONS 3.8.7, 8.1.3, AND 21.1.8 PER ICC TEST REPORT FOR SPECIFIC ANCHOR.

TABLE 2 – REQUIRED VERIFICATION AND INSPECTION OF SOILS (IBC, TABLE 1705.6)

VERIFICATION AND INSPECTION	IBC REFERENCE	INSPECTION FREQUENCY		REFERENCE STANDARD	REMARKS
		CONTINUOUS	PERIODIC		
VERIFY MATERIALS BELOW ALL FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	1705.6		X	CONTRACT DOCUMENTS AND GEOTECHNICAL REPORT	REFER TO THE FOLLOWING TABLES FOR ADDITIONAL RELATED SPECIAL INSPECTIONS
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	1705.6		X		
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	1705.6		X		
VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	1705.6	X			
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	1705.6		X		

TABLE 3 – REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION (AISC 360, PER IBC 1705.2)

VERIFICATION AND INSPECTION	IBC REFERENCE	INSPECTION FREQUENCY		REFERENCE STANDARD	
		CONTINUOUS	PERIODIC		
MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED	1705.2		X	AISC 360, SECTION A3.3 AND APPLICABLE ASTM MATERIAL STANDARDS	
INSPECTION OF HIGH-STRENGTH BOLTING: a. SNUG-TIGHT JOINTS b. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION c. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION	1705.2 1704.3.3		X	AISC 360, SECTION M2.5	
MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK: a. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360 b. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS c. MANUFACTURER'S CERTIFIED MILL TEST REPORTS	1705.2		X	AISC 360, SECTION M5.5 APPLICABLE ASTM MATERIAL STANDARDS	
MATERIAL VERIFICATION OF WELD FILLER MATERIALS: a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED	1705.2		X	AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENTS	
INSPECTION OF WELDING: a. STRUCTURAL STEEL AND COLD-FORMED STEEL DECK 1) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS 2) MULTIPASS FILLET WELDS 3) SINGLE-PASS FILLET WELDS >5/16" 4) PLUG AND SLOT WELDS 5) SINGLE-PASS FILLET WELDS < OR = 5/16" 6) FLOOR AND ROOF DECK WELDS b. REINFORCING STEEL (WHEN WELDING IS SPECIFIED OR APPROVED IN WRITING) 1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706 2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL REINFORCED CONCRETE SHEAR WALLS AND SHEAR REINFORCEMENT 3) SHEAR REINFORCEMENT 4) OTHER REINFORCING STEEL	1705.2 1704.3.1	X		AWS D1.1	
		X			AWS D1.3
		X			
		X		AWS D1.4 AND ACI 318: SECTION 3.5.2	
		X			
		X			
INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE: a. DETAILS SUCH AS BRACING AND STIFFENING b. MEMBER LOCATIONS c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION	1705.2 1704.3.2		X		



**DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
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DATE: NOVEMBER 2019

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SHEET TITLE: STRUCTURAL

**SPECIAL INSPECTIONS
TABLES AND NOTES**

SHEET: SD-5

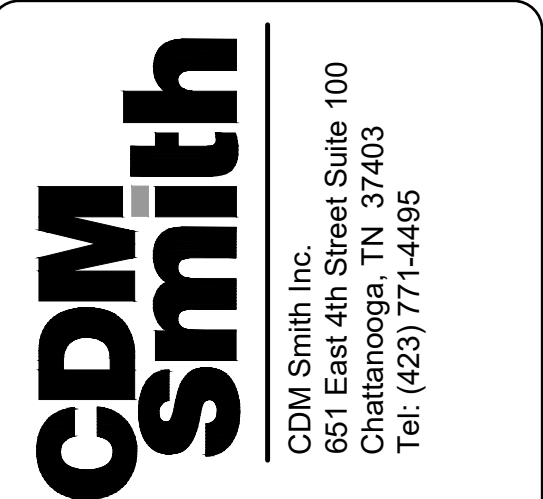
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TABLE 4 – LEVEL B REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION (ACI 530.1, TABLE 4, PER IBC 1705.4)				
VERIFICATION AND INSPECTION	IBC REFERENCE	INSPECTION FREQUENCY		REFERENCE STANDARD
		CONTINUOUS	PERIODIC	
VERIFY COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS	1705.4		X	ACI 530.1 ARTICLE 1.5
VERIFICATION OF f'_m AND f'_{oc} PRIOR TO CONSTRUCTION EXCEPT WHERE SPECIFICALLY EXEMPTED BY CODE	1705.4		X	ACI 530.1 ARTICLE 1.4B
VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SITE FOR SELF-CONSOLIDATING GROUT	1705.4	X		ACI 530.1 ARTICLE 1.5B.1.b.3
AS MASONRY CONSTRUCTION BEGINS, VERIFY THE FOLLOWING TO ENSURE COMPLIANCE:	1705.4			
a. PROPORTIONS OF SITE-PREPARED MORTAR			X	ACI 530.1 ARTICLE 2.6A
b. CONSTRUCTION OF MORTAR JOINTS			X	ACI 530.1 ARTICLE 3.3B
c. LOCATION OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGES			X	ACI 530.1 ARTICLES 3.4, 3.6A
d. PRESTRESSING TECHNIQUE			X	ACI 530.1 ARTICLE 3.6B
e. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		X	X	ACI 530.1 ARTICLES 2.4B, 2.4H
DURING CONSTRUCTION, VERIFY:	1705.4			
a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS			X	ACI 530.1 ARTICLE 3.3F
b. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION			X	ACI 530 SECTIONS 1.2.2(e), 1.16.1
c. SPECIFIED SIZE, GRADE AND TYPE OF REINFORCEMENT, ANCHOR BOLTS, PRESTRESSING TENDONS AND ANCHORAGES			X	ACI 530 SECTIONS 1.16.1.17 ACI 530.1 ARTICLES 2.4, 3.4
d. WELDING OF REINFORCING BARS (WHEN WELDING IS SPECIFIED OR APPROVED IN WRITING)			X	ACI 530 SECTIONS 2.1.7.7.2, 3.3.3.4(c)
e. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F)		1705.4 2104.3 2104.4		X
f. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	1705.4	X		ACI 530.1 ARTICLE 3.6B
PRIOR TO GROUTING, VERIFY THE FOLLOWING TO ENSURE COMPLIANCE:	1705.4			
a. GROUT SPACE IS CLEAN PRIOR TO GROUTING			X	ACI 530.1 ARTICLE 3.2D
b. PLACEMENT OF REINFORCEMENT AND CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES			X	ACI 530 SECTION 1.16, ACI 530.1 ARTICLES 3.4, 3.6A
c. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS			X	ACI 530.1 ARTICLE 2.6B
d. CONSTRUCTION OF MORTAR JOINTS		X	ACI 530.1 ARTICLE 3.3B	
VERIFY GROUT PLACEMENT TO ENSURE COMPLIANCE	1705.4	X		ACI 530.1 ARTICLE 3.5
VERIFY GROUTING OF PRESTRESSING BONDED TENDONS TO ENSURE COMPLIANCE	1705.4	X		ACI 530.1 ARTICLE 3.6C
OBSERVE PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS	1705.4 2105.2.2 2105.3		X	ACI 530.1 ARTICLE 1.4B

TABLE 5 – REQUIRED SPECIAL INSPECTIONS AND TESTS OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS (IBC, TABLE 1705.8)					
VERIFICATION AND INSPECTION	IBC REFERENCE	INSPECTION FREQUENCY		REFERENCE STANDARD	REMARKS
		CONTINUOUS	PERIODIC		
INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	1705.8	X		CONTRACT DOCUMENTS AND GEOTECHNICAL REPORT	REFER TO THE FOLLOWING TABLES FOR ADDITIONAL RELATED SPECIAL INSPECTIONS
VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE), AND ADEQUATE END BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES PLACED		X			
FOR CONCRETE ELEMENTS PERFORM TESTS ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3 (TABLE 4)					

TABLE 6 – REQUIRED SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE (IBC, SECTION 1705.11)				
SYSTEM OR MATERIAL	IBC REFERENCE	INSPECTION FREQUENCY		REFERENCE STANDARD
		CONTINUOUS	PERIODIC	
DESIGNATED SEISMIC SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F. VERIFY THAT THE LABEL, ANCHORAGE OR MOUNTING CONFORMS TO THE CERTIFICATE OF COMPLIANCE	1705.11 1705.11.4 1705.12.3		X	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REPORTS
STRUCTURAL STEEL IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F	1705.11.1			QUALITY ASSURANCE PLAN REQUIREMENTS OF AISC 341
STRUCTURAL WOOD IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F	1705.11.2			SPECIAL INSPECTION NOT REQUIRED WHEN FASTENER SPACING > 4" OC
a. FIELD GLUING OPERATIONS OF ELEMENTS OF THE SEISMIC FORCE RESISTING SYSTEM		X		
b. NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF COMPONENTS WITHIN THE SEISMIC FORCE RESISTING SYSTEM.	1705.11.2		X	
COLD-FORMED STEEL IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F	1705.11.3			SPECIAL INSPECTION NOT REQUIRED WHEN SHEATHING IS GYPSUM BOARD; FIBER BOARD; OR WHEN SHEATHING IS WOOD STRUCTURAL PANEL OR STEEL SHEETS ON ONE SIDE ONLY AND FASTENER SPACING > 4" OC
a. WELDING OF ELEMENTS OF THE SEISMIC FORCE RESISTING SYSTEM		X		
b. SCREW ATTACHMENT, BOLTING, ANCHORING AND OTHER FASTENING OF COMPONENTS WITHIN THE SEISMIC FORCE RESISTING SYSTEM		X		
DURING ANCHORAGE OF STORAGE RACKS 8 FEET OR GREATER IN HEIGHT AND ACCESS FLOORS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY D, E OR F	1705.11.7		X	
ARCHITECTURAL COMPONENTS DURING ERECTION AND FASTENING OF ARCHITECTURAL COMPONENTS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY D, E OR F	1705.11.5			
a. EXTERIOR CLADDING GREATER THAN 30 FEET IN HEIGHT ABOVE GRADE OR WALKING SURFACE AND WEIGHING MORE THAN 5 PSF	1705.11.5 1705.11.5(1) 1705.11.5(2)		X	
b. INTERIOR NON BEARING WALLS GREATER THAN 30 FEET IN HEIGHT ABOVE GRADE OR WALKING SURFACE AND WEIGHING MORE THAN 15 PSF	1705.11.5 1705.11.5(1) 1705.11.5(3)		X	
c. EXTERIOR NON BEARING WALLS GREATER THAN 30 FEET IN HEIGHT ABOVE GRADE OR WALKING SURFACE	1705.11.5 1705.11.5(1)		X	
d. INTERIOR AND EXTERIOR VENEER GREATER THAN 30 FEET IN HEIGHT ABOVE GRADE OR WALKING SURFACE AND WEIGHING MORE THAN 5 PSF	1705.11.5 1705.11.5(1) 1705.11.5(2)		X	
e. EXTERIOR WALL PANELS AND THEIR ANCHORAGE	1705.11.5		X	
f. SUSPENDED CEILING SYSTEMS AND THEIR ANCHORAGE	1705.11.5		X	
g. ANCHORAGE OF ACCESS FLOORS	1705.11.5		X	
MECHANICAL AND ELECTRICAL COMPONENTS	1705.11.6			
a. DURING ANCHORAGE OF ELECTRICAL EQUIPMENT FOR EMERGENCY OR STANDBY POWER SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F;	1705.11.6 1705.11.6(1)		X	
b. DURING ANCHORAGE OF OTHER ELECTRICAL EQUIPMENT IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY E OR F;	1705.11.6 1705.11.6(2)		X	
c. DURING INSTALLATION AND ANCHORAGE OF PIPING SYSTEMS INTENDED TO CARRY HAZARDOUS MATERIALS AND THEIR ASSOCIATED MECHANICAL UNITS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D E OR F;	1705.11.6 1705.11.6(3)		X	
d. DURING THE INSTALLATION OF HVAC DUCTWORK THAT WILL CONTAIN HAZARDOUS MATERIALS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F AND ANCHORAGE OF SUCH DUCTWORK	1705.11.6 1705.11.6(4) 1705.3.3.1		X	
e. DURING THE INSTALLATION AND ANCHORAGE OF VIBRATION ISOLATION SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F WHERE THE CONSTRUCTION DOCUMENTS REQUIRE A NOMINAL CLEARANCE OF ¼ INCH (6.4MM) OR LESS BETWEEN THE EQUIPMENT SUPPORT FRAME AND RESTRAINT	1705.11.6 1705.11.6(5)		X	
SEISMIC ISOLATION SYSTEM	1705.11.8			
a. DURING THE FABRICATION AND INSTALLATION OF ISOLATOR UNITS AND ENERGY DISSIPATION DEVICES THAT ARE PART OF THE SEISMIC ISOLATION SYSTEM		X		

TABLE 7 – REQUIRED STRUCTURAL TESTING FOR SEISMIC RESISTANCE (IBC, SECTION 1705.12)				
SYSTEM OR MATERIAL	IBC REFERENCE	INSPECTION FREQUENCY		REFERENCE STANDARD
		CONTINUOUS	PERIODIC	
SEISMIC FORCE RESISTING SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY B, C, D, E OR F INCORPORATING CONCRETE REINFORCEMENT ASTM A615	1705.12(1) 1705.12.1			ACI 318 SECTION 21.1.5.2 CERTIFIED MILL TEST REPORTS
a. REINFORCEMENT USED TO RESIST EARTHQUAKE-INDUCED FLEXURAL AND AXIAL FORCES IN SPECIAL MOMENT FRAMES, SPECIAL STRUCTURAL WALLS AND COUPLING BEAMS CONNECTING SPECIAL STRUCTURAL WALLS		X		
b. WHEN WELDING OF REINFORCING BARS IS SPECIFIED OR APPROVED IN WRITING	1705.12(1) 1705.12.1		X	ACI 318 SECTION 3.5.2 CHEMICAL TESTS AND CERTIFIED MILL TEST REPORTS
SEISMIC FORCE RESISTING SYSTEMS STRUCTURAL STEEL	1705.12(1) 1705.12.2			QUALITY ASSURANCE PLAN REQUIREMENTS OF AISC 341
a. SEISMIC-FORCE-RESISTING SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F		X		
SEISMIC FORCE RESISTING SYSTEMS MASONRY	1705.12			MANUFACTURER'S CERTIFICATE OF COMPLIANCE
a. MASONRY UNITS, MORTAR AND GROUT MATERIALS, REINFORCEMENT, ANCHORS, TIES AND METAL ACCESSORIES IN SEISMIC FORCE RESISTING SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F		X		
DESIGNATED SEISMIC SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F SUBJECT TO THE SPECIAL CERTIFICATION REQUIREMENTS OF ASCE 7 SECTION 13.2.2	1705.12(2) 1705.12.3		X	ASCE 7 SECTION 13.2.2 MANUFACTURER'S CERTIFICATE OF COMPLIANCE
ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F AND WHERE THE REQUIREMENTS OF ASCE 7 SECTION 13.2.1 ARE MET BY SUBMITTAL OF MANUFACTURER'S CERTIFICATION, IN ACCORDANCE WITH ITEM 2 THEREIN.	1705.12(3) 1705.12.3		X	ASCE 7 SECTION 13.2.1 MANUFACTURER'S CERTIFICATE OF COMPLIANCE
a. ANCHORAGE OF ELECTRICAL EQUIPMENT FOR EMERGENCY AND STANDBY POWER			X	
b. ANCHORAGE OF RECIPROCATING AND ROTARY-TYPE EQUIPMENT			X	
SEISMIC ISOLATION SYSTEM IN SEISMICALLY ISOLATED STRUCTURES	1705.12(4) 1705.12.4			ASCE 7 SECTION 17.8



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PROJECT NO: 129699-109746

DATE: NOVEMBER 2019

DISC. LEAD: PHK	DESIGNER: PWD	CHECKER: JSB
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SHEET TITLE
STRUCTURAL

SPECIAL INSPECTIONS
TABLES AND NOTES

SHEET SD-6

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SYMBOLS (ABBREVIATIONS)

	UNCLASSIFIED, TYPE AS SHOWN ON THE DRAWINGS ADJACENT TO SYMBOL
	GATE VALVE (GV)
	KNIFE GATE VALVE (KG)
	GLOBE VALVE (GLV)
	BALL VALVE (BV)
	3-WAY BALL VALVE (BV3)
	4-WAY BALL VALVE (BV4)
	RECYCLE CONTROL VALVE (RCV)
	CONE VALVE (CNV)
	NEEDLE VALVE (NV)
	PINCH VALVE (PV)
	DIAPHRAGM VALVE (DV)
	BUTTERFLY VALVE (BFV)
	PLUG VALVE (PV)
	3-WAY PLUG VALVE (PV3)
	4-WAY PLUG VALVE (PV4)
	CHECK VALVE, GENERAL SYMBOL (CKV)
	BALL CHECK VALVE (BCV)
	DOUBLE DOOR CHECK VALVE (DDCV)
	SOLENOID VALVE (SV)
	MOTOR OPERATED VALVE (MOV)
	3-WAY SOLENOID VALVE (SV3)
	4-WAY SOLENOID VALVE (SV4)
	ANGLE VALVE (AV)
	QUICK CONNECT COUPLING (OCC)
	SLUICE GATE (SLG)
	BULKHEAD GATE (BHG)
	SLIDE GATE (SG)
	WEIR SLIDE GATE (WG)
	STOP PLATE GUIDES (SPG)
	FLAP VALVE (FLV)
	SHEAR GATE (SHG)
	MUD VALVE (MV)
	ROTOMETER (RM)

SYMBOLS

	PRESSURE REDUCING REGULATOR (PCV)
	PRESSURE REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP (PCV)
	DIFFERENTIAL PRESSURE REDUCING REGULATOR WITH INTERNAL AND EXTERNAL PRESSURE TAPS (PDCV)
	PRESSURE RELIEF OR SAFETY VALVE, STRAIGHT-THROUGH PATTERN, SPRING OR WEIGHT-LOADED, OR WITH INTEGRAL PILOT (PSV)
	PRESSURE RELIEF OR SAFETY VALVE, GENERAL SYMBOL (PSV)
	VACUUM RELIEF VALVE, GENERAL SYMBOL (VRV)
	COMBINATION AIR VACUUM VALVE (CAV)
	RUPTURE DISK OR SAFETY HEAD FOR PRESSURE RELIEF (PSE)
	RUPTURE DISK OR SAFETY HEAD FOR VACUUM RELIEF (PSE)
	PRESSURE AND VACUUM RELIEF MANHOLE COVER (PSE)
	SLIDE PLATE (SP)
	MANUAL VOLUME DAMPER (VD)
	BACKDRAFT DAMPER (BDD)
	FOOT VALVE
	RUBBER FLAPPER CHECK VALVE (RFCV)

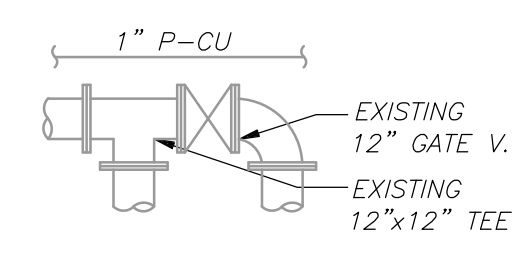
VALVE ACTUATORS

	DIAPHRAGM, SPRING OPPOSED
	DIAPHRAGM, SPRING OPPOSED WITH POSITIONER
	DIAPHRAGM, PRESSURE-BALANCED
	ROTARY MOTOR. (SHOWN TYPICALLY WITH ELECTRIC SIGNAL. MAY BE HYDRAULIC OR PNEUMATIC)
	SOLENOID
	CYLINDER, SINGLE-ACTING, SPRING OPPOSED WITHOUT POSITIONER OR PILOT.
	CYLINDER, DOUBLE ACTING, WITHOUT POSITIONER OR PILOT
	EXAMPLE OF CYLINDER WITH POSITIONER
	ANY CYLINDER THAT IS ASSEMBLED WITH A PILOT SO THAT ASSEMBLY IS ACTUATED BY ONE CONTROLLED INPUT. PILOT MAY BE POSITIONER, SOLENOID VALVE, SIGNAL CONVERTER, etc.
	FLOAT ACTUATOR
	FLOAT ACTUATOR WITH PILOT VALVE

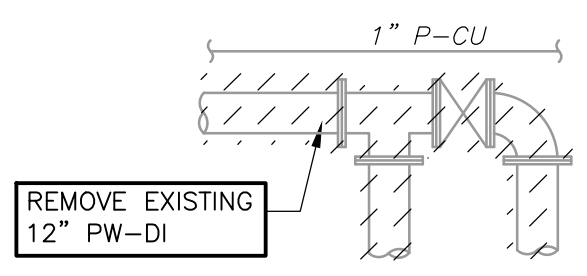
PIPE AND FITTING SYMBOLS

DOUBLE LINE PIPING	SINGLE LINE PIPING	DESCRIPTION
		PROCESS PIPING:
		EXISTING PROCESS PIPING
		FUTURE PROCESS PIPING
		WELDED JOINT
		FLANGED JOINT SIMPLIFIED REPRESENTATION. (SEE NOTE 1)
		FLANGED JOINT (SEE NOTE 1)
		COUPLING FOR GROOVED END JOINTS: (F) FLEXIBLE (R) RIGID
		MECHANICAL JOINT (SEE NOTE 1)
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT (SEE NOTE 1)
		FLANGE x PLAIN END PIPE COUPLING (FLANGE ADAPTOR)
		PIPE COUPLING (SLEEVE-TYPE)
		FLEXIBLE COUPLING OR EXPANSION JOINT (SLEEVE TYPE)
		FLEXIBLE COUPLING OR EXPANSION JOINT (BELLOWS TYPE)
		FLANGE GUARD
		VALVE IN VERTICAL PIPE SHOWN IN PLAN VIEW
		RESTRAINED JOINT PIPE (STAINLESS STEEL)
		HARNES FLANGE ADAPTER COUPLING (HFAC) (DUCTILE IRON)

EXISTING FACILITIES SYMBOLOGY AND ANNOTATION



EXISTING FACILITIES DEMOLITION SYMBOLOGY AND ANNOTATION



PIPE AND FITTING SYMBOLS NOTES:

- GENERIC JOINT SYMBOL IS USED FOR ALL SINGLE LINE PIPING SHOWN ON THE LAYOUT AND SCHEMATIC DRAWINGS PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS AND ARE INDICATED ON THE PROCESS PIPE SCHEDULES
- BOTH, DETAILED AND SIMPLIFIED FLANGE REPRESENTATION SYMBOLS MAY BE SHOWN ON THE DRAWINGS.
- UNLESS MODIFIED BY THE GENERAL PROJECT NOTES OR DETAILED ON THE LAYOUT AND SCHEMATIC DRAWINGS PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS AND ARE INDICATED ON THE PROCESS PIPE SCHEDULES

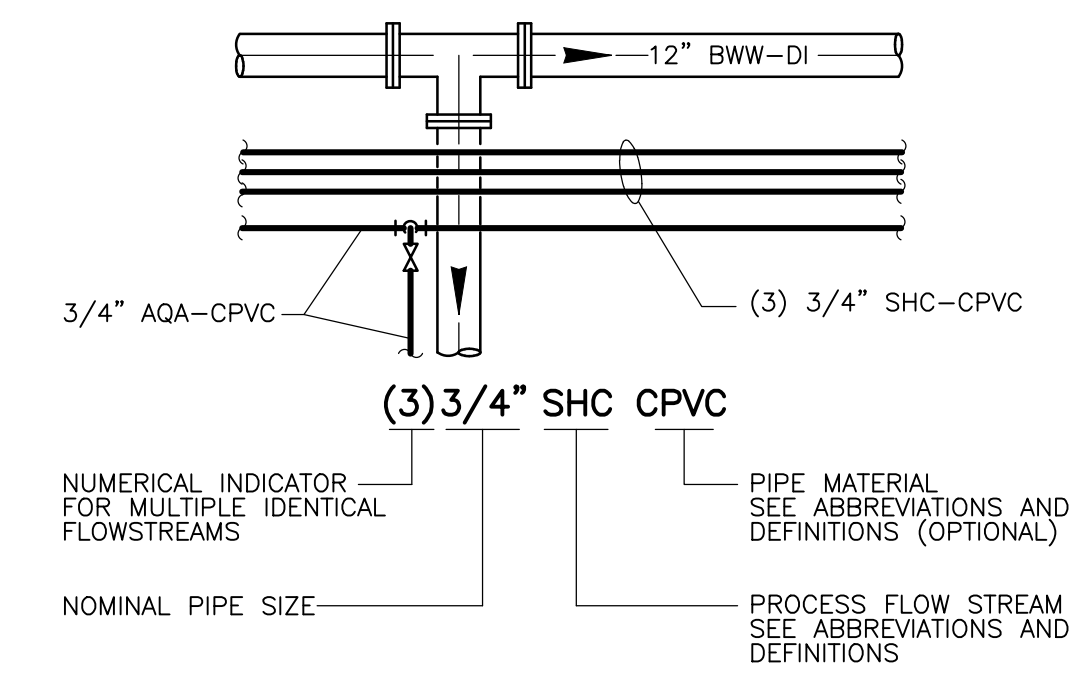
PROCESS PIPE IDENTIFICATION

PROCESS FLOW STREAMS	PIPE MATERIALS
AVV AIR/VACUUM VALVE	CI CAST IRON
ARV AIR RELEASE VALVE	CS CARBON STEEL
CA PLANT AIR (COMPRESSED)	STL STEEL
CAV COMBINATION AIR/VACUUM VALVE	CU COPPER
DR DRAIN	CPVC CHLORINATED POLYVINYL CHLORIDE
DF DIESEL FUEL	DI DUCTILE IRON
EX EXHAUST	DIEL DUCTILE IRON EPOXY LINED
FA FOUL AIR	DIGL DUCTILE IRON GLASS LINED
FM FORCEMAIN	FRP FIBERGLASS REINFORCED PLASTIC
MG MILLION GALLONS	GS GALVANIZED STEEL
MGD MILLION GALLONS PER DAY	HDP HIGH DENSITY POLYETHYLENE
MH MANHOLE	PCPP PRESTRESSED CONCRETE CYLINDER PIPE
NFW NON POTABLE WATER OVERFLOW	PVC POLYVINYL CHLORIDE PRESSURE PIPE
PW POTABLE WATER	POLYP POLYPROPYLENE
REINF REINFORCEMENT	PPSTL POLYPROPYLENE LINED STEEL PIPE
SAN SANITARY SEWER	RC REINFORCED CONCRETE SEWER PIPE
SLD SLUDGE DRAIN	RUB RUBBER
SPL SAMPLE LINE	SST STAINLESS STEEL
SUC SUCTION	BS BLACK STEEL PIPE
SW STORM WATER	
SWD SETTLED WATER DEPTH	
TKD TANK DRAIN	
V VENT	

PIPE JOINTS

FLG	- FLANGE
PE	- PLAIN END
MJ	- MECHANICAL JOINT
REST	- RESTRAINED
RJ	- RESTRAINED JOINT
TRD	- THREADED

PIPE TAG



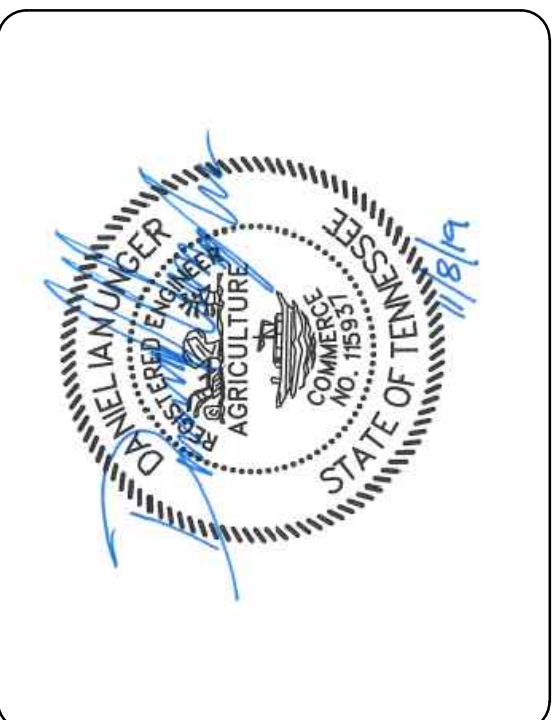
MISCELLANEOUS SYMBOLS

	MONORAIL OR HOIST TRACK ABOVE EQUIPMENT. (PLAN VIEW)
	LIFTING HOOK ABOVE EQUIPMENT. (PLAN VIEW)
	REFERENCE A DETAIL SYMBOL
	REFERENCE WD-1 SHEET NUMBER
	REFERENCE 1 SHEET NUMBER W-12 SECTION SYMBOL

LEGENDS SYMBOLS AND ABBREVIATIONS SHOWN ON SHEET M-1 INDICATE STANDARD SYMBOLS AND ABBREVIATIONS AND ARE PERTINENT TO THE CONDITIONS ON THIS SET OF DRAWINGS TO THE EXTENT APPLICABLE.

ADDITIONAL LEGENDS AND/OR ABBREVIATIONS MAY APPEAR IN THIS SET OF DRAWINGS TO INDICATE SPECIFIC CONDITIONS.

GENERAL NOTE
THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

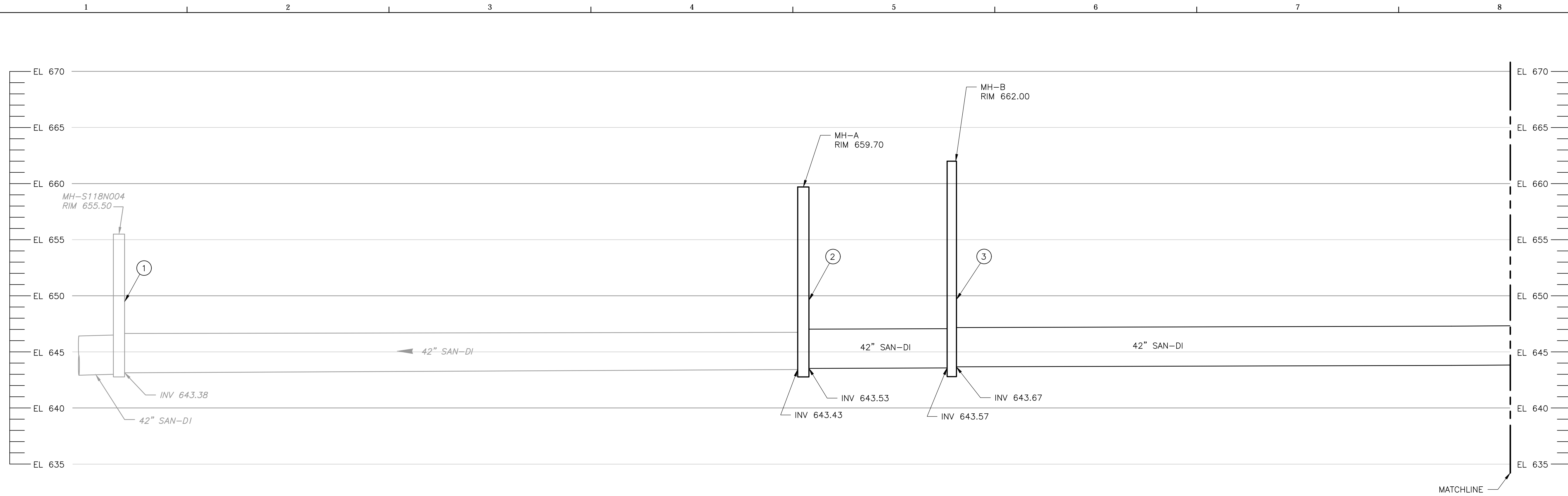


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DU	CB	CF/MT
SHEET TITLE MECHANICAL		
SHEET M-1		

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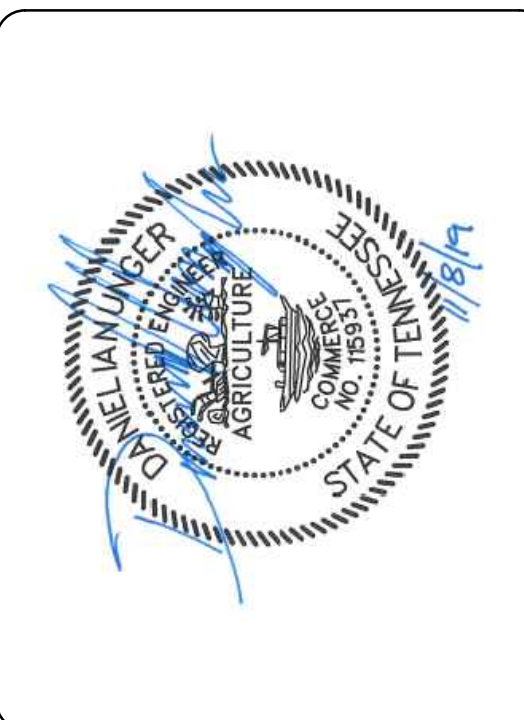
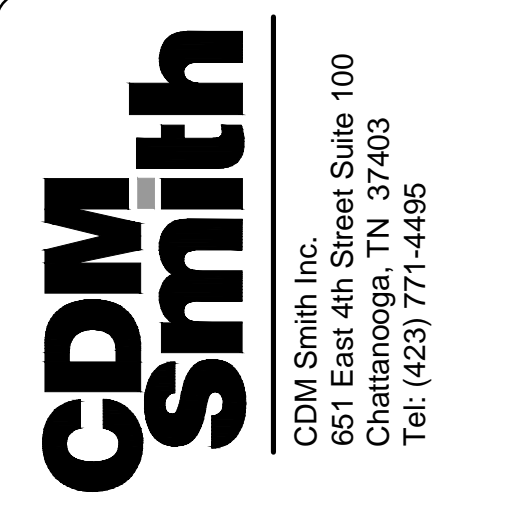
STUART HEIGHTS INTERCEPTOR PROFILE
 HORIZ = 1"=30'-0"
 VERT = 1"=5'-0"



STUART HEIGHTS INTERCEPTOR WATER SURFACE ELEVATIONS						
	1	2	3	4	5	6
STUART HEIGHTS INTERCEPTOR (7.82 MGD)	649.50	649.58	649.64	649.73	649.82	
STUART HEIGHTS INTERCEPTOR (30 MGD IN MH D AND DIVERSION STRUCTURE)	-	-	-		649.82	650.20

STUART HEIGHTS INTERCEPTOR PROFILE
 HORIZ = 1"=30'-0"
 VERT = 1"=5'-0"

- NOTES:
- A STARTING WSE WAS ASSUMED TO BE 649.50 IN EXISTING MANHOLE S118N004.



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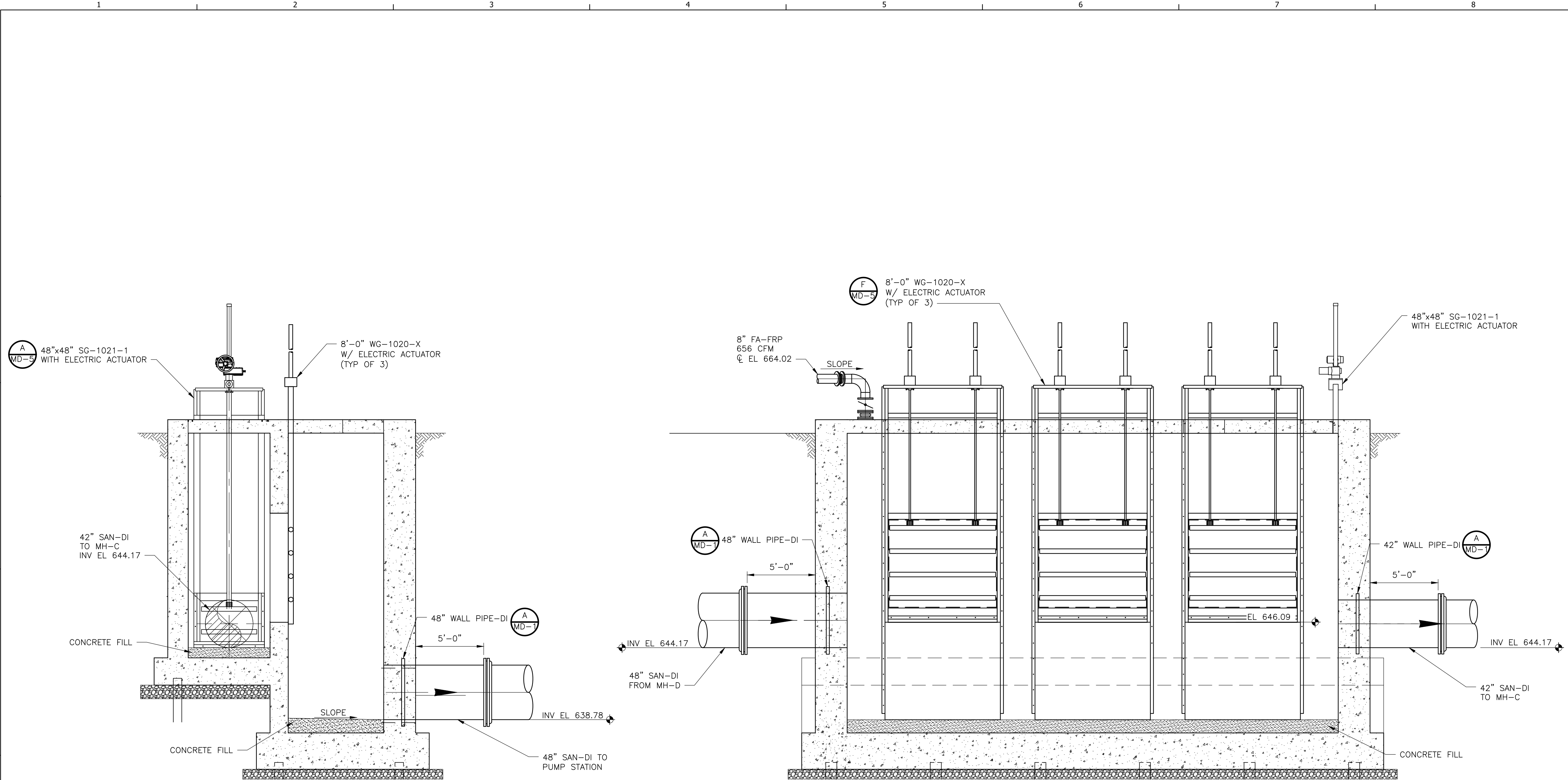
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SHEET TITLE
 MECHANICAL
 HYDRAULIC PROFILE I
 SHEET M-2

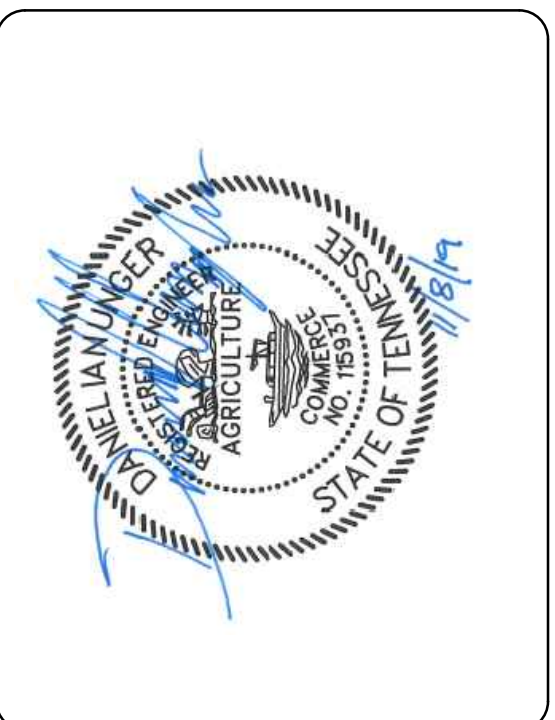
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DIVERSION STRUCTURE
 SECTION 1
 1/4" = 1'-0" M-4

DIVERSION STRUCTURE
 SECTION 2
 1/4" = 1'-0" M-4



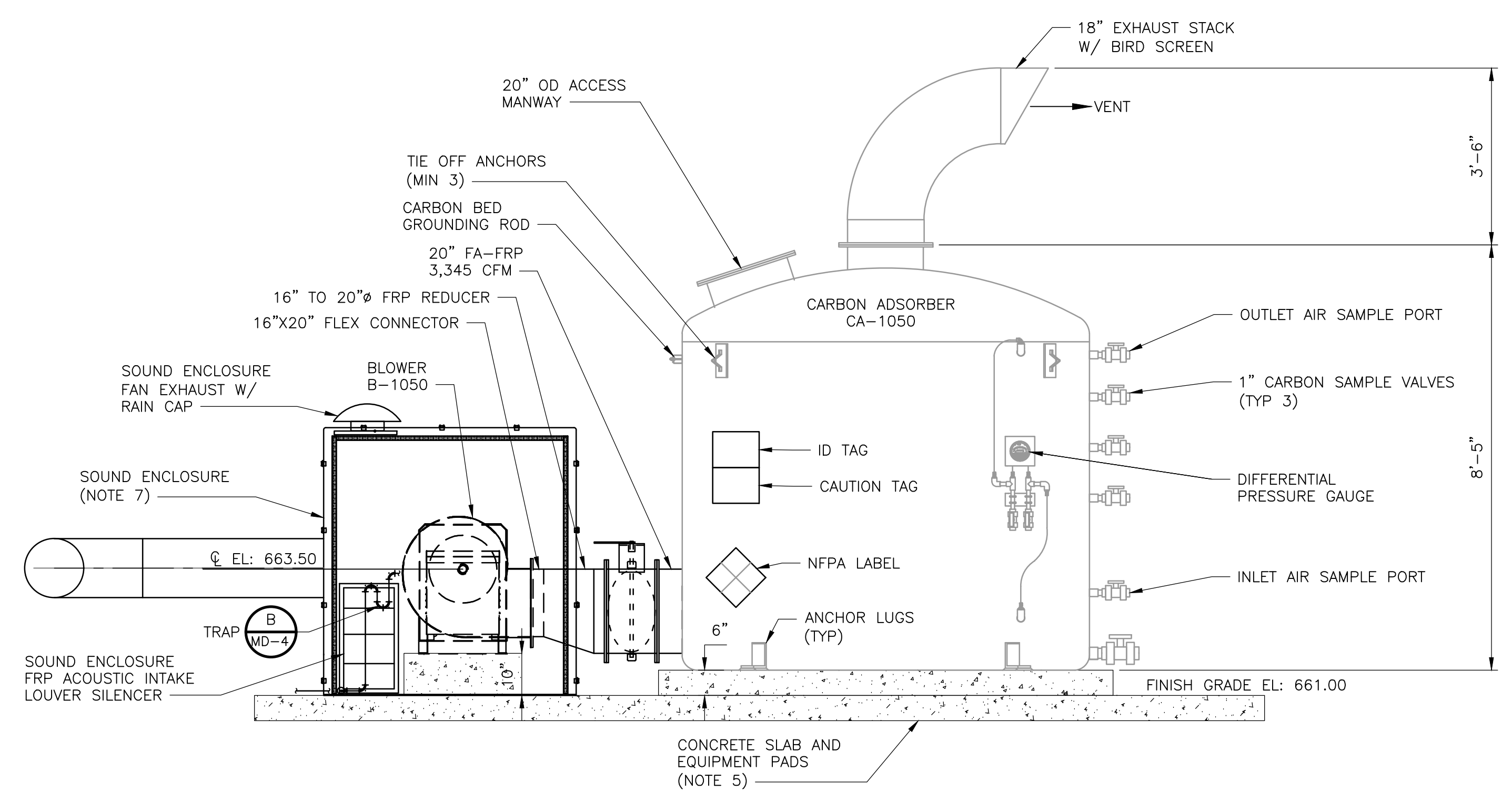
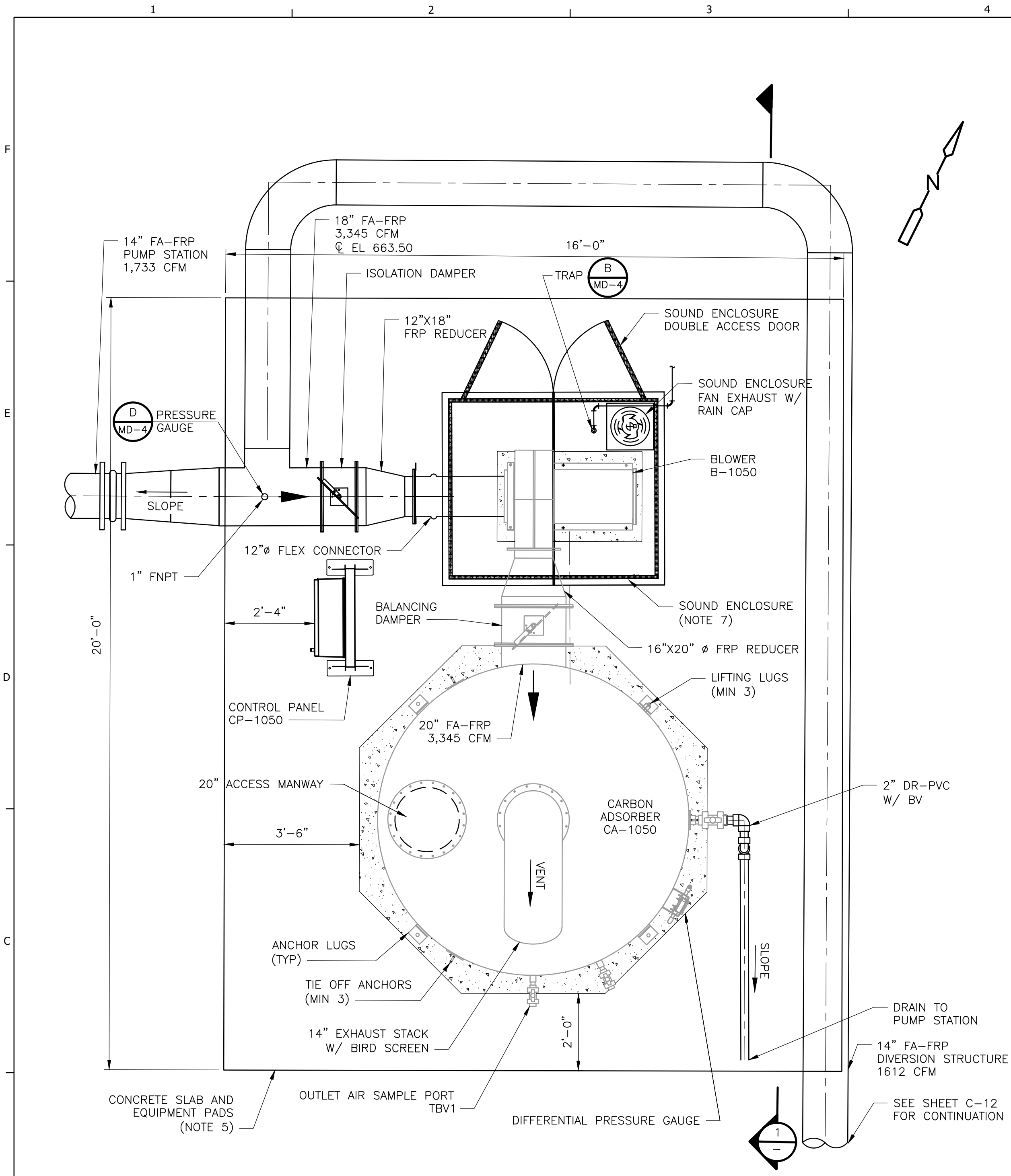
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 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM



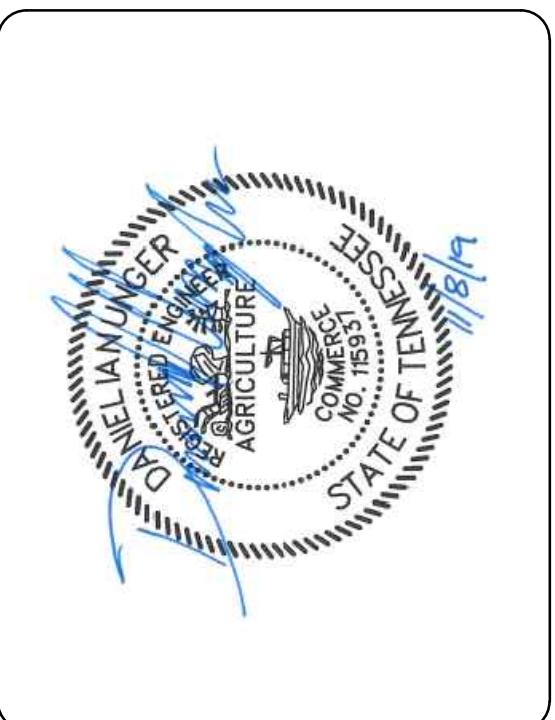
REV	DATE	REVISION DESCRIPTION

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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: DU DESIGNER: CB CHECKER: CF/MT
 SHEET TITLE
 MECHANICAL
 DIVERSION STRUCTURE SECTION
 SHEET M-5


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- NOTES:**
- SEE SHEET C-12 FOR ODOR CONTROL LOCATION AND DUCT WORK LAYOUT.
 - SEE SHEET MD-3 FOR PIPE SUPPORT DETAILS.
 - CONTROL PANEL SHALL BE A MINIMUM OF 3'-0" FROM ANY ODOR CONTROL COMPONENT SUCH AS FAN, DUCT, OR TANK.
 - CONTROL PANEL IS NOT SHOWN IN SECTION 1 FOR CLARITY. CONTRACTOR SHALL SET BOTTOM OF CONTROL PANEL AT 4'-0" ABOVE FINISH GRADE.
 - SEE SHEET S-10 FOR WET-WEATHER STORAGE TANK ODOR CONTROL CONCRETE SLAB AND EQUIPMENT PADS.
 - CARBON ADSORBER SHALL BE EVOQUA, MODEL RJC-800 (BASIS OF DESIGN) OR EQUAL. SEE SECTION 44 31 16.
 - CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION AND INSTALLATION.
 - 14-INCH DUCT SHALL BE SLOPED IN THE DIRECTION SHOWN ON THE DRAWING. 14-INCH DUCT SHALL BE SLOPED AT A MINIMUM OF 1% WITH MAX SLOPE OF 2%.
 - ALL PRESSURE SENSOR TUBING SHALL BE 316SS.



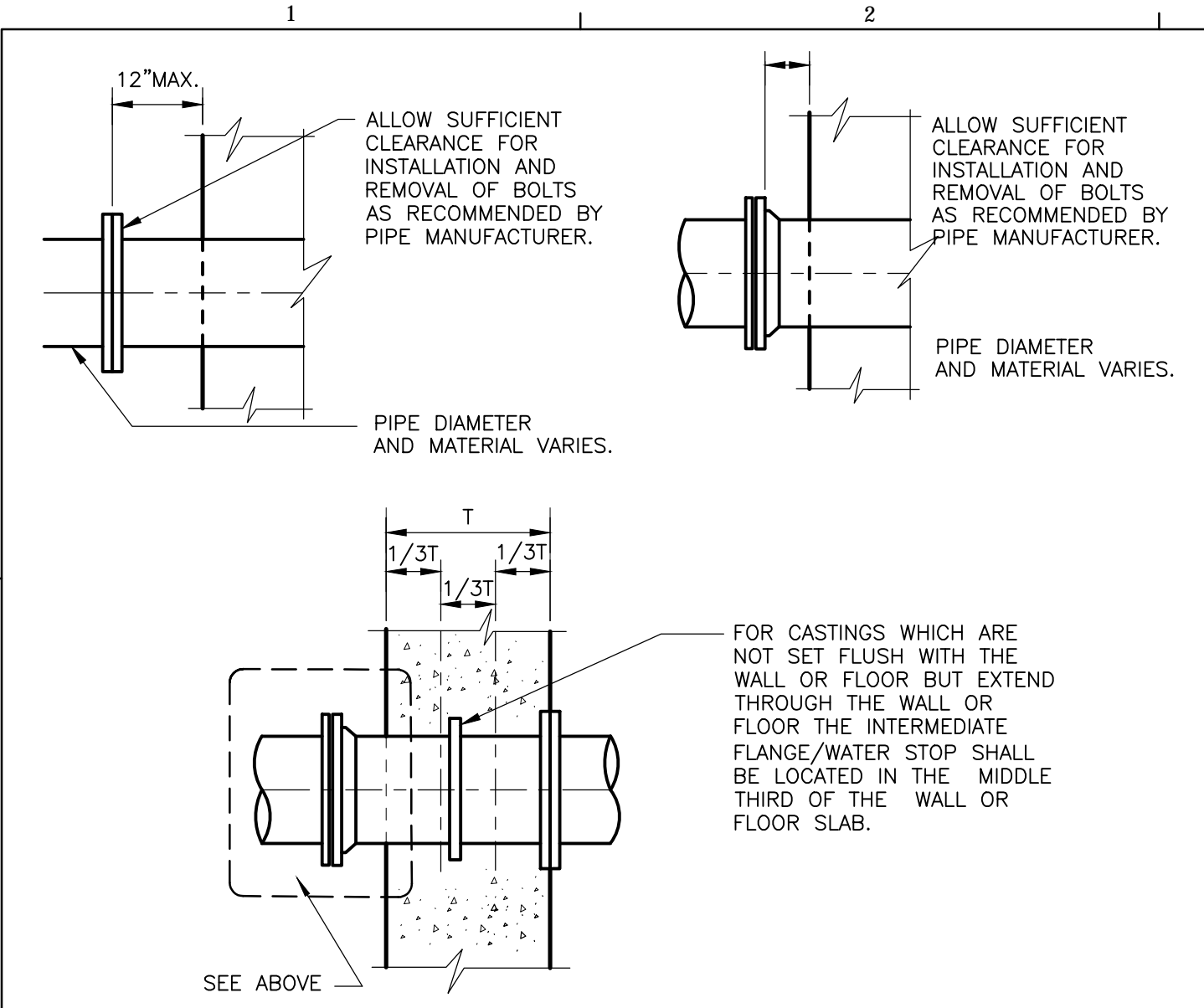
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 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM



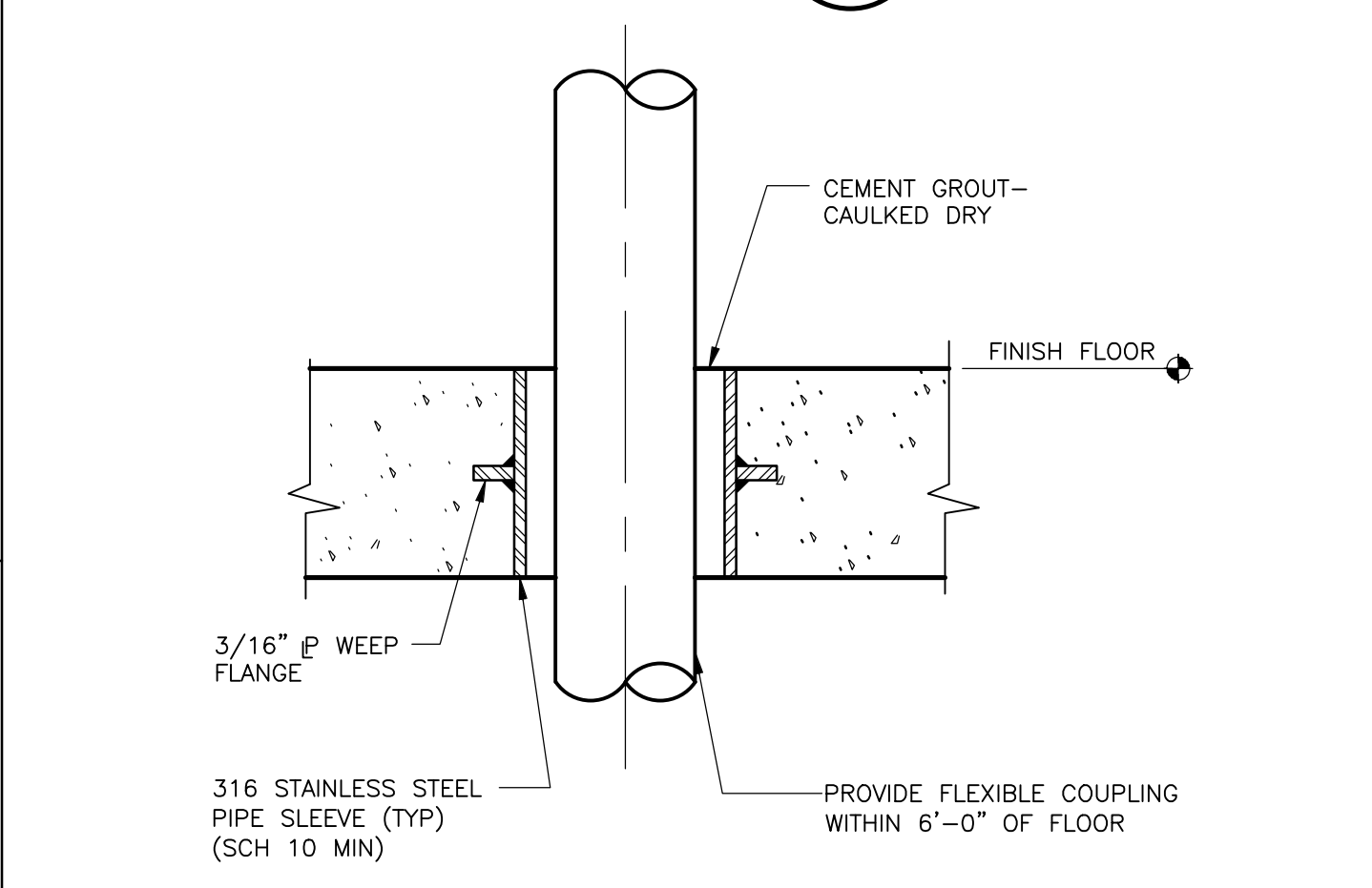
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DISC. LEAD: DU	DESIGNER: DU	CHECKER: CF/MT
SHEET TITLE MECHANICAL		
ODOR CONTROL PLAN AND SECTION		
SHEET	M-8	

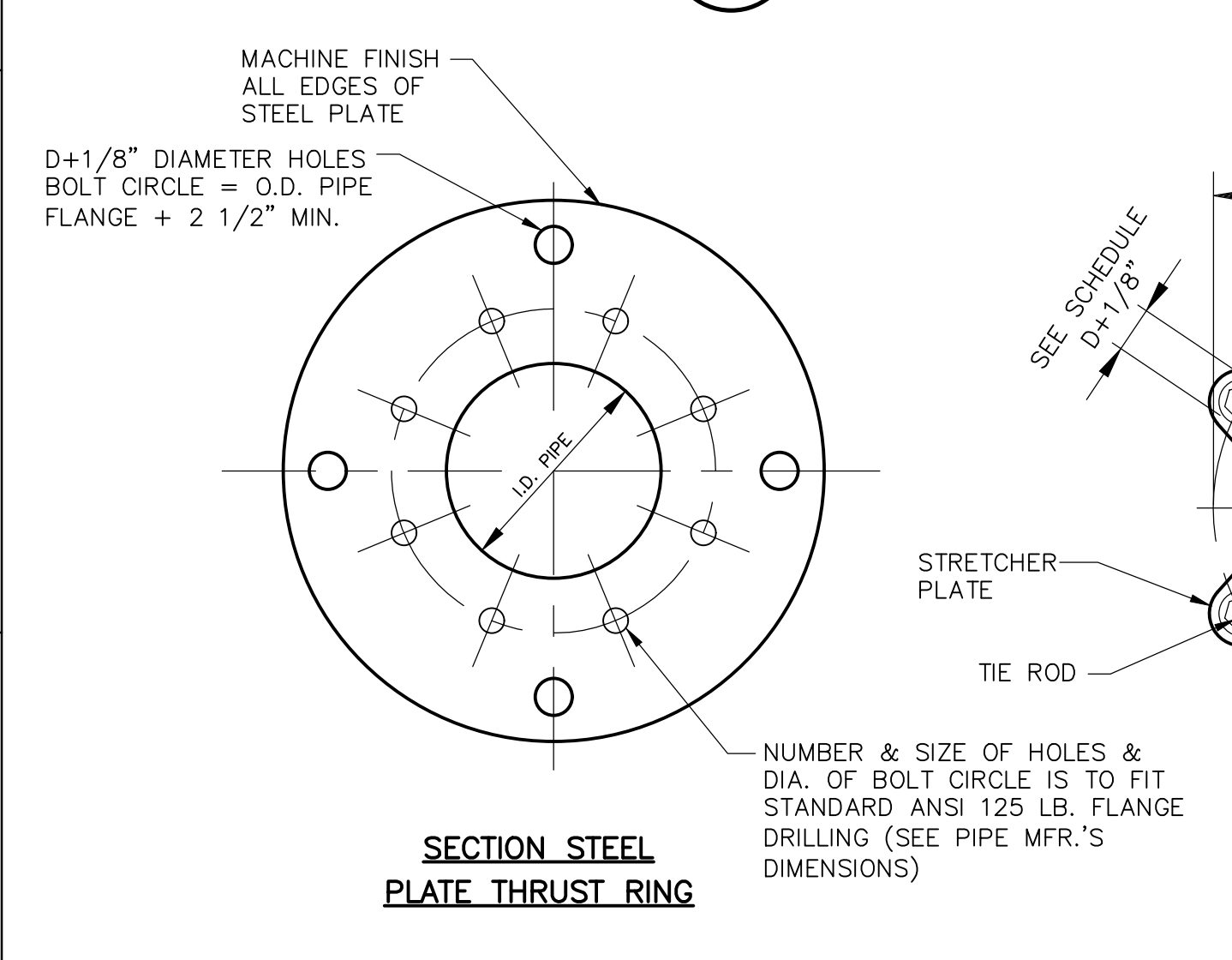
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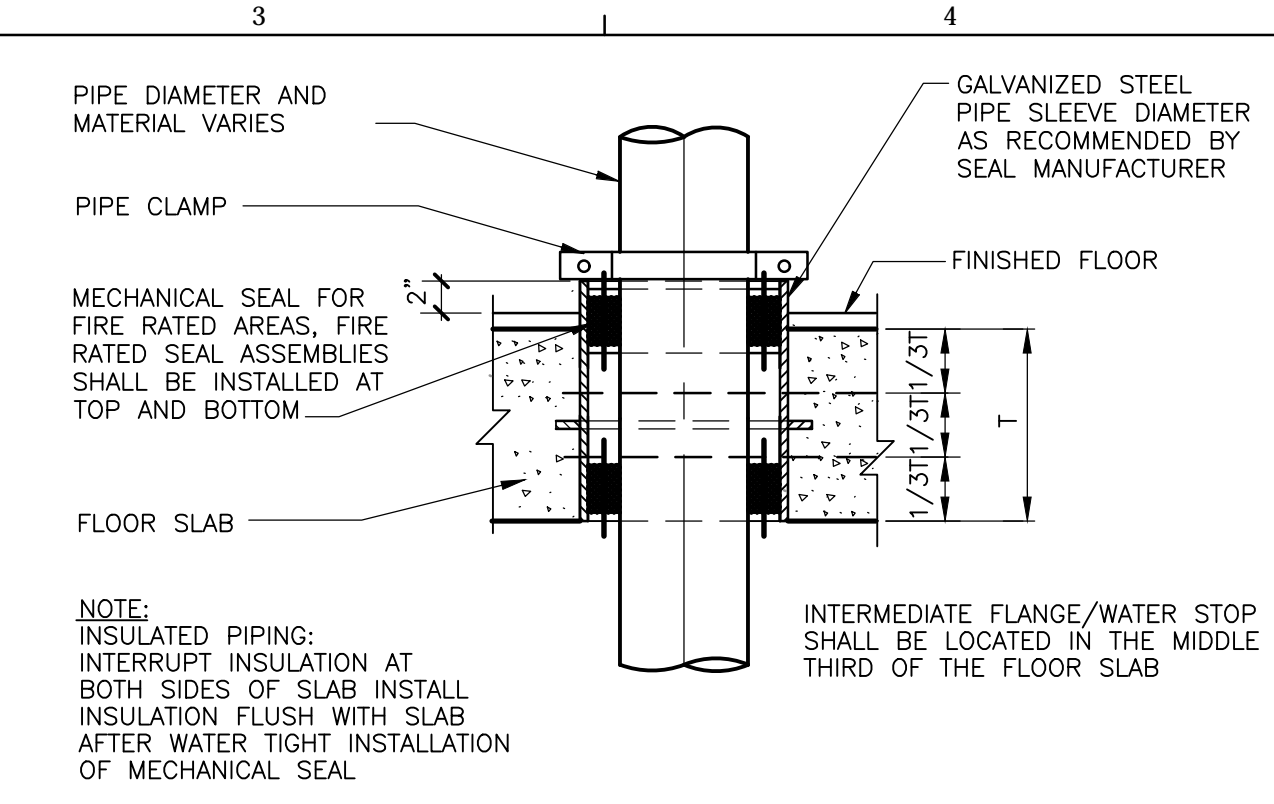
CASTING WITH NON-FLUSH JOINTS
DETAIL A
 NTS



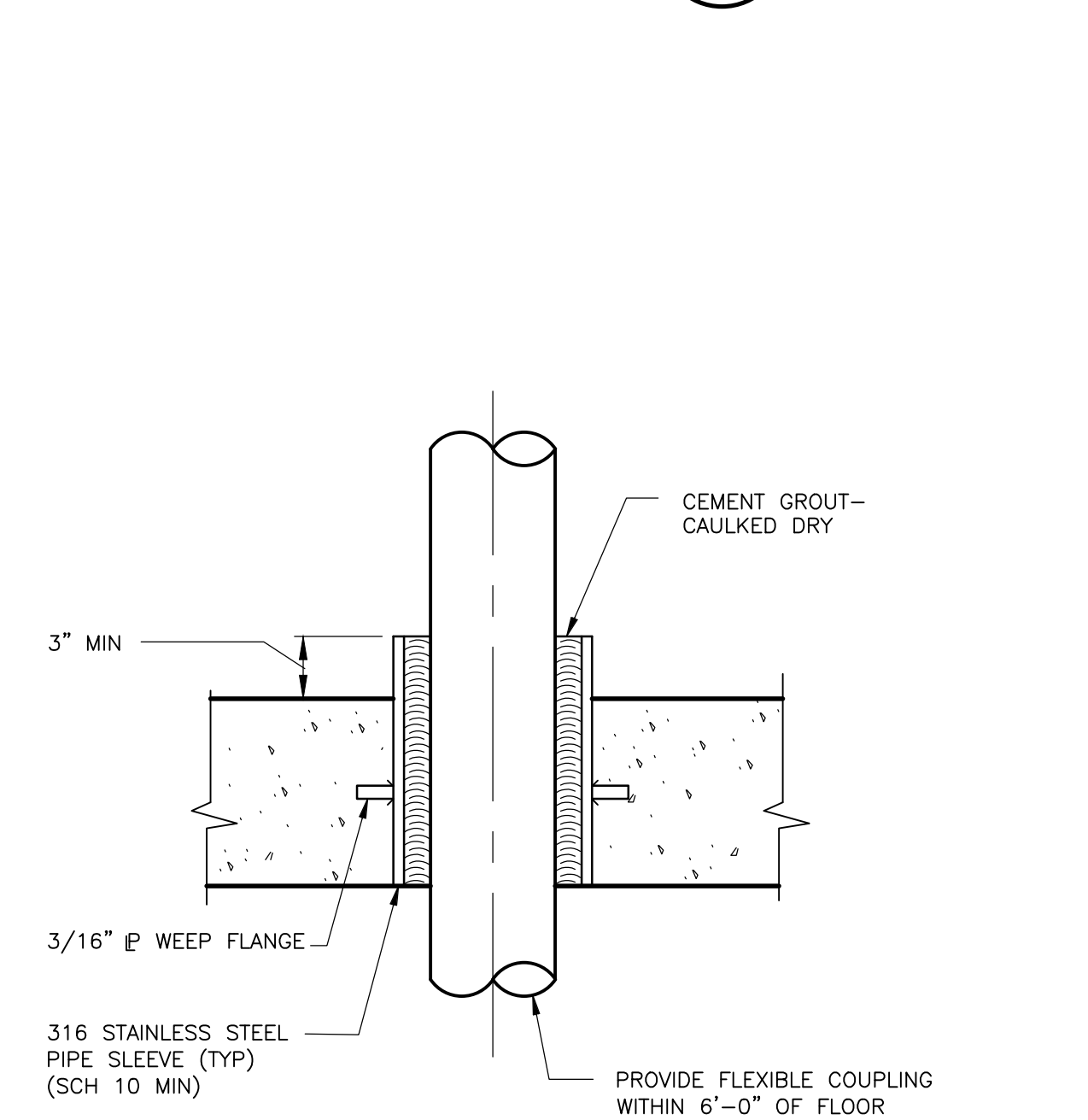
PIPE SLEEVE W/GROUT INTERMEDIATE FLOOR PENETRATION
DETAIL E
 NTS



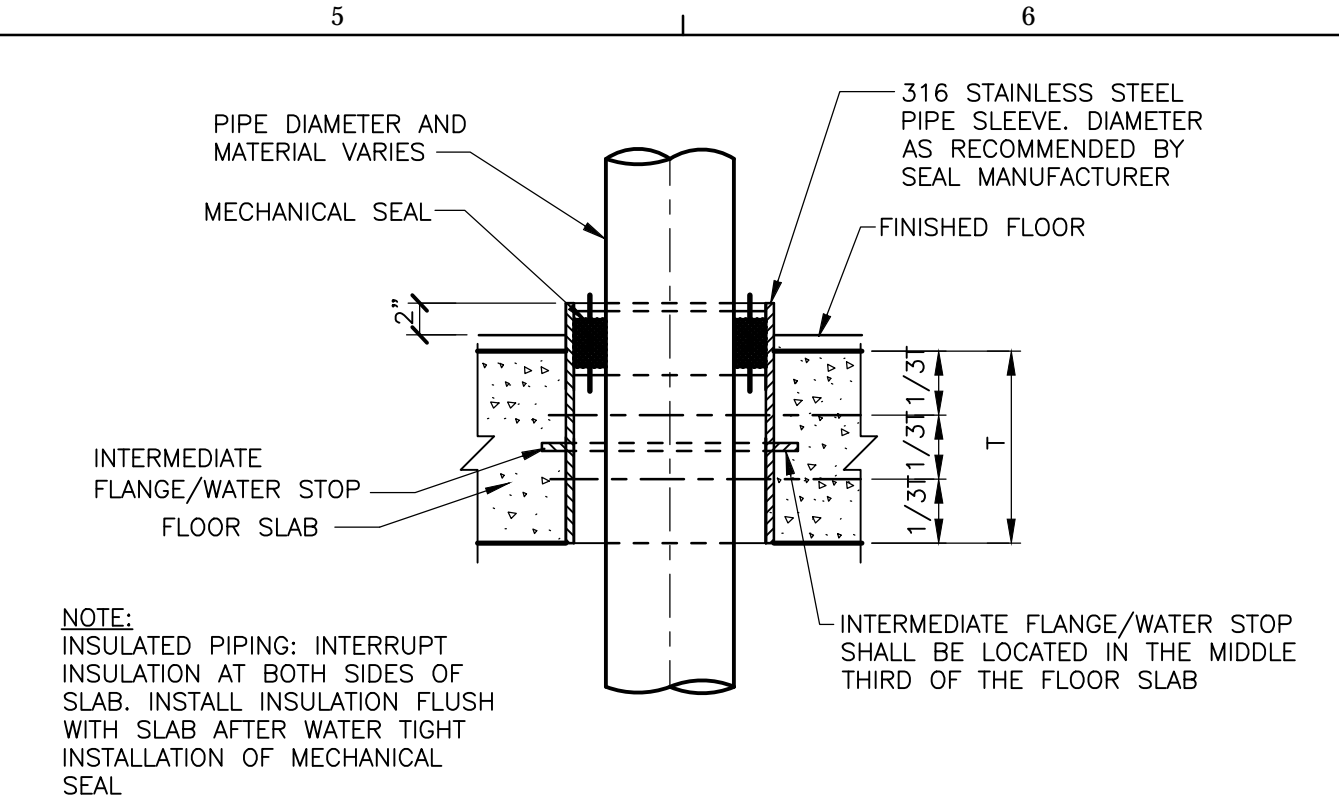
HARNESSED FLANGE ADAPTER COUPLING (HFAC)
DETAIL H
 NTS



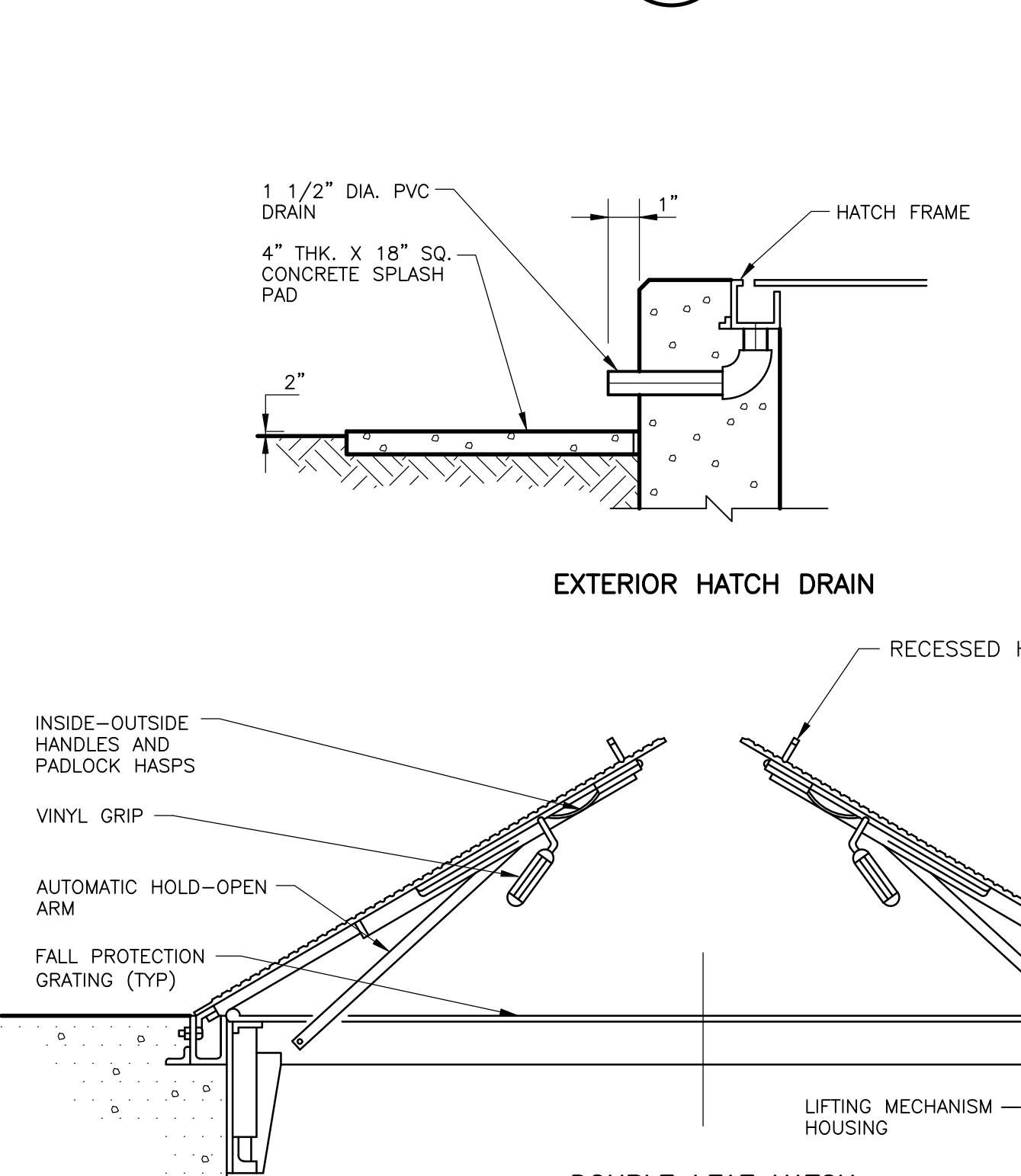
FLOOR SLEEVE WITH DUAL MECHANICAL SEAL
DETAIL B
 NTS



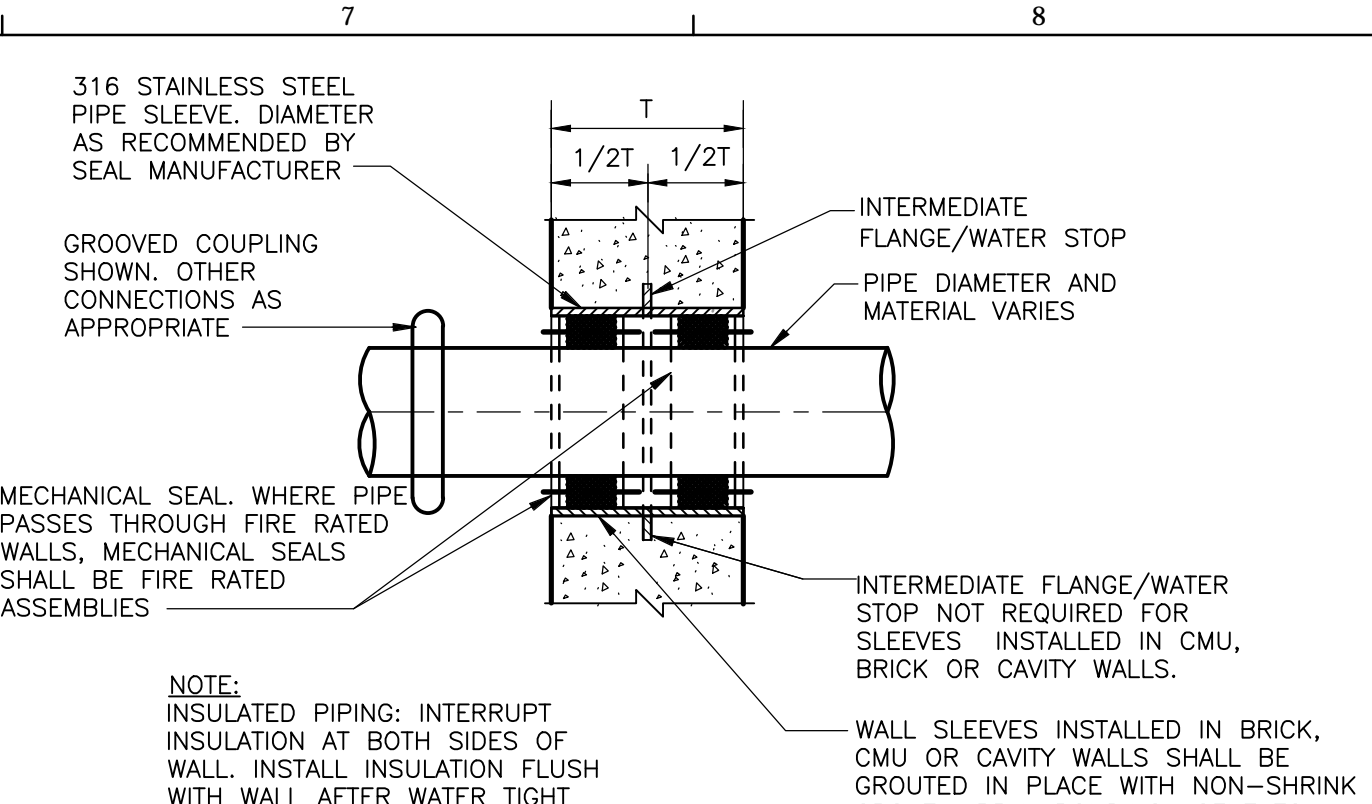
PIPE SLEEVE (WET FLOOR)
DETAIL F
 NTS



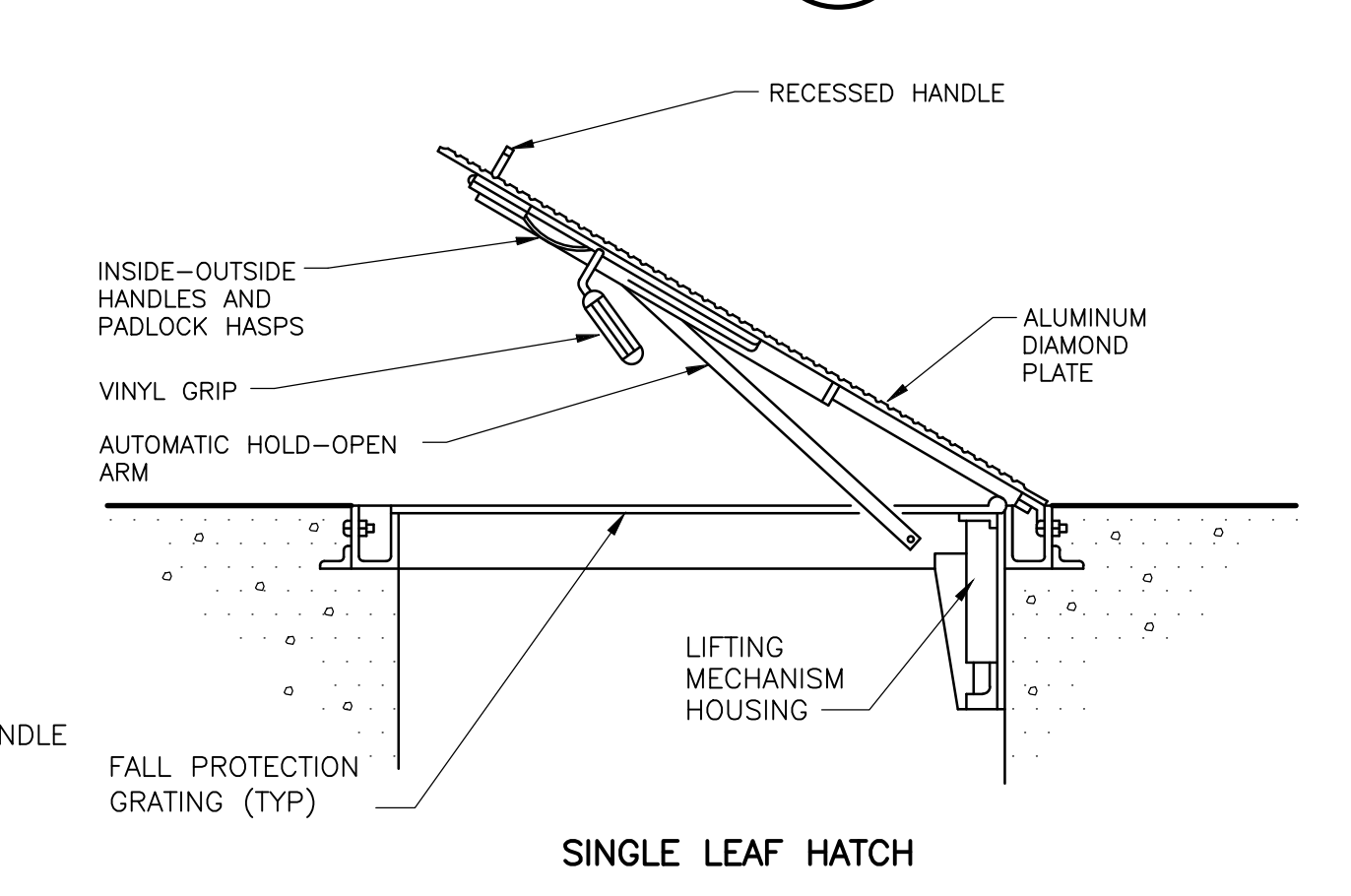
SLEEVE WITH MECHANICAL SEAL
DETAIL C
 NTS



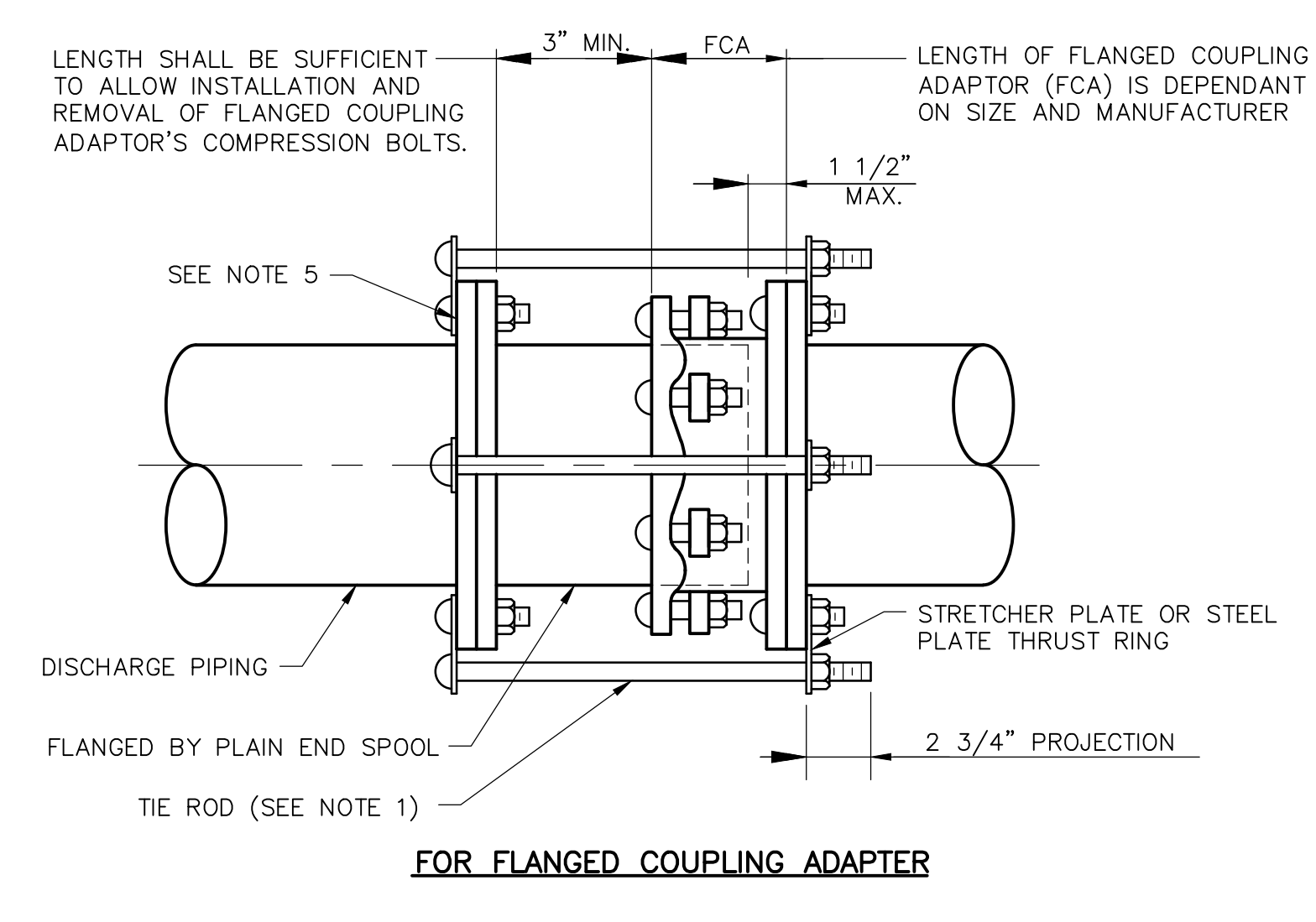
DOUBLE LEAF HATCH TYPICAL HATCH DETAIL
DETAIL G
 NTS



WALL SLEEVE WITH MECHANICAL SEAL FOR CONCRETE, BRICK, CMU OR CAVITY WALLS
DETAIL D
 NTS



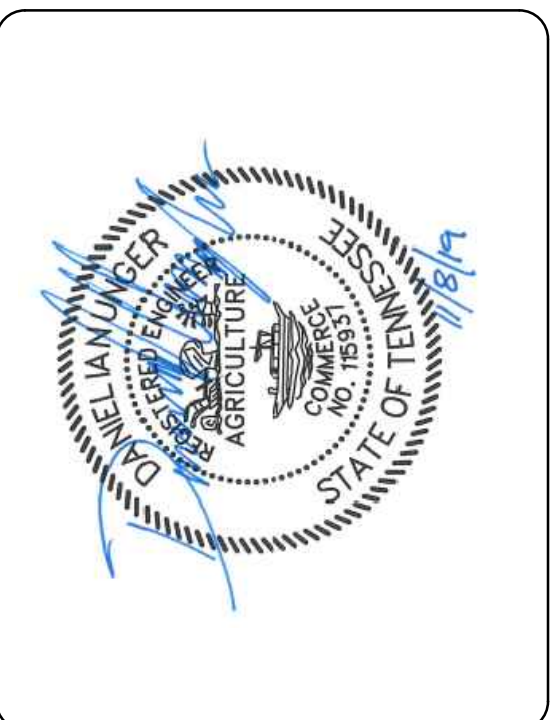
SINGLE LEAF HATCH
HATCH NOTES
 1. ALUMINUM HATCHES TO BE SUPPLIED WITH STAINLESS STEEL HARDWARE.
 2. ALL HATCHES TO BE SUPPLIED WITH SAFETY CHAINS. CORNER POST WITH FLOOR INSERTS MUST ALSO BE PROVIDED FOR SINGLE LEAF HATCHES.
 3. ALL HATCHES TO BE SUPPLIED WITH HIGH SECURITY DETENTION LOCKS.
 4. HINGE PINS SHALL NOT BE ACCESSIBLE WHEN THE HATCH IS IN THE CLOSED POSITION.



FOR FLANGED COUPLING ADAPTER

TIE ROD SCHEDULE FOR HARNESSED JOINTS		
PIPE DIAMETER (IN)	TIE ROD DIAMETER (D) (IN)	NUMBER OF TIE RODS
6	5/8	2
8	5/8	2
10	5/8	2
12	3/4	2
14	3/4	2
16	7/8	2
18	1	2
20	1	2
24	1-1/8	4
30	1-1/8	4
36	1-1/4	4
42	1-1/2	4
48	1-5/8	4

- NOTES:**
- PROVIDE NUMBER OF TIE RODS PER SCHEDULE. EVENLY SPACE INSTALLATION OF THE TIE RODS. LENGTH OF TIE RODS TO BE DETERMINED BY CONTRACTOR BASED ON SIZE AND FLANGED COUPLING ADAPTOR AND FINAL LENGTH OF SPOOL PIECE.
 - TIE ROD SCHEDULE IS VALID FOR PRESSURES UP TO 150 PSI. FOR PRESSURES OVER 150 PSI SEE AWWA MANUAL 11.
 - PROVIDE STRETCHER PLATE OR STEEL PLATE THRUST RING FOR ATTACHMENT OF THE RODS. FOR SIZE SEE TABLE.
 - MATERIALS - HARNESSED RODS: ASTM A-307 HOT DIP GALVANIZED. STRETCHER PLATE: ASTM A36 STEEL HOT DIP GALVANIZED. FLEXIBLE COUPLING: PER SPECIFICATIONS.
 - WELD TO MAINTAIN MINIMUM PIPE STRENGTH. REPAIR COATINGS AS REQUIRED.
 - WRAP ALL COUPLING BURIED BELOW GRADE IN PROTECTIVE TAPE.



DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

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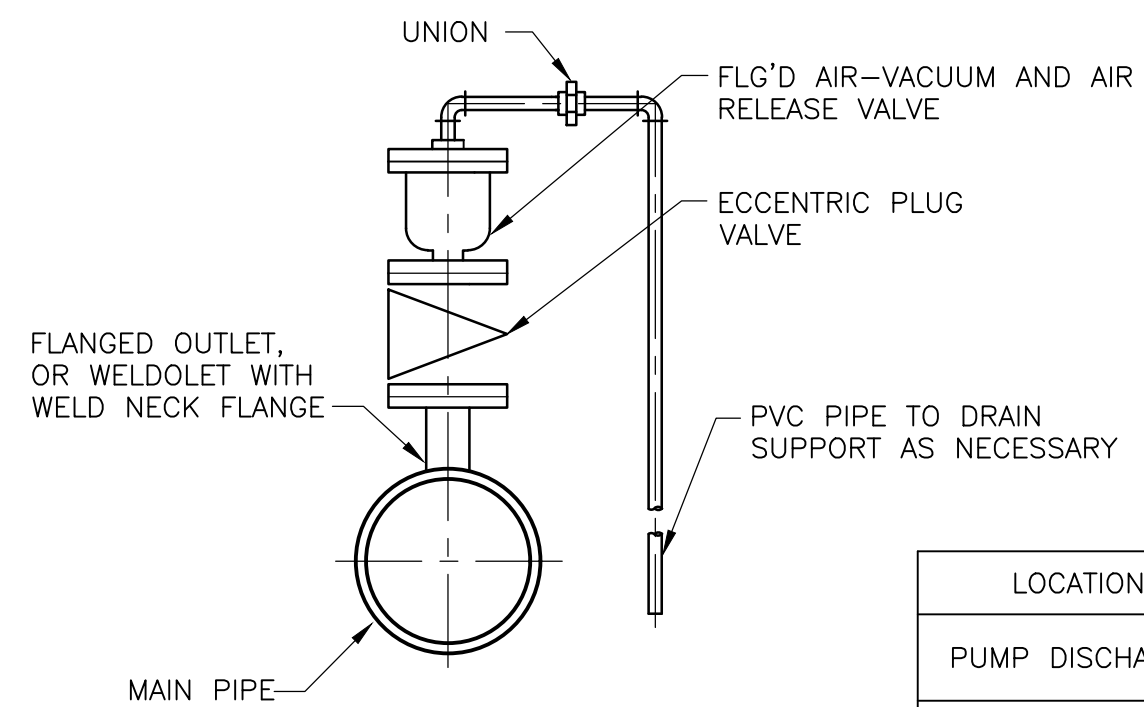
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DU	CB	CF/MT

SHEET TITLE: MECHANICAL

MISCELLANEOUS DETAILS

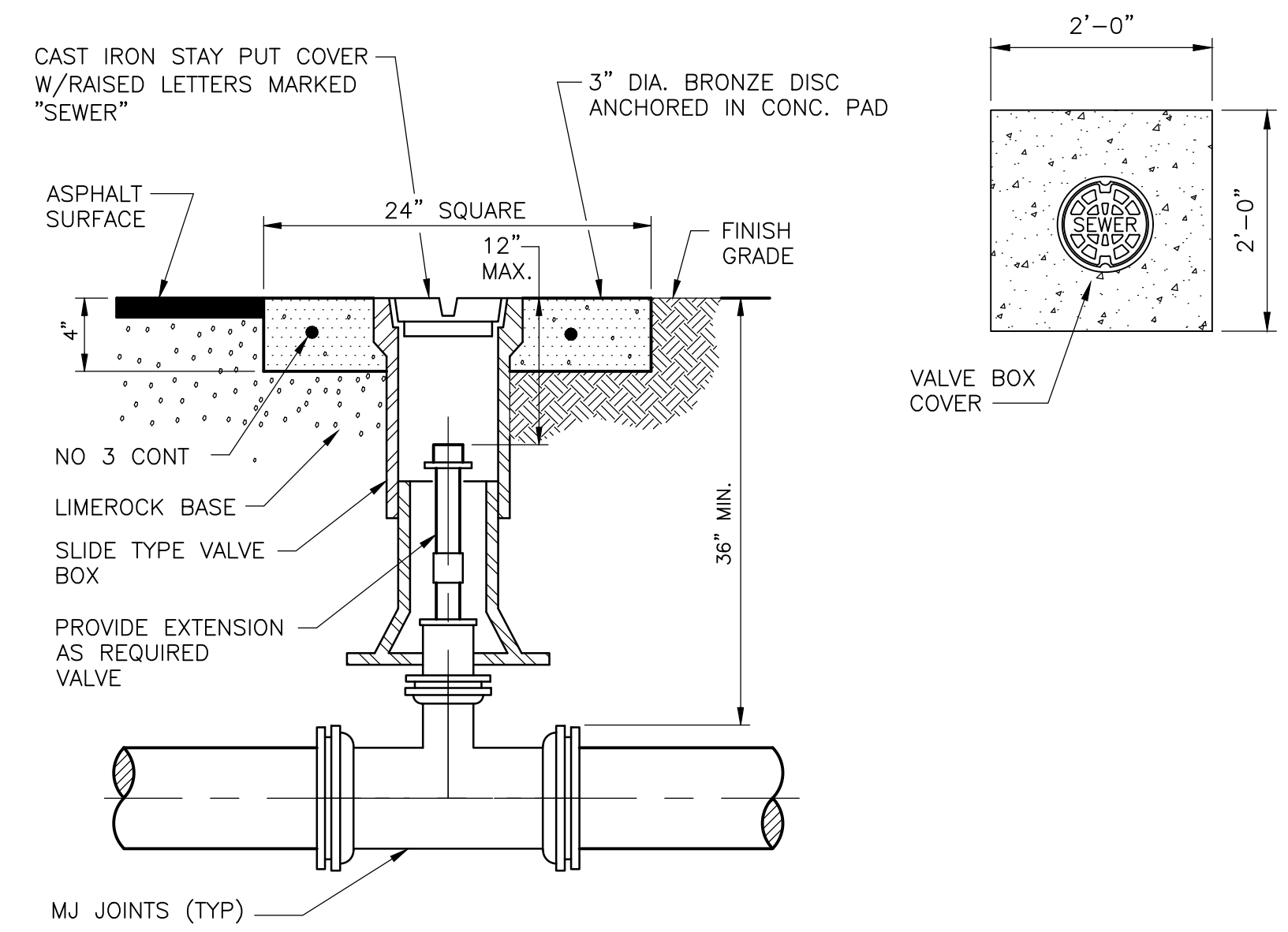
SHEET: MD-1

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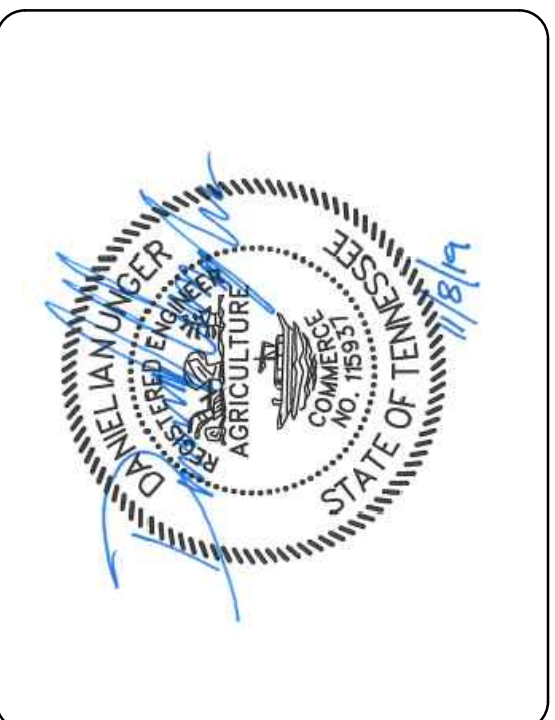
AIR RELEASE VALVE
DETAIL A
NTS

LOCATION	SIZE	TYPE	QUANTITY	COMMENTS
PUMP DISCHARGE	3"	AW	4	
DISCHARGE HEADER	6"	CAV	1	DOUBLE ACTING THROTTLING DEVICE SET TO 5% OPENING




VALVE BOX AND STEM FOR TYPICAL BURIED VALVE
DETAIL E
NTS


CDM Smith
 CDM Smith Inc.
 651 East 4th Street Suite 100
 Chattanooga, TN 37403
 Tel: (423) 771-4495



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SHEET TITLE
MECHANICAL

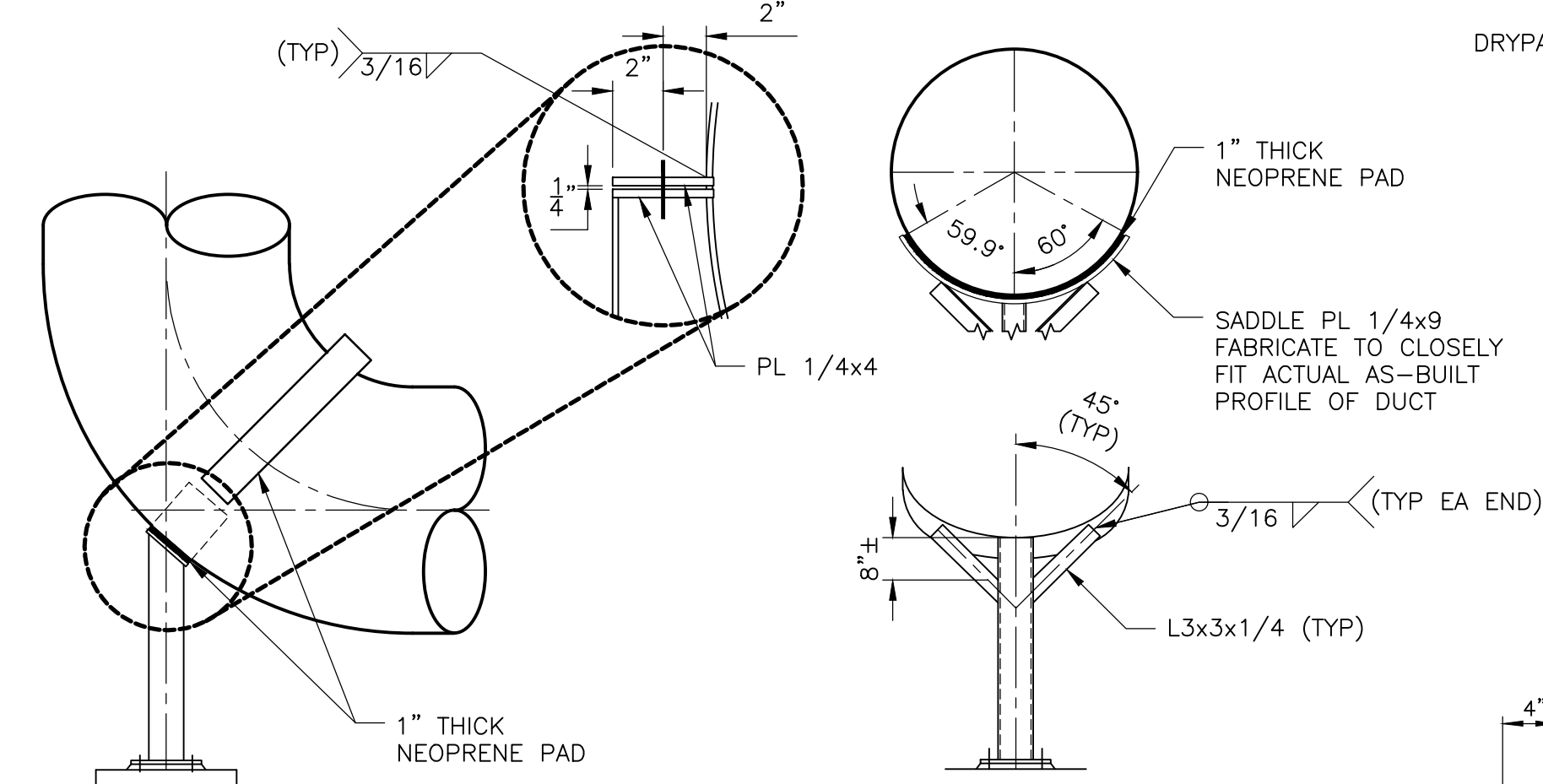
MISCELLANEOUS
DETAILS

SHEET MD-2

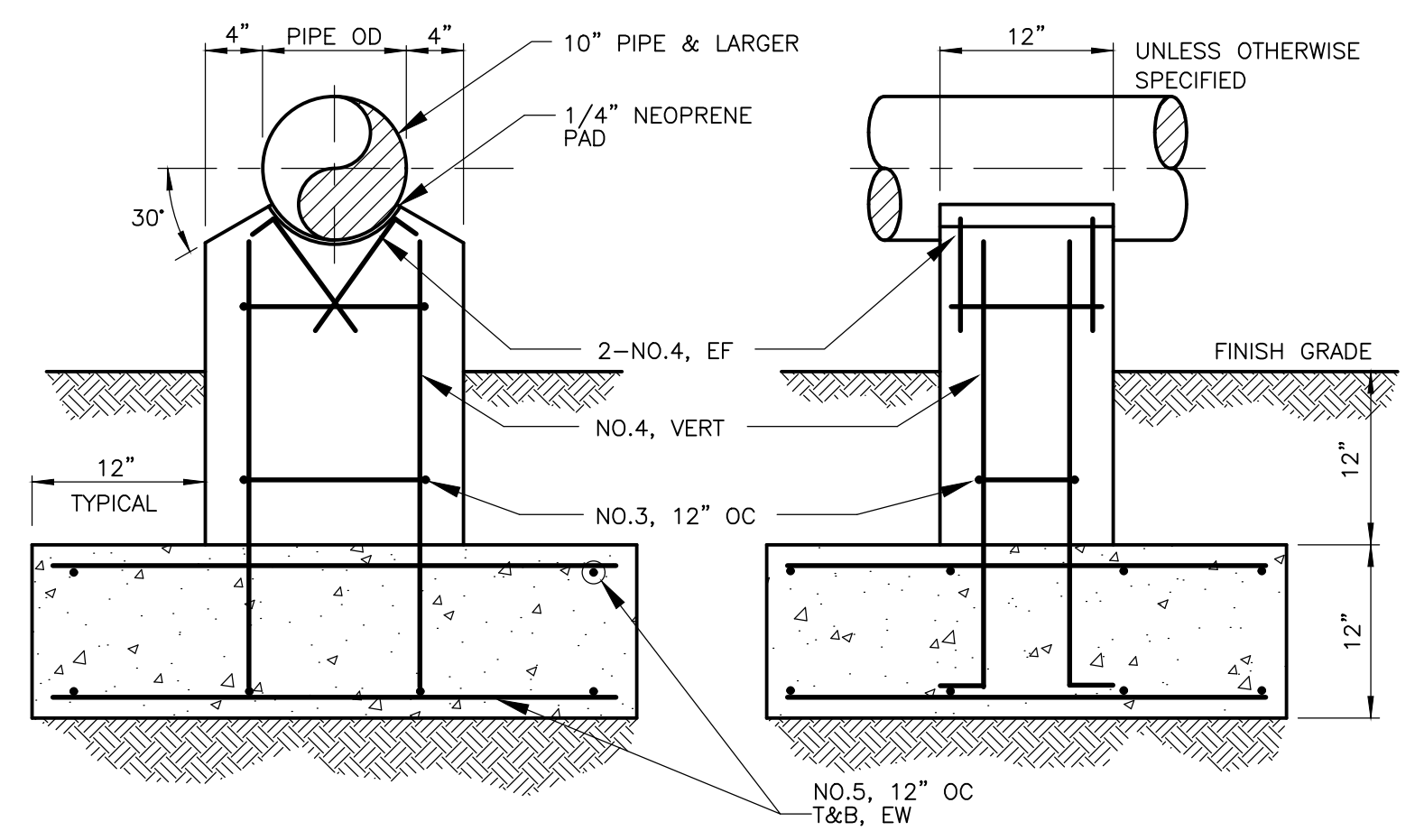
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MIN. DUCT WALL THICKNESS	
DIAMETER* (INCHES)	FILAMENT WOUND THICKNESS (INCHES)
0-23	0.225
24-30	0.275
36-42**	0.375
48-60**	0.525
66-72**	0.625

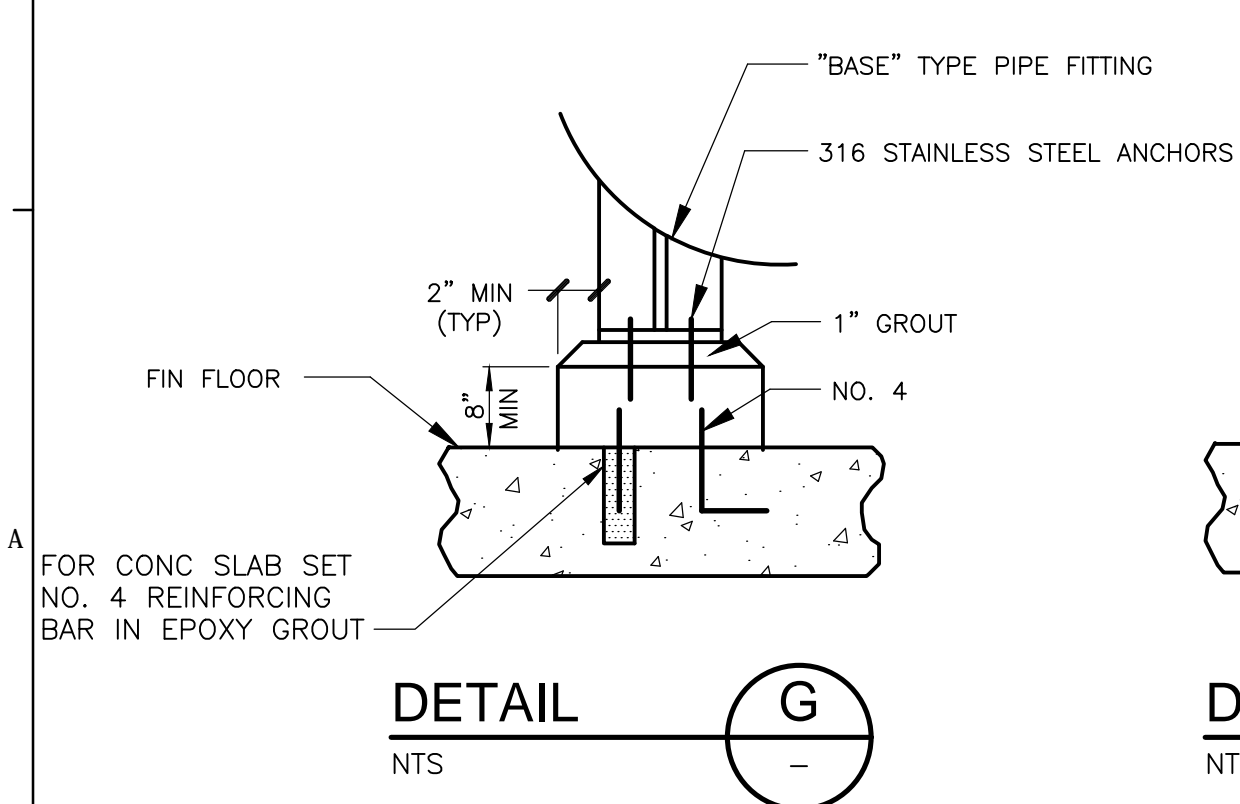
SUPPORT SIZING:
 $DUCT\ ID + 0.25" = 2(MINIMUM\ WALL\ THICKNESS) + 1"$
 CONFIRM ALL DUCT SIZING WITH THE MANUFACTURER.



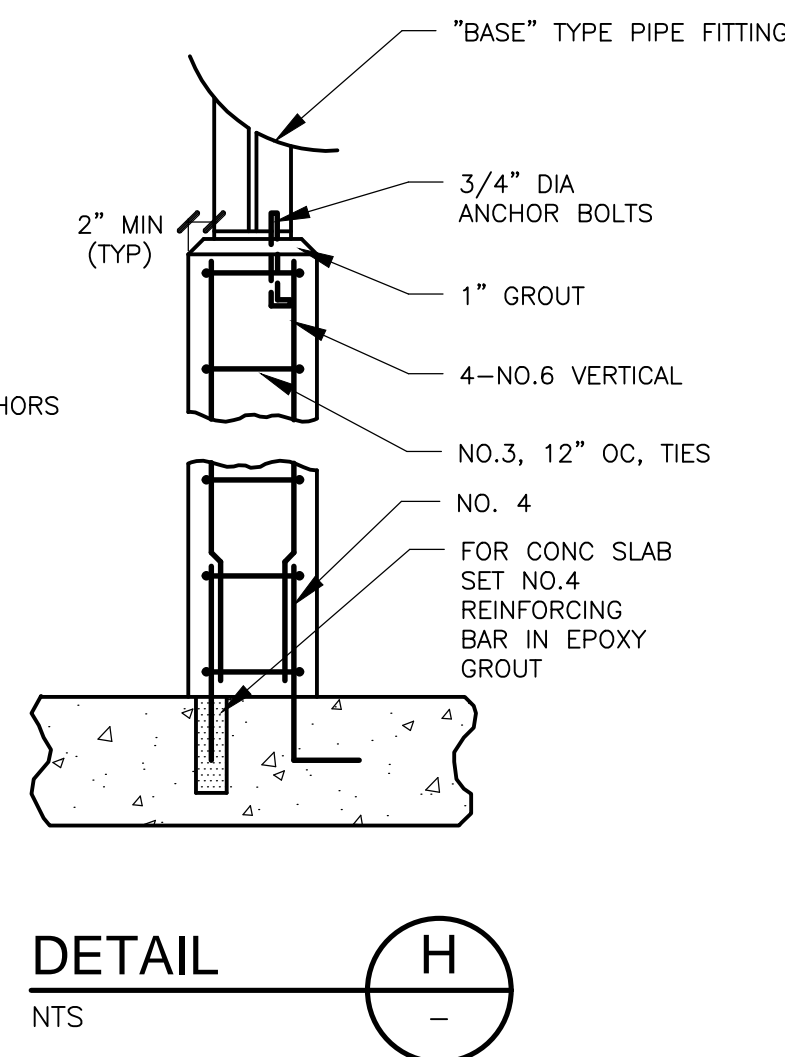
**ELBOW DUCT SUPPORT
DETAIL A**
NTS



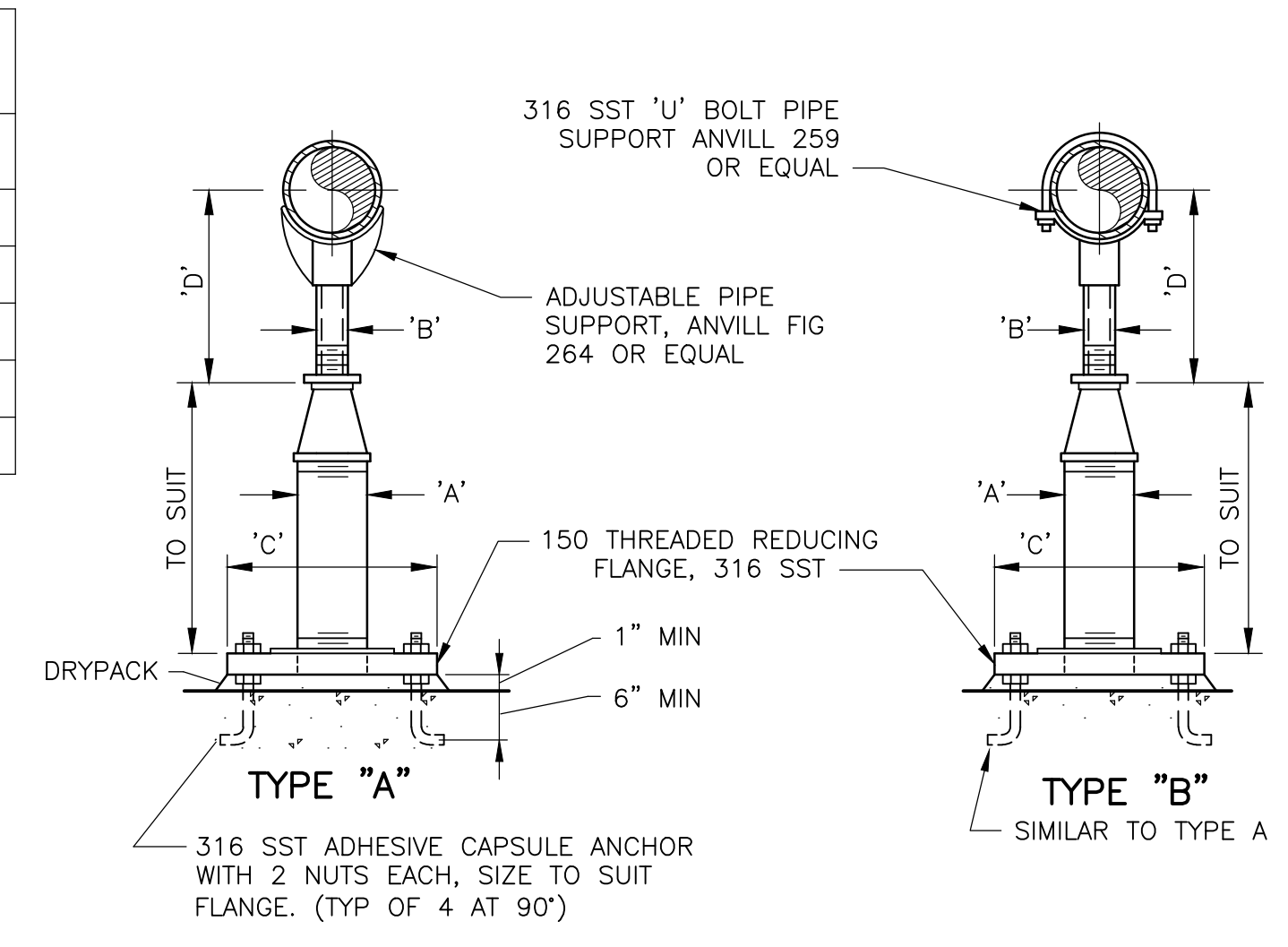
**10" PIPE AND LARGER
DETAIL C**
NTS



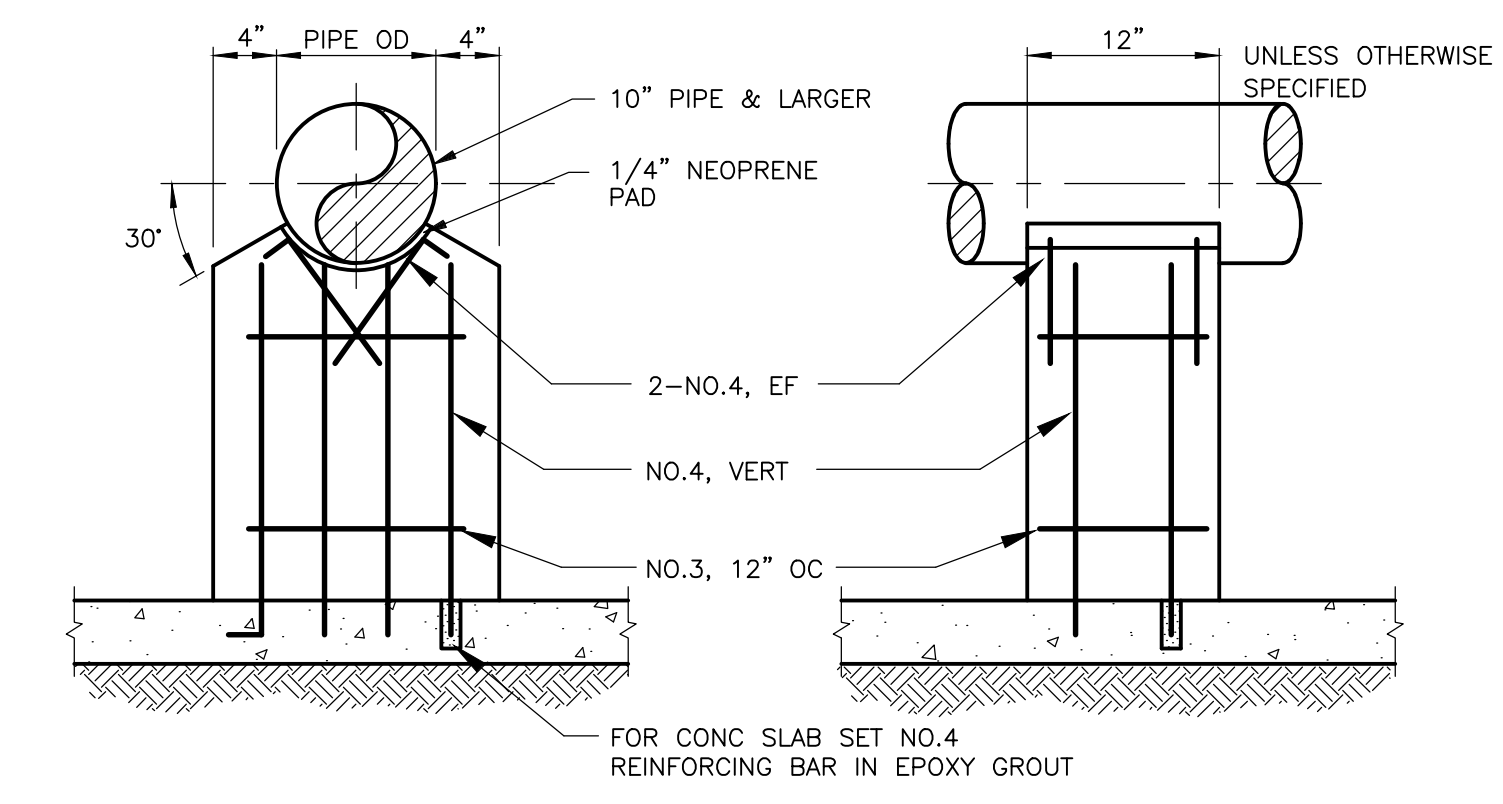
DETAIL G
NTS



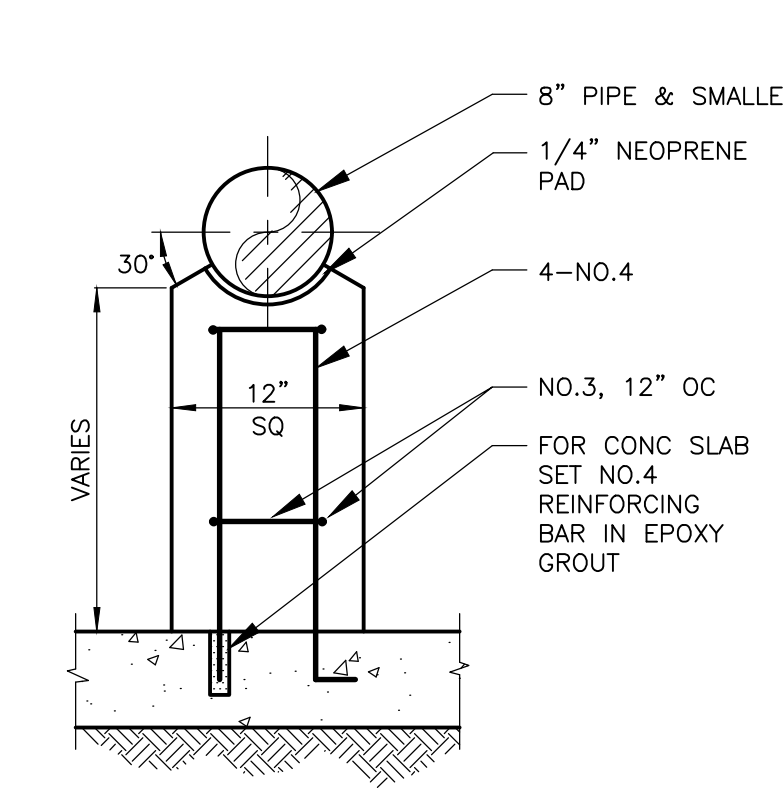
DETAIL H
NTS



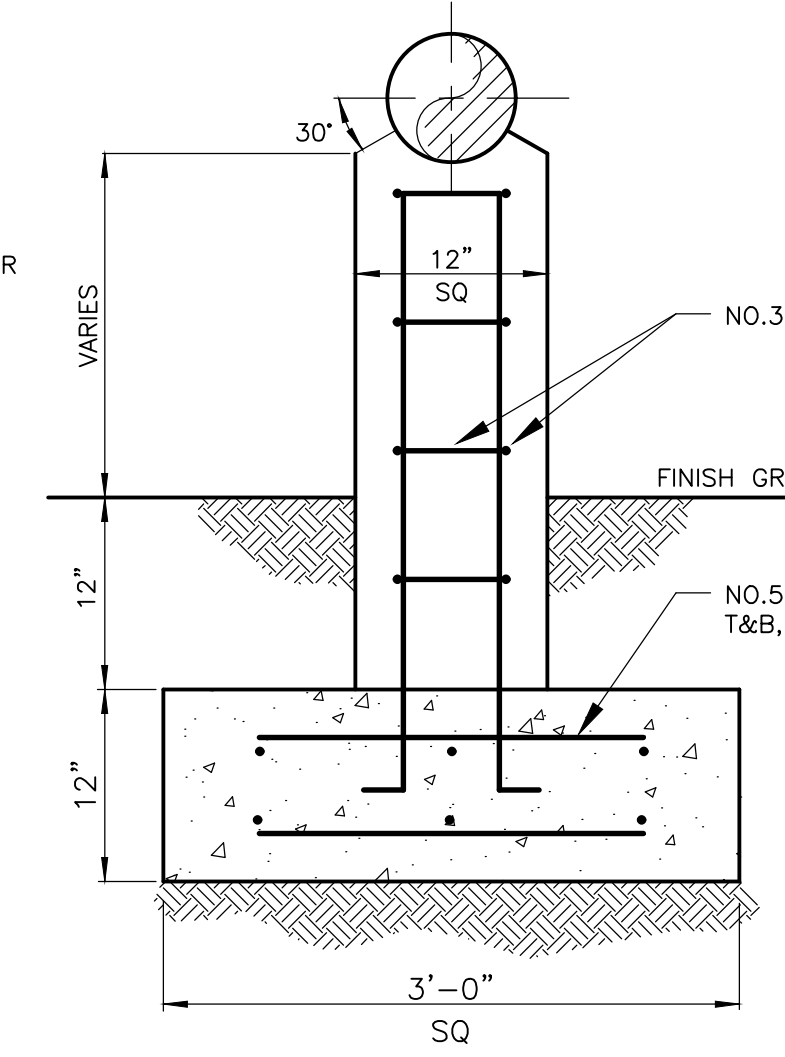
**ADJUSTABLE PIPE SUPPORT
DETAIL B**
NTS



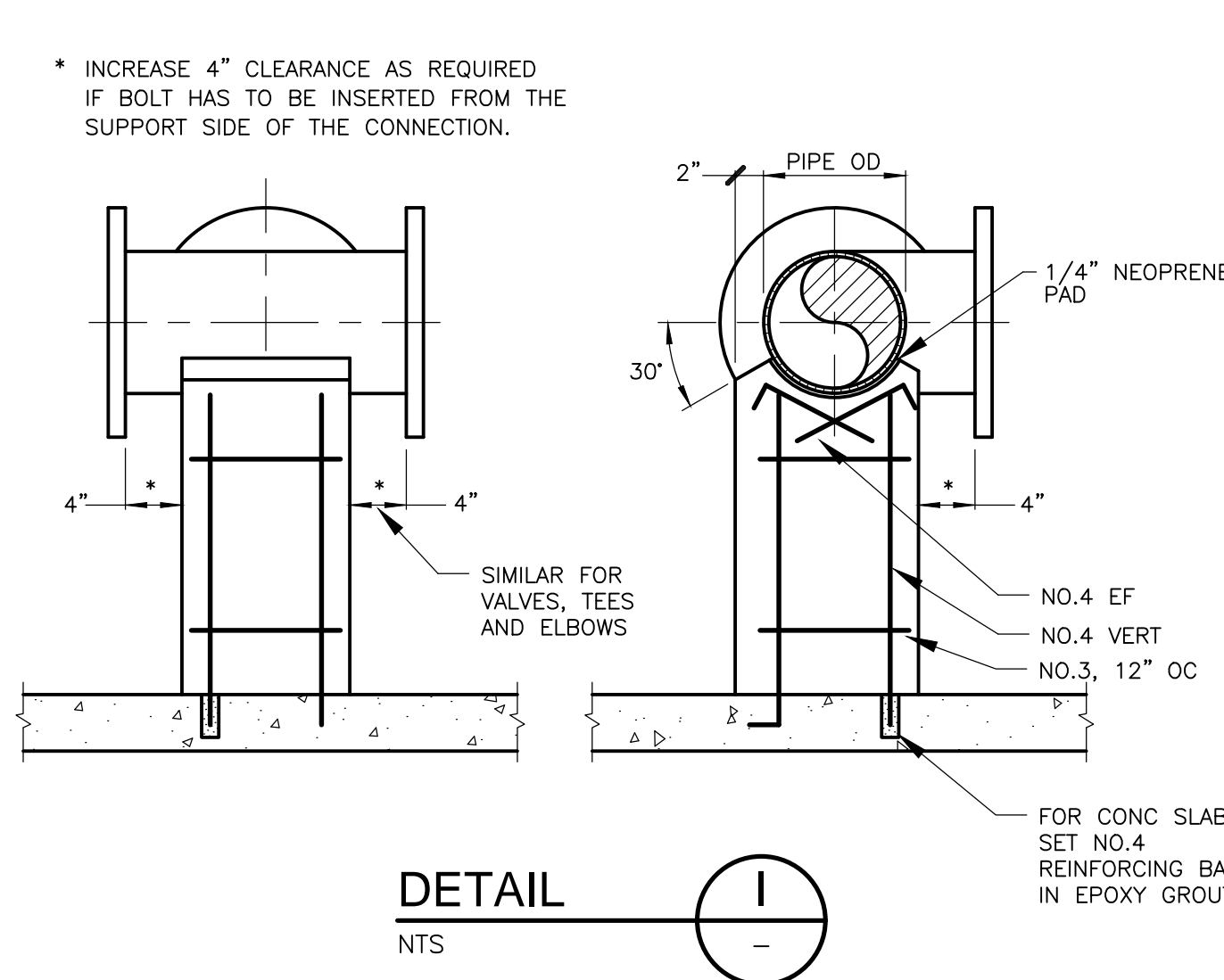
**10" PIPE AND LARGER
DETAIL D**
NTS



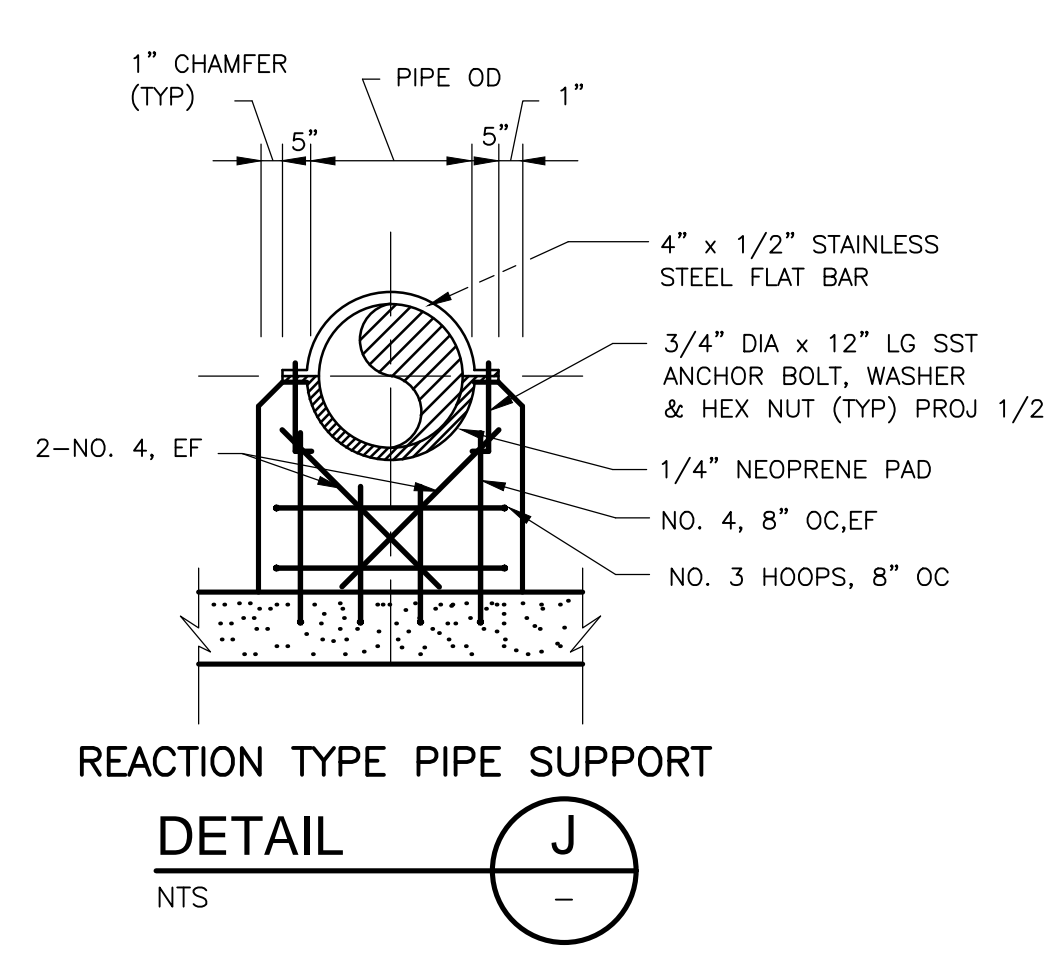
**8" PIPE OR SMALLER
DETAIL E**
NTS



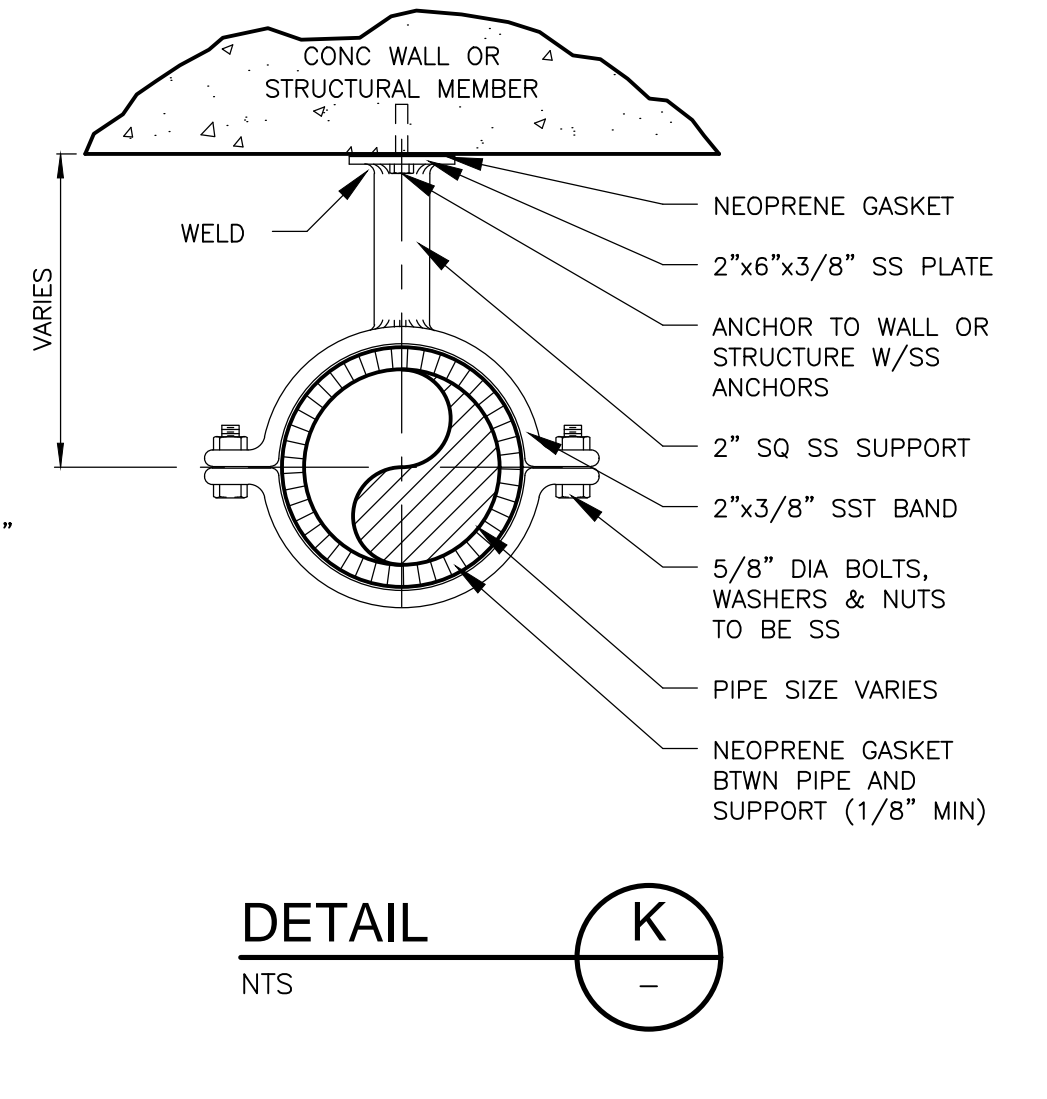
**8" PIPE OR SMALLER
DETAIL F**
NTS



DETAIL I
NTS



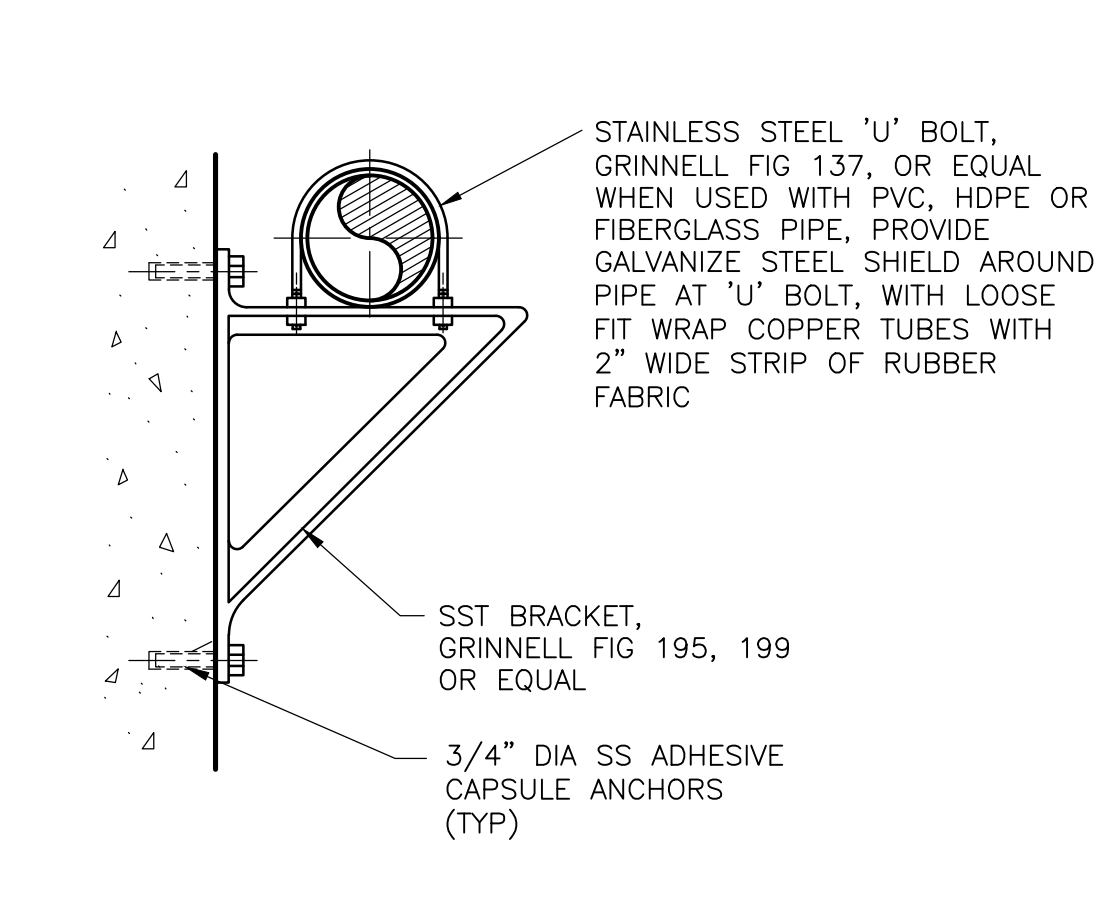
**REACTION TYPE PIPE SUPPORT
DETAIL J**
NTS



DETAIL L
NTS

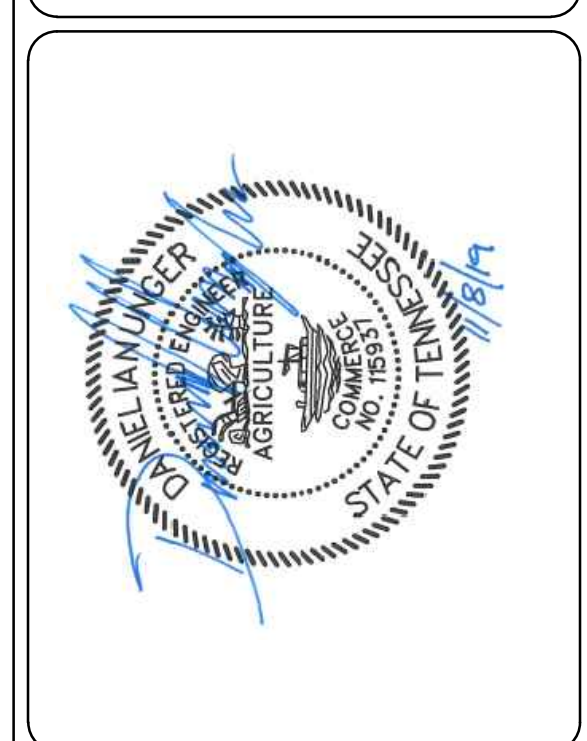
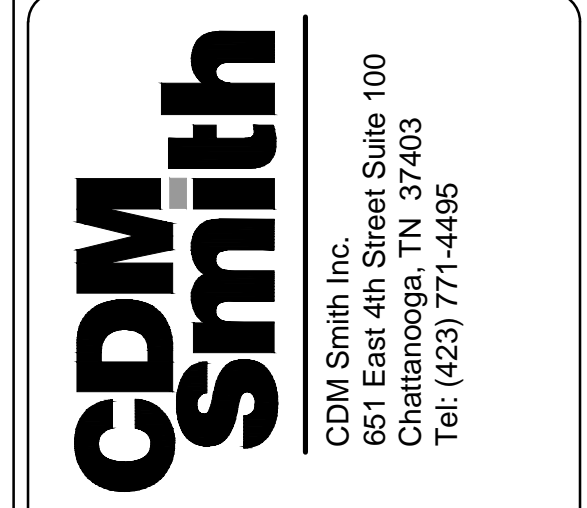
ADJUSTABLE PIPE SUPPORT APPROX DIMENSIONS IN INCHES					
PIPE SIZE	A	B	C	D MIN	D MAX
2 1/2	2 1/2	1 1/2	9	8	11 1/2
3	2 1/2	1 1/2	9	8 1/4	11 3/4
3 1/2	2 1/2	1 1/2	9	8 1/2	12
4	3	2 1/2	9	10 1/4	14
6	3	2 1/2	9	11 5/8	15 1/4
8	3	2 1/2	9	13 5/8	16 1/2
10	3	2 1/2	9	14 5/8	18 1/4
12	3	2 1/2	9	15 5/8	19 3/4
14	4	3	11	18 5/8	20 3/4
16	4	3	11	19 7/8	22 1/4
18	6	3 1/2	13 1/2	21 1/4	24
20	6	3 1/2	13 1/2	23 1/4	25 1/2
24	6	4	13 1/2	26 1/2	28 1/4
30	6	4	13 1/2	29 5/8	31 1/2
32	6	4	13 1/2	30 5/8	32 3/4
36	6	4	13 1/2	32 5/8	34 3/4

NOTE:
 1. UNDER VALVES, METERS OR OTHER SPECIAL APPURTENANCES A FABRICATED SUPPORT PIECE MAY BE UTILIZED AS ACCEPTABLE TO ENGINEER
 2. CONTRACTOR SHALL COAT/PAINT THE SUPPORT IMMEDIATELY AFTER INSTALLATION.



NOTE:
 STAINLESS STEEL SHIELDS, BRACKETS, U BOLTS, AND BOLTS ARE TO BE SS TYPE 316

**PIPE BRACKET
DETAIL L**
NTS

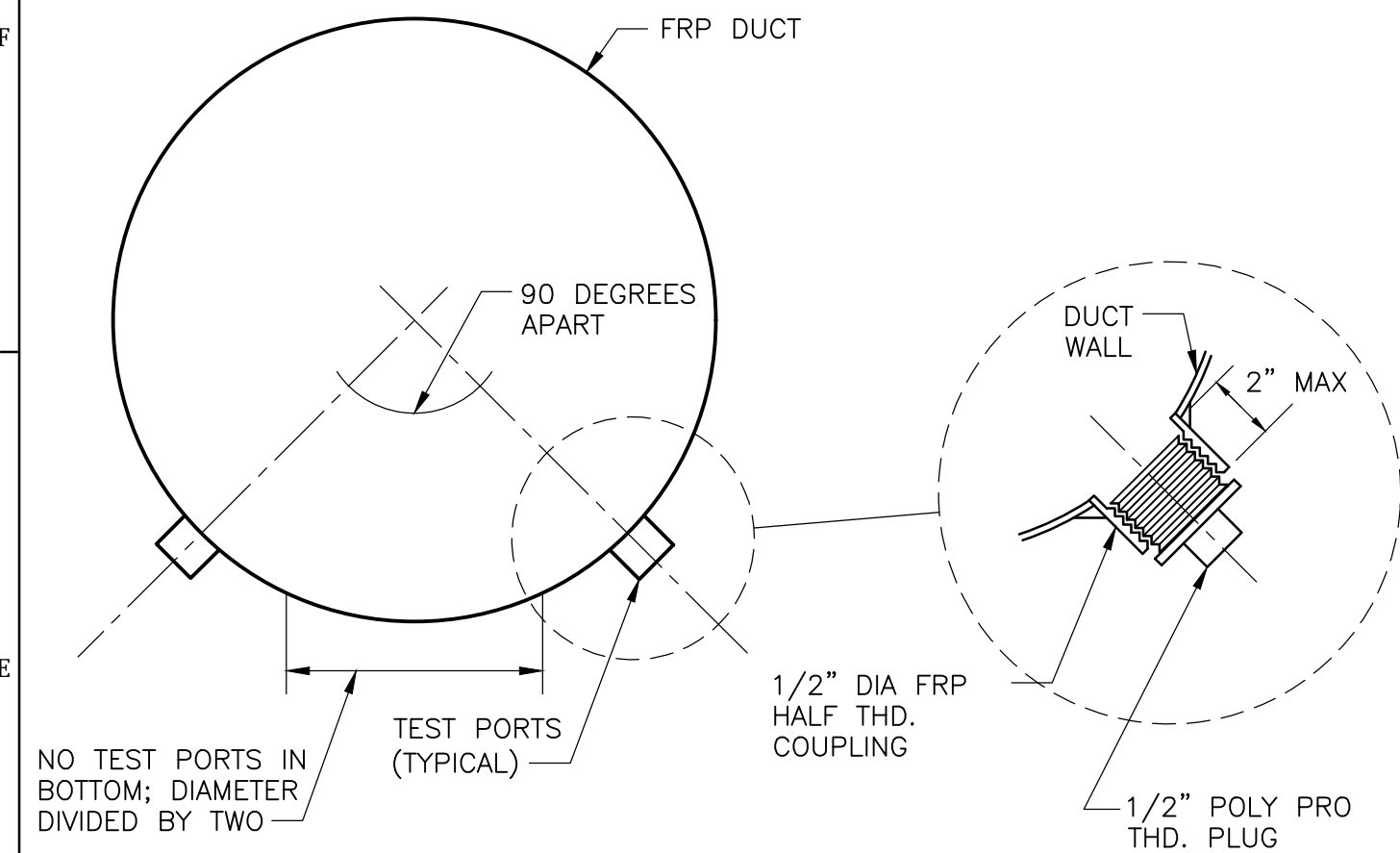


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 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
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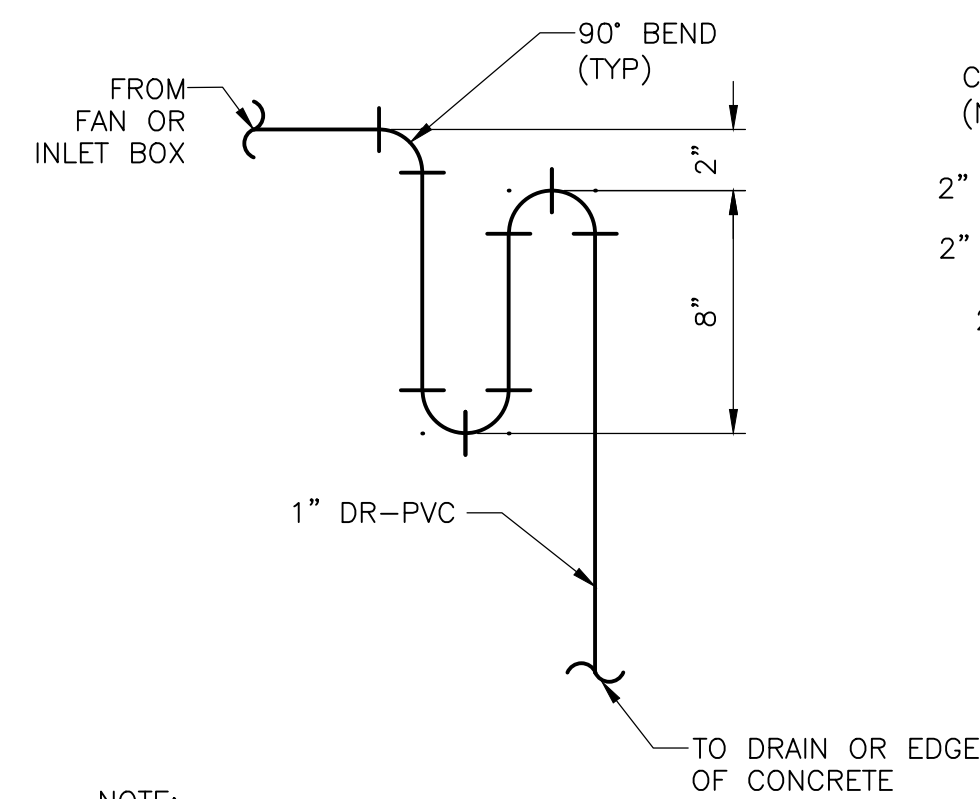
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 PIPE SUPPORT DETAILS
 SHEET: MD-3

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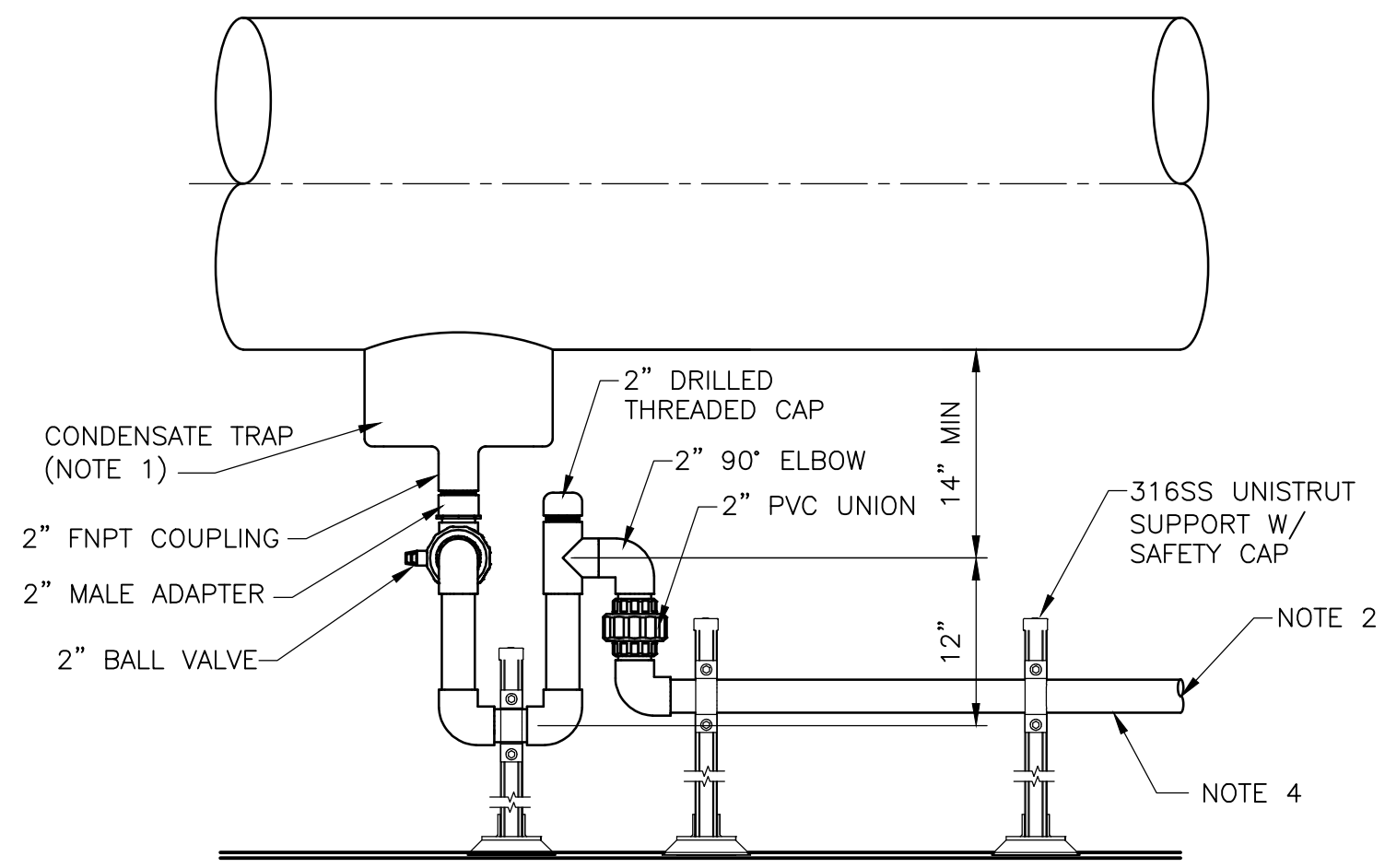
- NOTES:**
- FOR DUCTS OVER 48" DIA. PROVIDE 4 PORTS, 90 DEGREES APART.
 - LOCATE AND POSITION TEST PORTS IN ACCESSIBLE LOCATIONS FOR A PERSON WITH A PITOT TUBE. IN SOME CASES THE TEST PORTS MAY NEED TO BE ON THE TOP OR THE SIDE.
 - LOCATION OF TEST PORTS SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF AABC & NEBB.

TEST PORT
DETAIL A
NTS



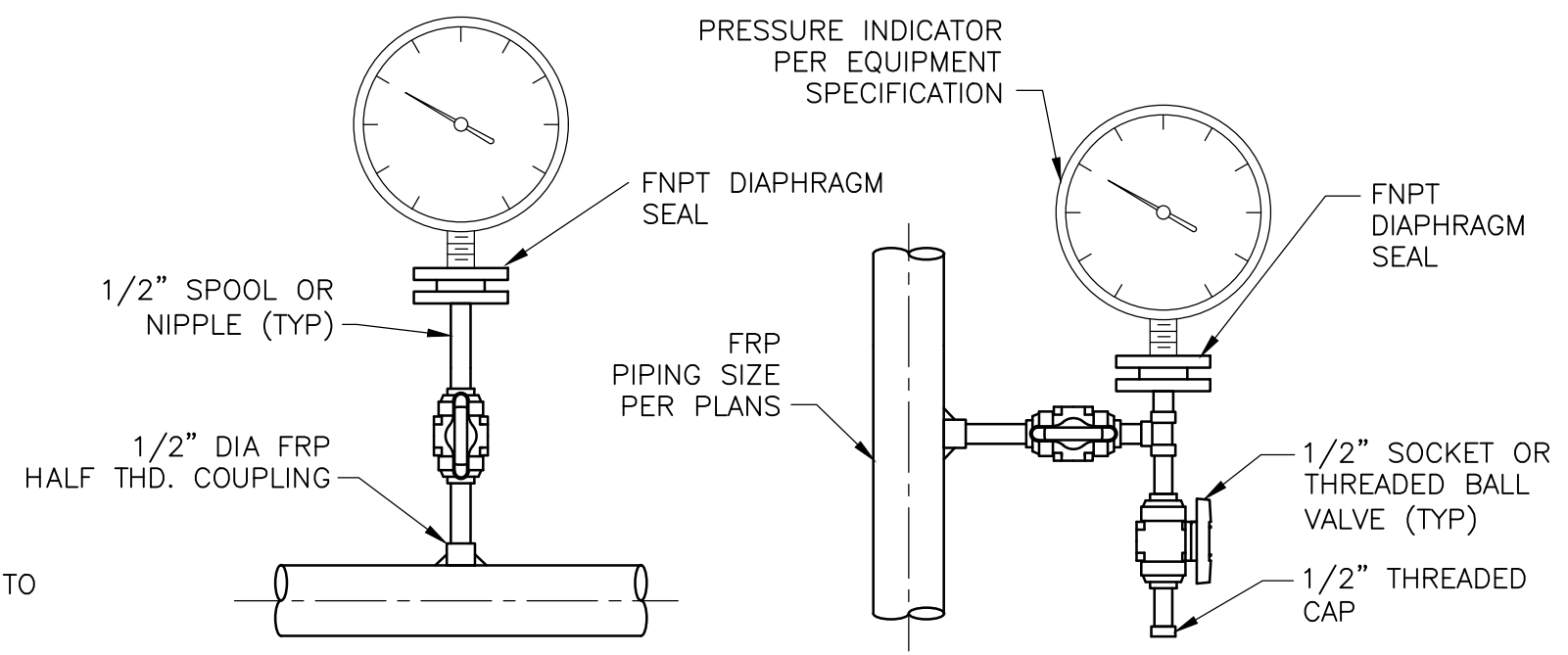
- NOTE:**
- TRAP SHALL BE USED ON ALL FAN AND INLET BOX DRAINS OR WHERE CALLED OUT ON DRAWINGS.
 - ALL EXPOSED PIPING SHALL BE INSULATED AND HEAT TRACED PER SECTION 23 07 00 AND 40 41 13, RESPECTIVELY. SEE ELECTRICAL DRAWINGS FOR DETAILS.

TRAP
DETAIL B
NTS



- NOTES:**
- CONDENSATE TRAP SIZE SHALL BE APPROXIMATELY 20% OF DUCT DIAMETER ROUNDED TO NEXT COMMON DUCT SIZE.
 - P-TRAP DISCHARGE SHALL EITHER EXTEND DOWN TO CONCRETE SLAB, ASPHALT, OR STONE PAD WITH 90 DEGREE BEND AT END POINTING TOWARDS NEAREST EDGE. INSTALL AT LOCATIONS WHERE SHOWN ON THE DRAWINGS.
 - ALL EXPOSED PIPING SHALL BE INSULATED AND HEAT TRACED PER SECTION 23 07 00 AND 40 41 13, RESPECTIVELY. SEE ELECTRICAL DRAWINGS FOR DETAILS.
 - PIPE MATERIAL SHALL BE SCHEDULE 80 PVC.

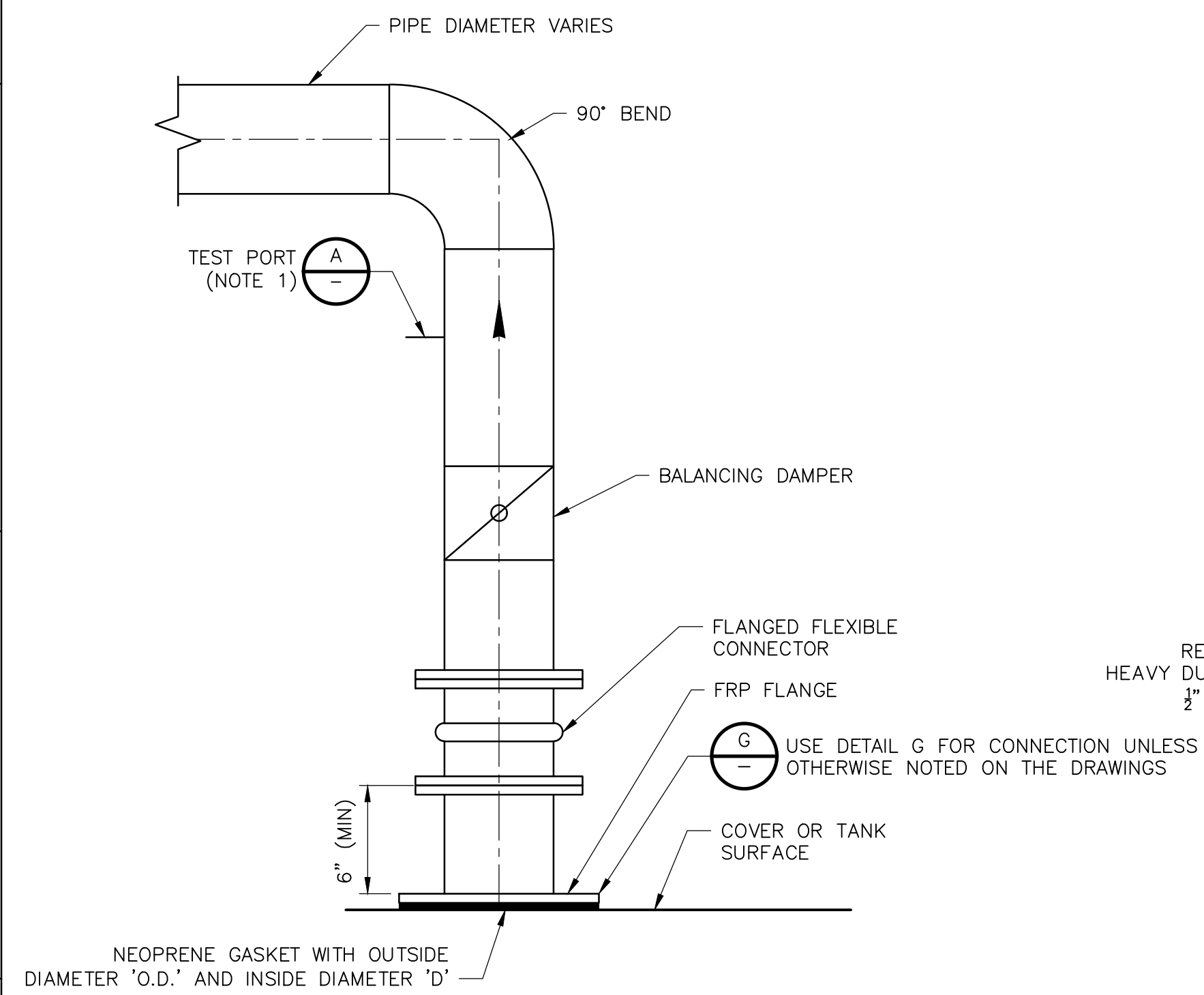
P-TRAP
DETAIL C
NTS



HORIZONTAL INSTALLATION VERTICAL INSTALLATION

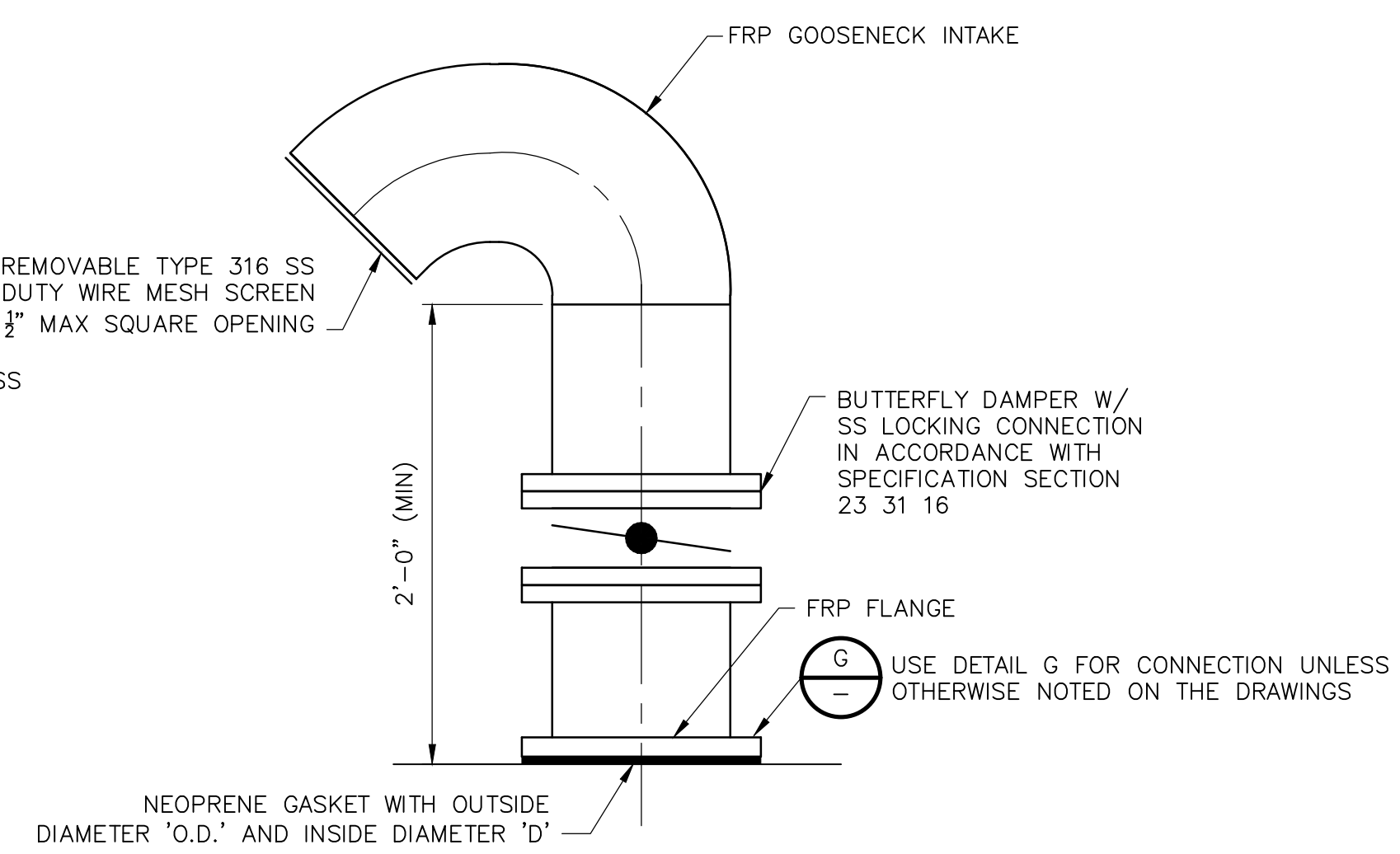
- NOTES:**
- ALL PIPE, VALVES, AND FITTINGS TO BE PVC OR CPVC AND CONNECT INTO FRP PIPING. PROVIDE SCH 80 FITTINGS AND NIPPLES FOR THREADED JOINTS.

PRESSURE GAUGE IN FRP PIPE
DETAIL D
NTS

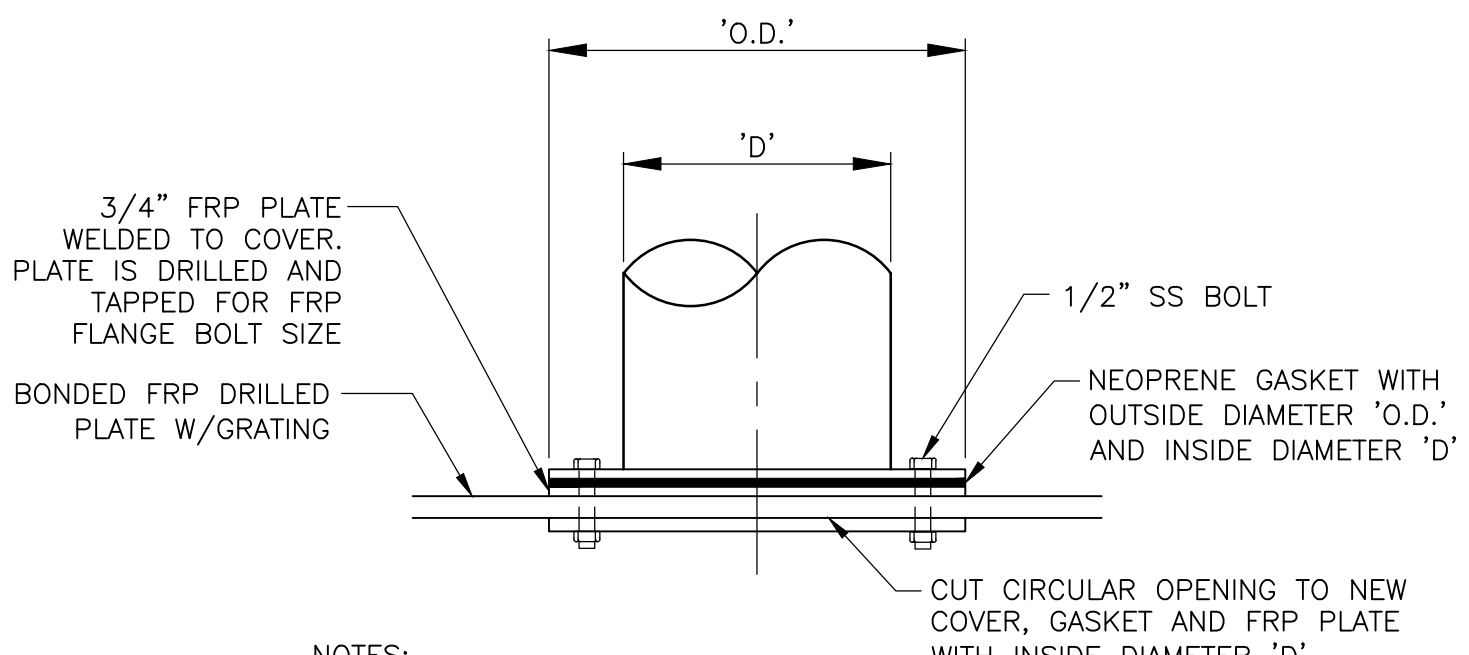


- NOTES:**
- TEST PORT SHALL BE LOCATED AS SHOWN UNLESS HORIZONTAL DUCT RUN FROM HEADER TO DUCT CONNECTION HAS A MINIMUM 5 FEET STRAIGHT SECTION BETWEEN FITTINGS. IF STRAIGHT SECTION EXISTS, INSTALL TEST PORT ON UPSTREAM SIDE OF STRAIGHT SECTION NEAR FITTING.

DUCT CONNECTION
DETAIL E
NTS

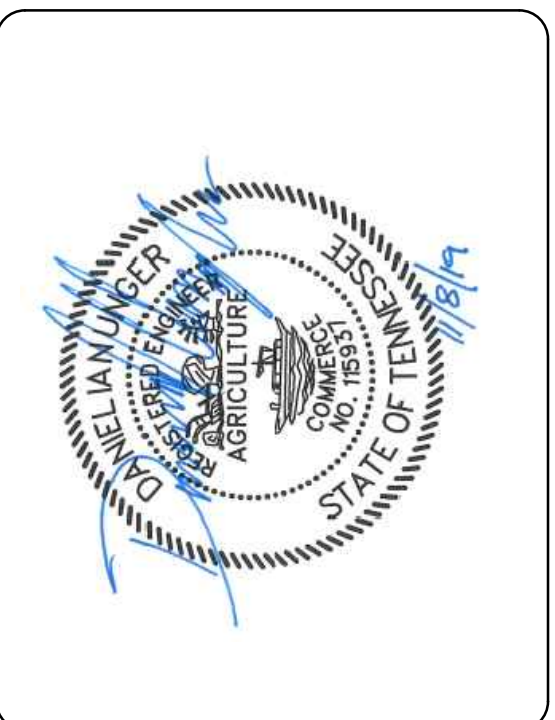


GOOSENECK INTAKE WITH DAMPER
DETAIL F
NTS



- NOTES:**
- FLANGE O.D. SHALL MATCH TYPICAL DIMENSIONS FOR A DUCTILE IRON FLANGE BASED ON FRP DIAMETER 'D'.
 - ADJUST OPENING AS REQUIRED SUCH THAT MOUNTING BOLTS WILL BE OUTSIDE OF THE FIRST UN-CUT BEARING BAR.
 - ORIENT GOOSENECK PARALLEL TO THE BEARING BAR.

PLATE CONNECTION
DETAIL G
NTS

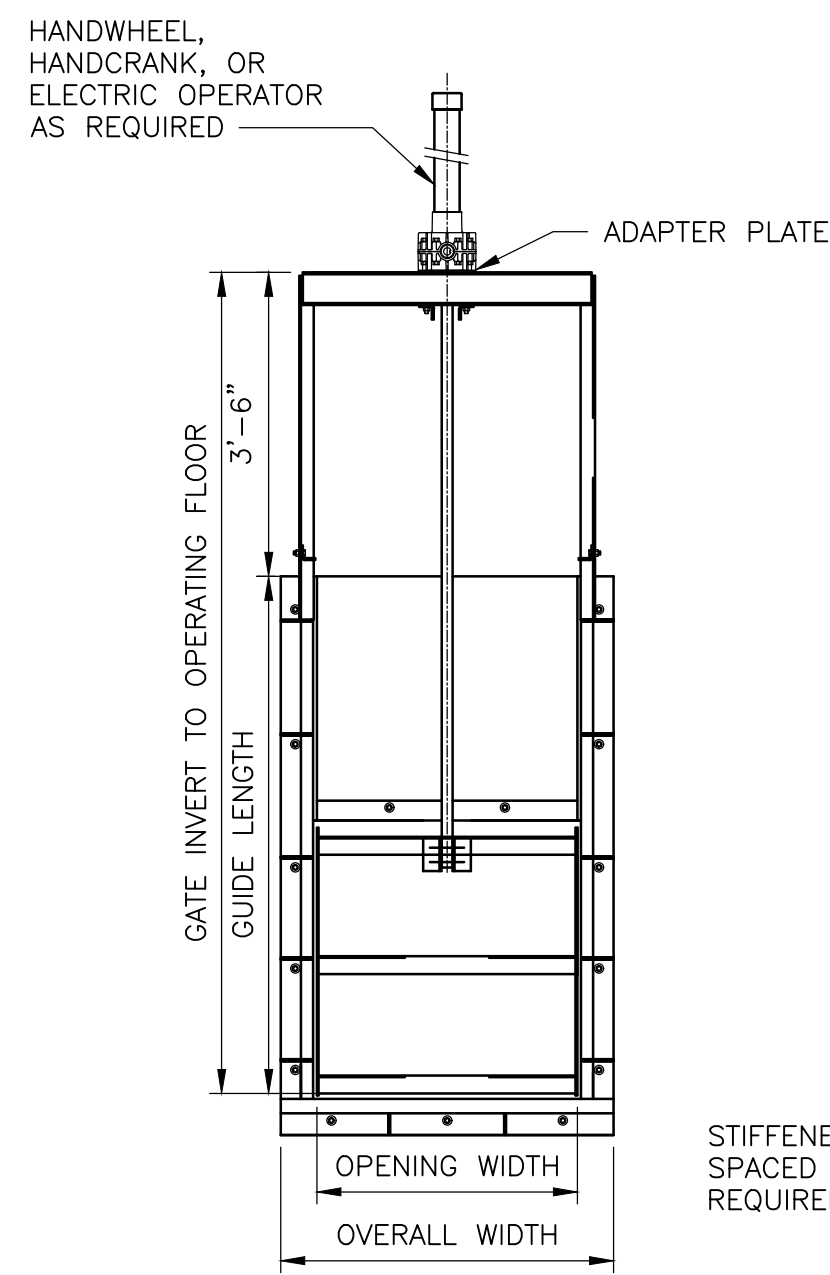


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PROJECT NO: 129699-109746		
DATE: NOVEMBER 2019		
DISC. LEAD:	DESIGNER:	CHECKER:
DU	VF	CF/MT
SHEET TITLE MECHANICAL		
ODOR CONTROL DETAILS		
SHEET	MD-4	

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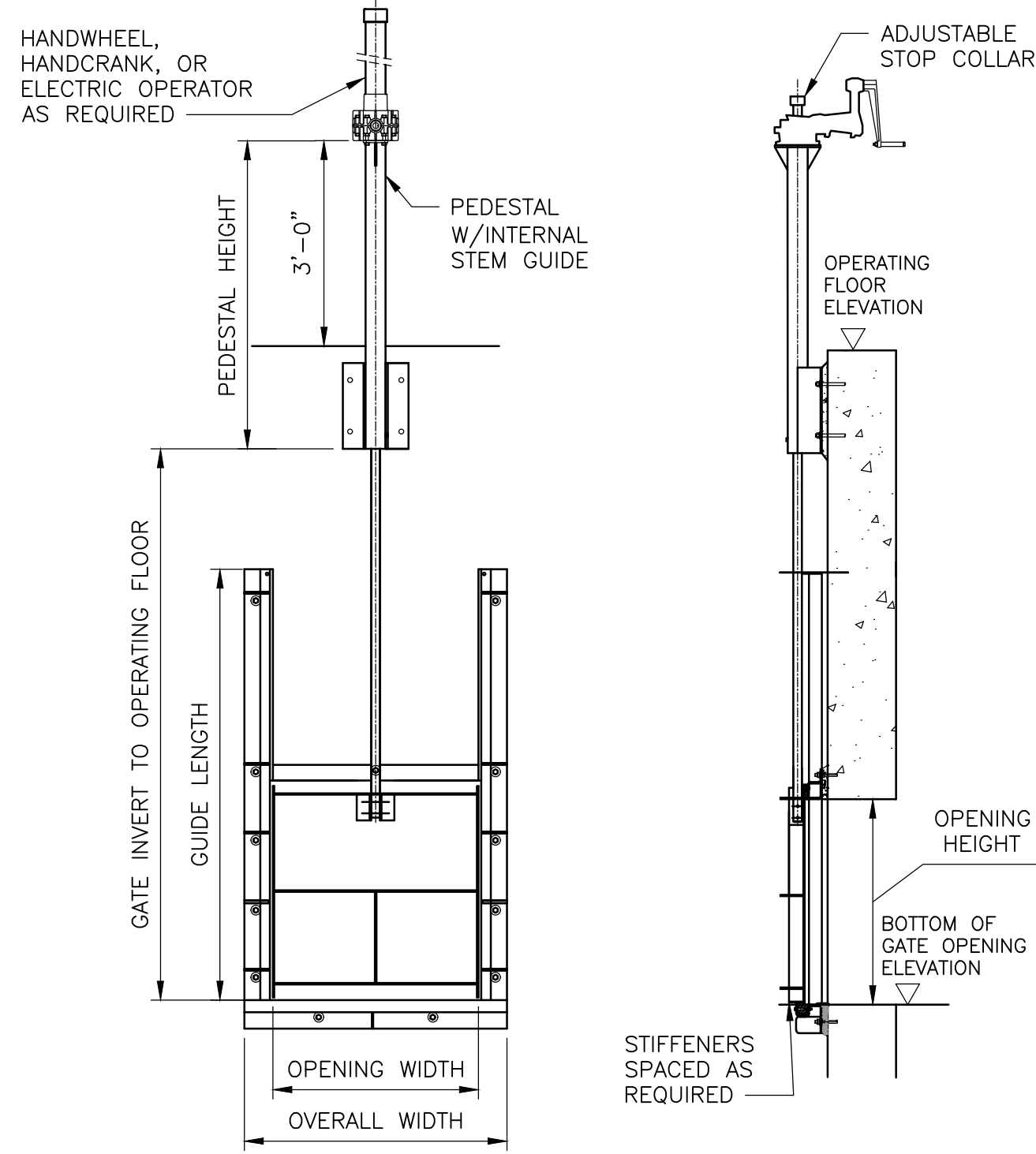


ELEVATION
SELF CONTAINED FACE MOUNTED

SLIDE GATE

SECTION
SELF CONTAINED FACE MOUNTED

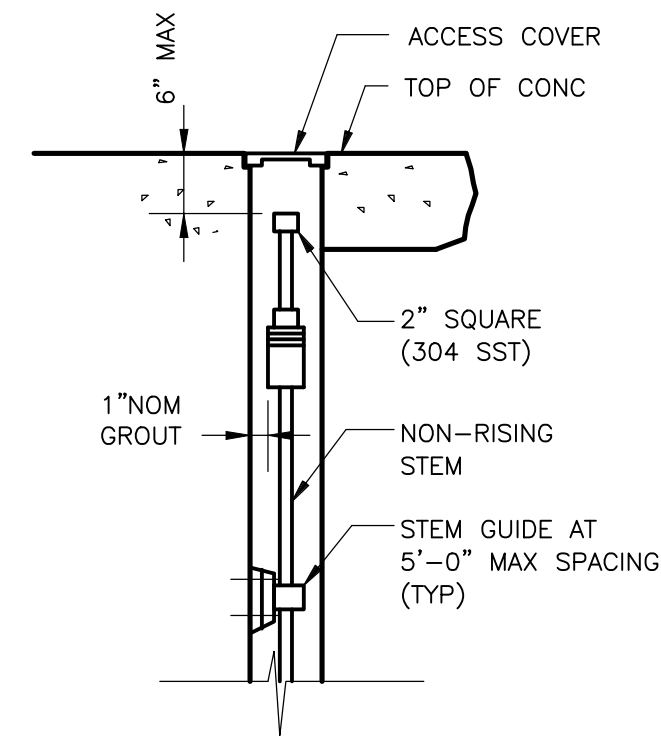
DETAIL A
NTS



ELEVATION
NON-SELF CONTAINED FACE MOUNTED

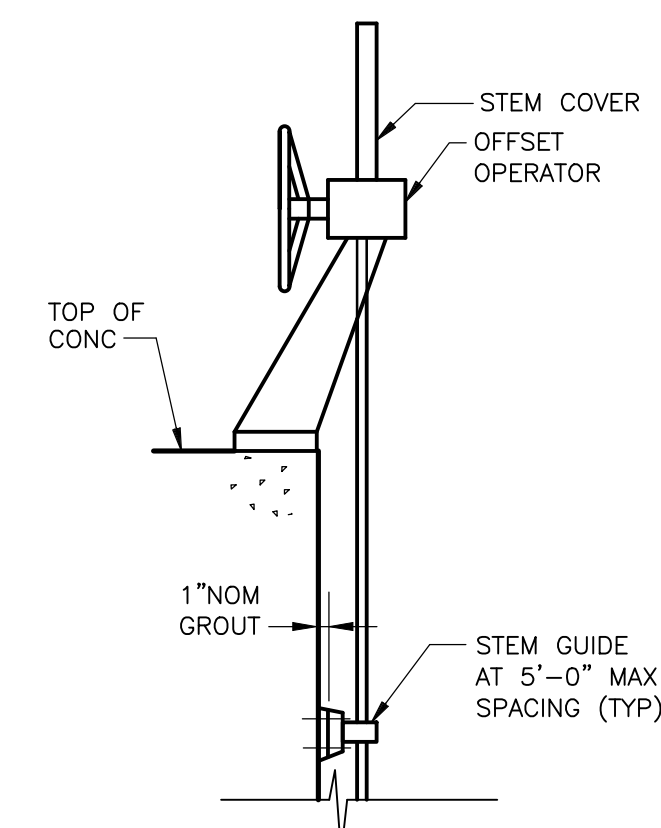
SLIDE GATE

SECTION
NON-SELF CONTAINED FACE MOUNTED



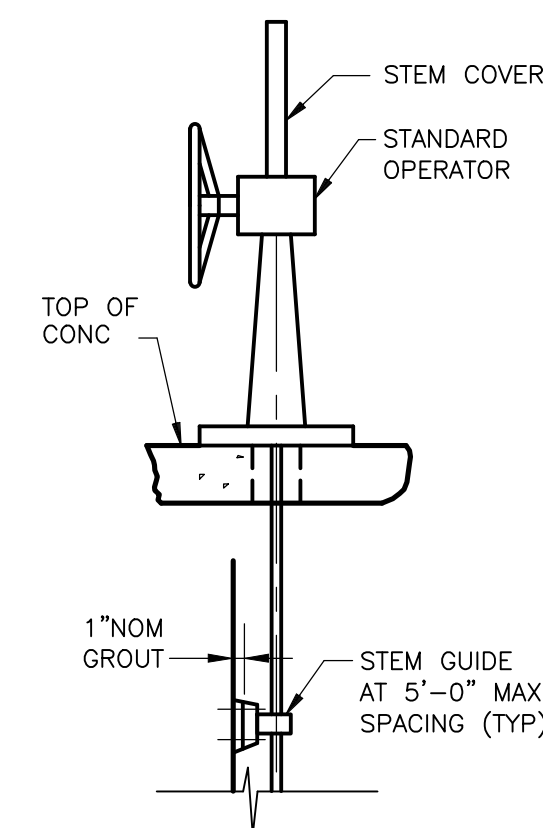
RECESSED OPERATOR

DETAIL B
NTS



OFFSET OPERATOR

DETAIL C
NTS

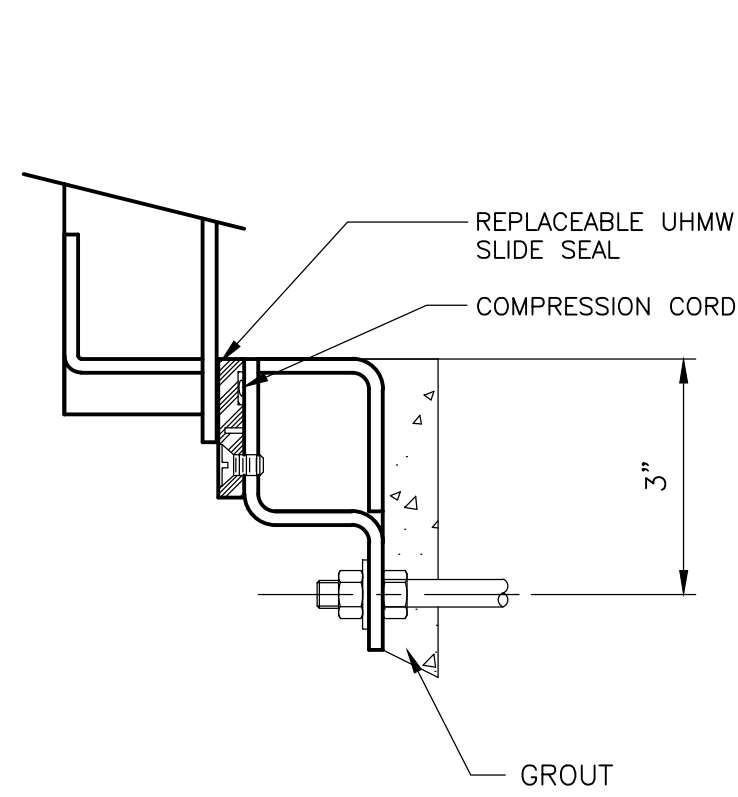


OVERHUNG OPERATOR

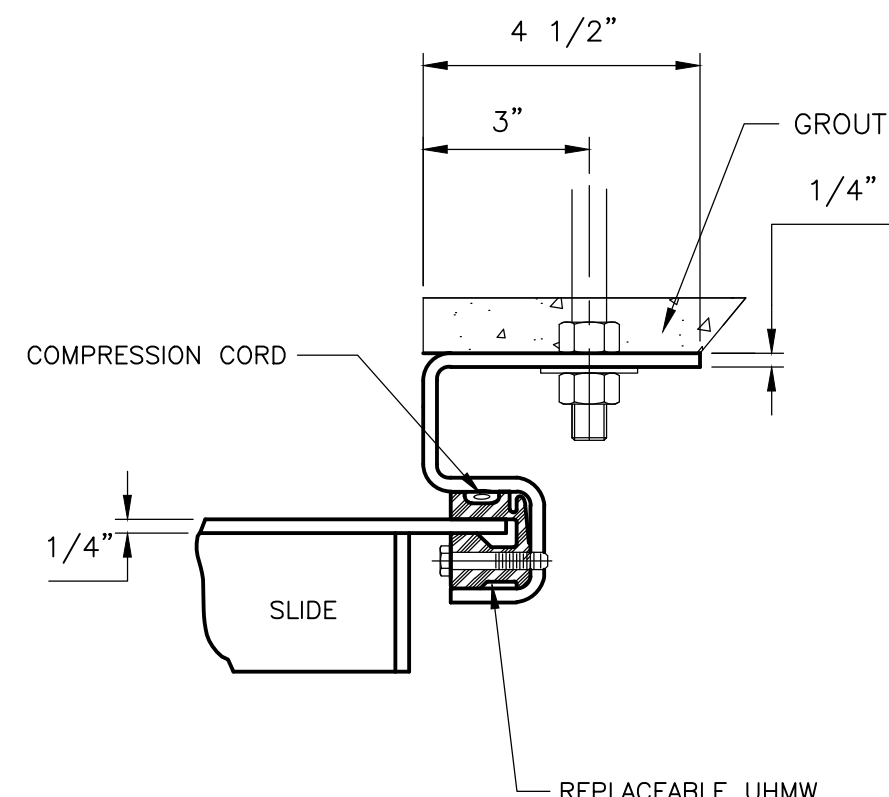
DETAIL D
NTS

NOTES:

- HANDWHEELS SHALL BE 18" MIN DIA. FOR HANDWHEEL POSITION, SEE MECHANICAL DRAWINGS.

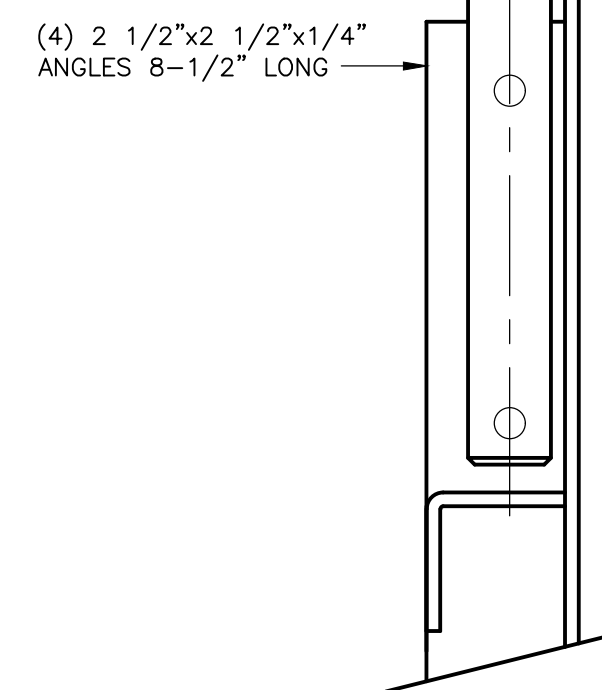


INVERT SEAL SECTION

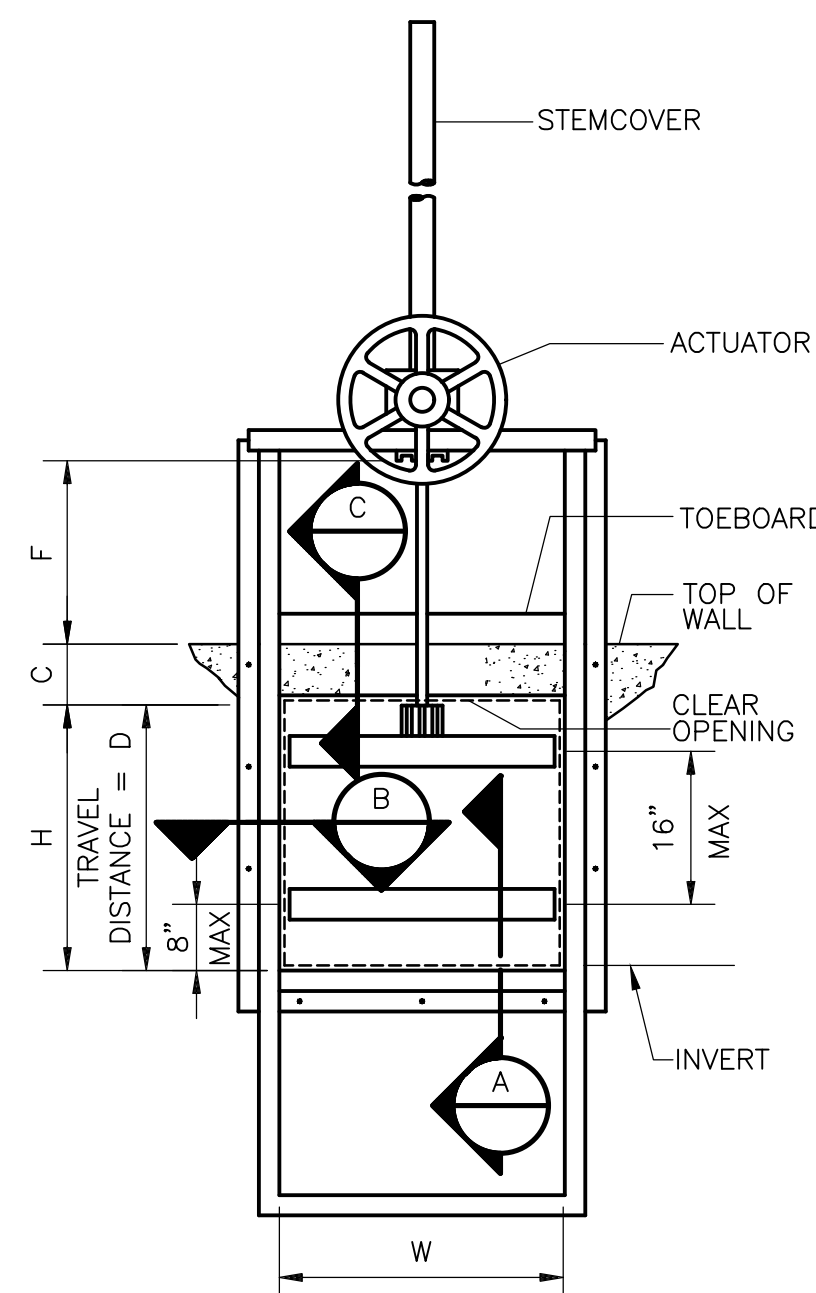


FACE MOUNTED GUIDE SECTION

DETAIL E
NTS



STEM CONNECTOR

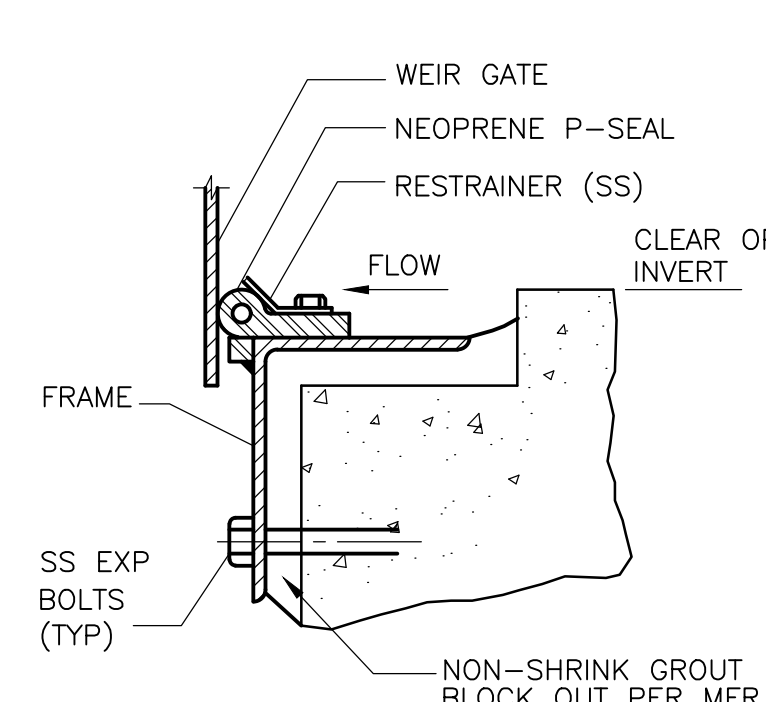


WEIR GATE ELEVATION

FACE MOUNTED WEIR GATE (UNSEATED) ELEVATION

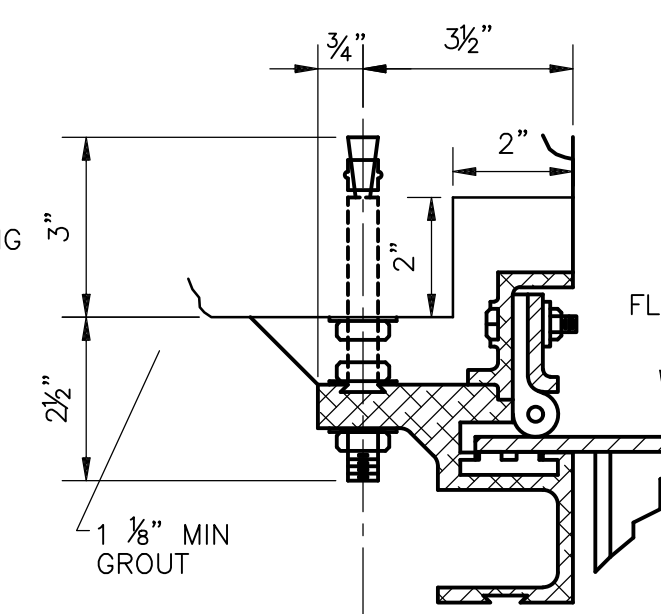
FACE MOUNTED WEIR GATE (UNSEATED)

DETAIL F
NTS



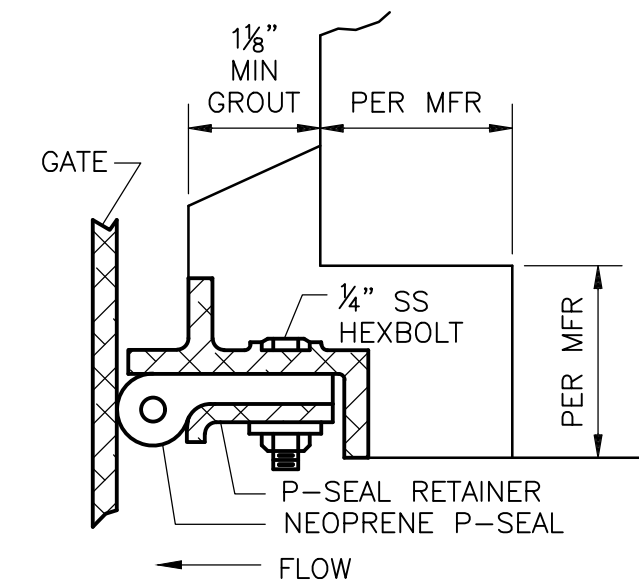
SECTION A

FACE MOUNTED WEIR GATE (UNSEATED) SECTION THROUGH INVERT



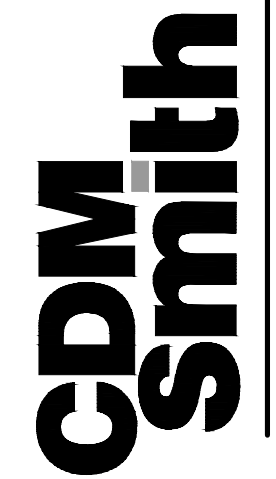
SECTION B

FACE MOUNTED WEIR GATE (UNSEATED) SECTION THROUGH INVERT



SECTION C

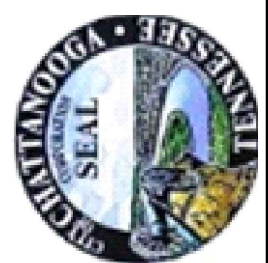
FACE MOUNTED WEIR GATE (UNSEATED) SECTION THROUGH GUIDE



CDM Smith Inc.
651 East 4th Street Suite 100
Chattanooga, TN 37403
Tel: (423) 771-4495



DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM



REV	DATE	REVISION DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE
THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
PROJECT NO: 129699-109746
DATE: NOVEMBER 2019
DISC. LEAD: DU
DESIGNER: VF
CHECKER: CF/MT

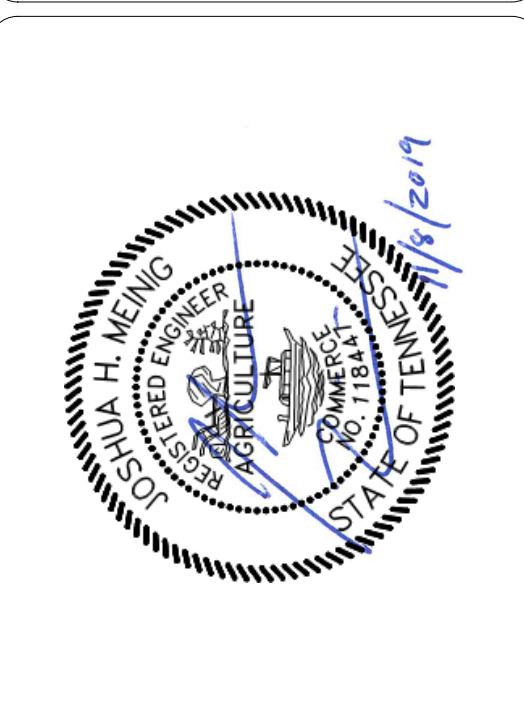
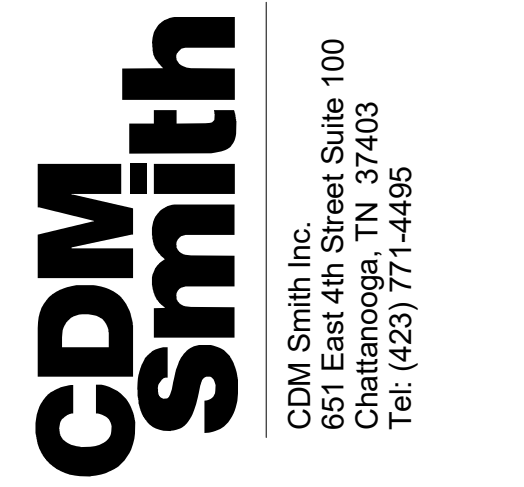
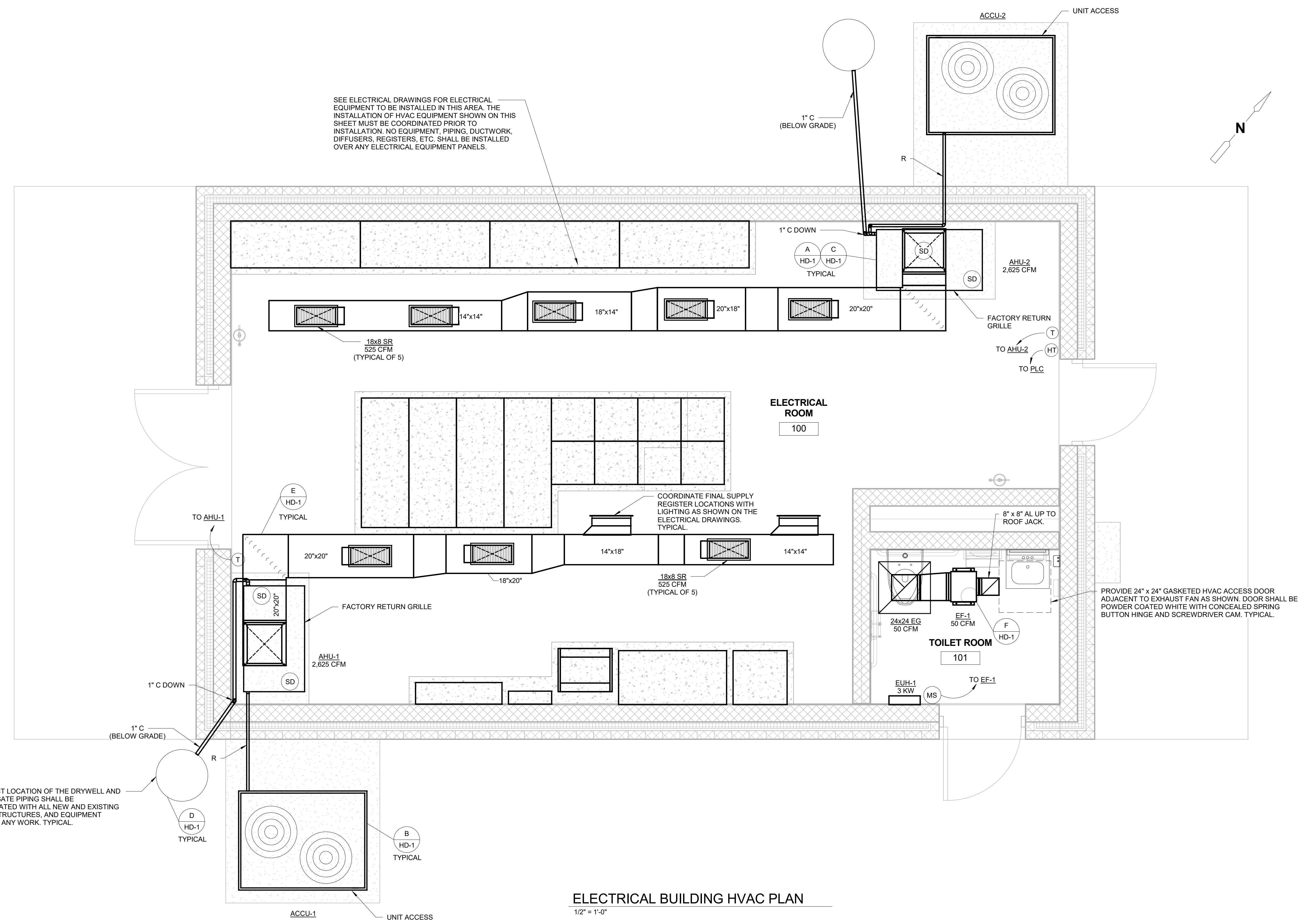
SHEET TITLE
MECHANICAL

SLIDE GATE DETAILS

SHEET MD-5

ISSUED FOR BID

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DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM



REV	DATE	REVISION DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE
 THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: JHM DESIGNER: JHM CHECKER: PAP

SHEET TITLE
**BUILDING MECHANICAL
 ELECTRICAL BUILDING
 HVAC PLAN**
 SHEET H-2

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 PLOT DATE: 8/16/2008
 BY: CULPAR
 LAST SAVED: 11/8/2019
 CREATED: 11/8/2019

EXHAUST FAN SCHEDULE															
ITEM NO.	AREA SERVED	CFM	S.P.	TYPE			H.P.	VOLT	PHASE	FAN RPM	MAX SONE VALUE	MANUFACTURER	MODEL NO.	REMARKS	CONTROL
				SET	WHEEL	DRIVE									
EF-1	TOILET ROOM	50 (NOMINAL)	0.5"	INLINE	CENT.	DIRECT	43 (WATTS)	115 V	1ø	900	4.5	GREENHECK	SP-A200	BDD, D, IH, MS, ODP, SS, VI, VSC	MOTION SENSOR

- BDD = BACKDRAFT DAMPER
- D = FACTORY DISCONNECT
- IH = INSULATED HOUSING
- MS = MOTION SENSOR (FIELD MOUNTED)
- ODP = OPEN DRIP PROOF MOTOR
- SS = STAINLESS STEEL FASTENERS AND SHAFT
- VI = NEOPRENE VIBRATION ISOLATORS AND MOUNTING BRACKETS
- VSC = VARIABLE SPEED CONTROL - UNIT MOUNTED

AIR COOLED CONDENSING UNIT SCHEDULE																			
ITEM NO.	AREA SERVED	MATCH WITH	SYSTEM CAPACITY		PIPING		CONDENSER				COMPRESSOR				REMARKS	MANUFACTURER MODEL	COP	HEATING CAP. @ 47 F	
			BTUH	SEER	SUCTION	LIQUID	OSA F	CFM	ROWS	FLA	NO.	TYPE	RLA	VOLT					PHASE
ACCU-1	ELECTRICAL ROOM	AHU-1	82.4	12.7 (IEER)	SEE NOTE B	SEE NOTE B	95	N/A	SEE NOTE B	0.8	1	DIGITAL SCROLL	12.7	460 V	3ø	SEE NOTES A, B, AND C	CARRIER 38AUQ08	3.30	87,000
ACCU-2	ELECTRICAL ROOM	AHU-2	82.4	12.7 (IEER)	SEE NOTE B	SEE NOTE B	95	N/A	SEE NOTE B	0.8	1	DIGITAL SCROLL	12.7	460 V	3ø	SEE NOTES A, B, AND C	CARRIER 38AUQ08	3.30	87,000

NOTE A: PROVIDE UNIT WITH THE FOLLOWING OPTIONS: TYPE 3A OR 3B CABINET COATING PER THE SPECIFICATIONS (EXTERIOR AND INTERIOR, INCLUDING COMPRESSOR, CONDENSER FAN, PIPING, ETC), BLACK EPOXY PRE-COATED COILS (EQUIVALENT TO TYPE 1A OR 1B COIL COATING PER THE SPECIFICATIONS), STAINLESS STEEL HARDWARE (EXTERIOR HARDWARE ONLY), NON-RUST BASE PAN, ANTI-SHORT CYCLE TIMER, CRANKCASE HEATER, HIGH PRESSURE CONTROL, LOW PRESSURE CONTROL, LIQUID LINE REFRIGERANT FILTER DRIER, LIQUID LINE SOLENOID VALVE, 0°F LOW AMBIENT CONTROL, PHASE LOSS/REVERSAL MONITOR, THERMOSTATIC EXPANSION VALVE, LOW VOLTAGE CIRCUIT PROTECTION, COMPRESSOR DISCHARGE LINE THERMOSTAT, HAIL GUARD, VIBRATION ISOLATORS, EVAPORATOR DEFROST CONTROL AND HOT GAS BYPASS.

NOTE B: FOR ALL UNITS, PROVIDE REFRIGERANT (R-410A) PIPING SIZES, COIL ROWS, AND FINS PER THE MANUFACTURER'S RECOMMENDATIONS.

NOTE C: BASIS OF DESIGN FOR AIR CONDITIONING SYSTEMS IS CARRIER OR APPROVED EQUAL.

DUCTWORK MATERIAL SCHEDULE	
SYMBOL	DESCRIPTION
---	GALVANIZED INSULATED DUCTWORK PER SMACNA STANDARDS.
AL	ALUMINUM DUCTWORK PER SMACNA STANDARDS.

CONTROL COMPONENT SCHEDULE	
SYMBOL	DESCRIPTION
T	HEAVY DUTY, NEMA 4X CORROSION RESISTANT LINE VOLTAGE THERMOSTAT (EXHAUST FAN) JOHNSON CONTROLS A19PRC-1C OR EQUAL WITH CLEAR LOCKING COVER. SET AT 85°F. REFER TO AIR HANDLING UNIT SCHEDULE AND THE SPECIFICATIONS FOR AIR CONDITIONING UNIT THERMOSTAT REQUIREMENTS.
SD	PHOTOELECTRIC TYPE SMOKE DETECTOR SYSTEM SENSOR INNOVAIR MODEL D4120 OR EQUAL. REFER TO THE SPECIFICATIONS.
HT	HEAVY DUTY, CORROSION RESISTANT LINE VOLTAGE THERMOSTAT/HIGH TEMPERATURE SWITCH JOHNSON CONTROLS A19BAF-1C OR EQUAL WITH CLEAR LOCKING COVER. SET AT 95°F.
R	SMOKE DETECTOR RESET STATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
MS	MOTION SENSOR PROVIDED BY SAME MANUFACTURER AS FAN. REFER TO THE FAN SCHEDULE.

AIR HANDLING UNIT SCHEDULE																								
ITEM NO.	AREA SERVED	COOLING COIL DATA				TOTAL MBH	SENSIBLE MBH	ROWS	FINS	FAN DATA					FILTERS		REMARKS	MANUFACTURER MODEL	AUX. ELECTRIC HEAT					
		ENTERING AIR		LEAVING AIR						CFM	OSA CFM	ESP	HP	DRIVE	VOLT	PHASE			TYPE	SIZE NO.	KW	VOLT	PHASE	NO. OF STAGES
		DB	WB	LDB	LWB																			
AHU-1	ELECTRICAL ROOM	80	62	59.6	37.8	82.4	76.2	SEE NOTE B	SEE NOTE B	2,625	0	0.5"	2.4	VFD	460 V	3ø	SEE NOTE A	SEE NOTE A	SEE NOTES A, B, AND C	CARRIER 40RUQ08	5	480 V	3ø	1
AHU-2	ELECTRICAL ROOM	80	62	59.6	37.8	82.4	76.2	SEE NOTE B	SEE NOTE B	2,625	0	0.5"	2.4	VFD	460 V	3ø	SEE NOTE A	SEE NOTE A	SEE NOTES A, B, AND C	CARRIER 40RUQ08	5	480 V	3ø	1

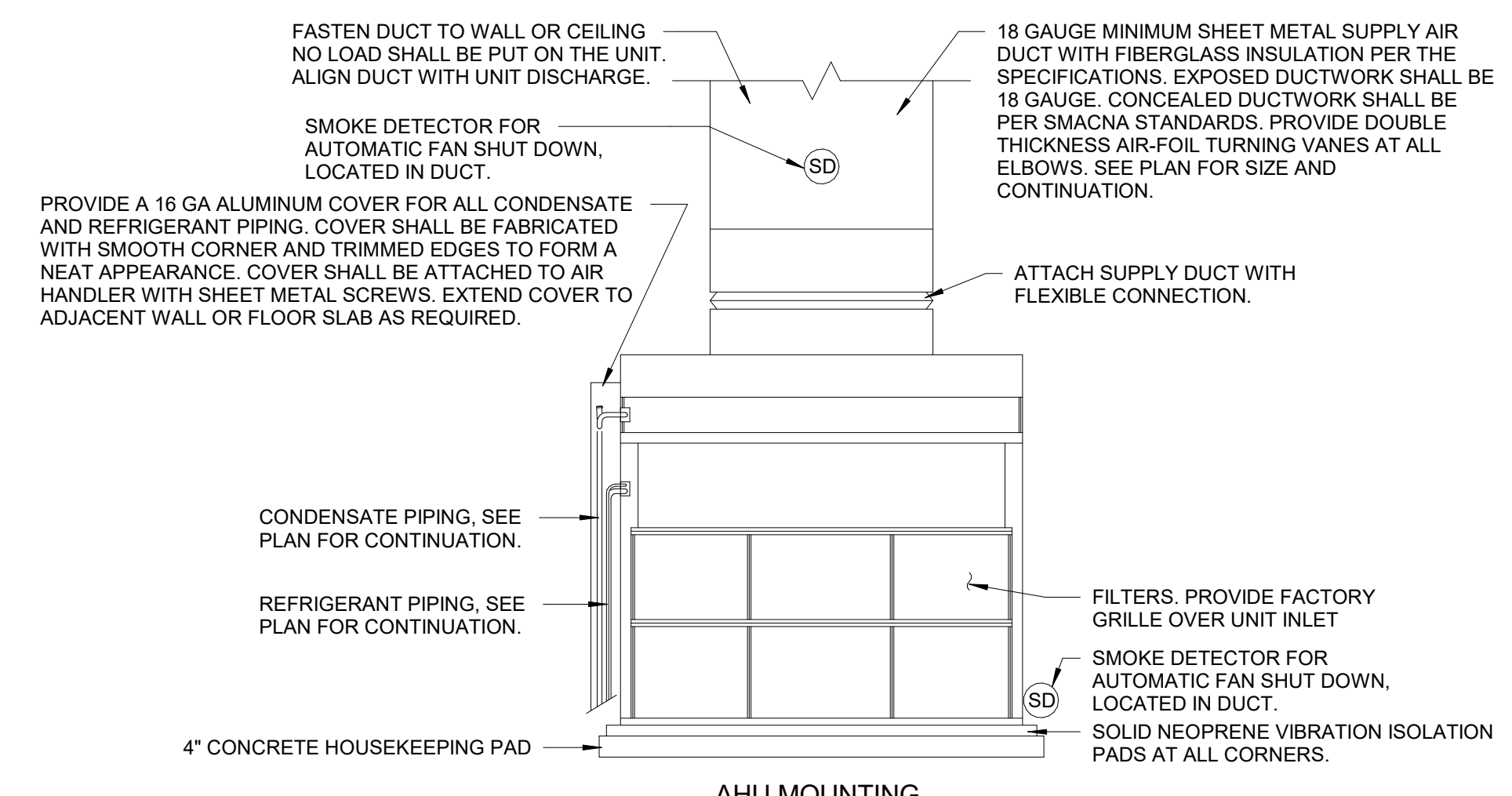
NOTE A: PROVIDE UNIT WITH THE FOLLOWING OPTIONS: TYPE 4A OR 4B COIL COATING PER THE SPECIFICATIONS, STAINLESS STEEL HARDWARE (EXTERNAL HARDWARE ONLY), 2" THICK FARR 30/30 FILTERS, CORROSION RESISTANT CONDENSATE PAN, NON-RUST BASE PAN, CORROSION RESISTANT COIL CASING, TIME DELAY RELAY, FACTORY ELECTRIC HEATER, 2-STAGE COOLING/2-STAGE HEATING THERMOSTAT, AND 2-SPEED VFD.

NOTE B: FOR ALL UNITS, PROVIDE SAFE-T-SWITCH MODEL SS2, OR EQUAL, CONDENSATE OVERFLOW SHUT-OFF SWITCH ON THE AUXILIARY DRAIN CONNECTIONS OF EACH AIR HANDLING UNIT. INSTALL PER THE MANUFACTURER'S INSTRUCTIONS. PROVIDE ALL NECESSARY RELAYS, FITTINGS, WIRING, CONTACTS, ETC. FOR ALL UNITS, PROVIDE REFRIGERANT (R-410A) PIPING SIZES, COIL ROWS, AND FINS PER THE MANUFACTURER'S RECOMMENDATIONS.

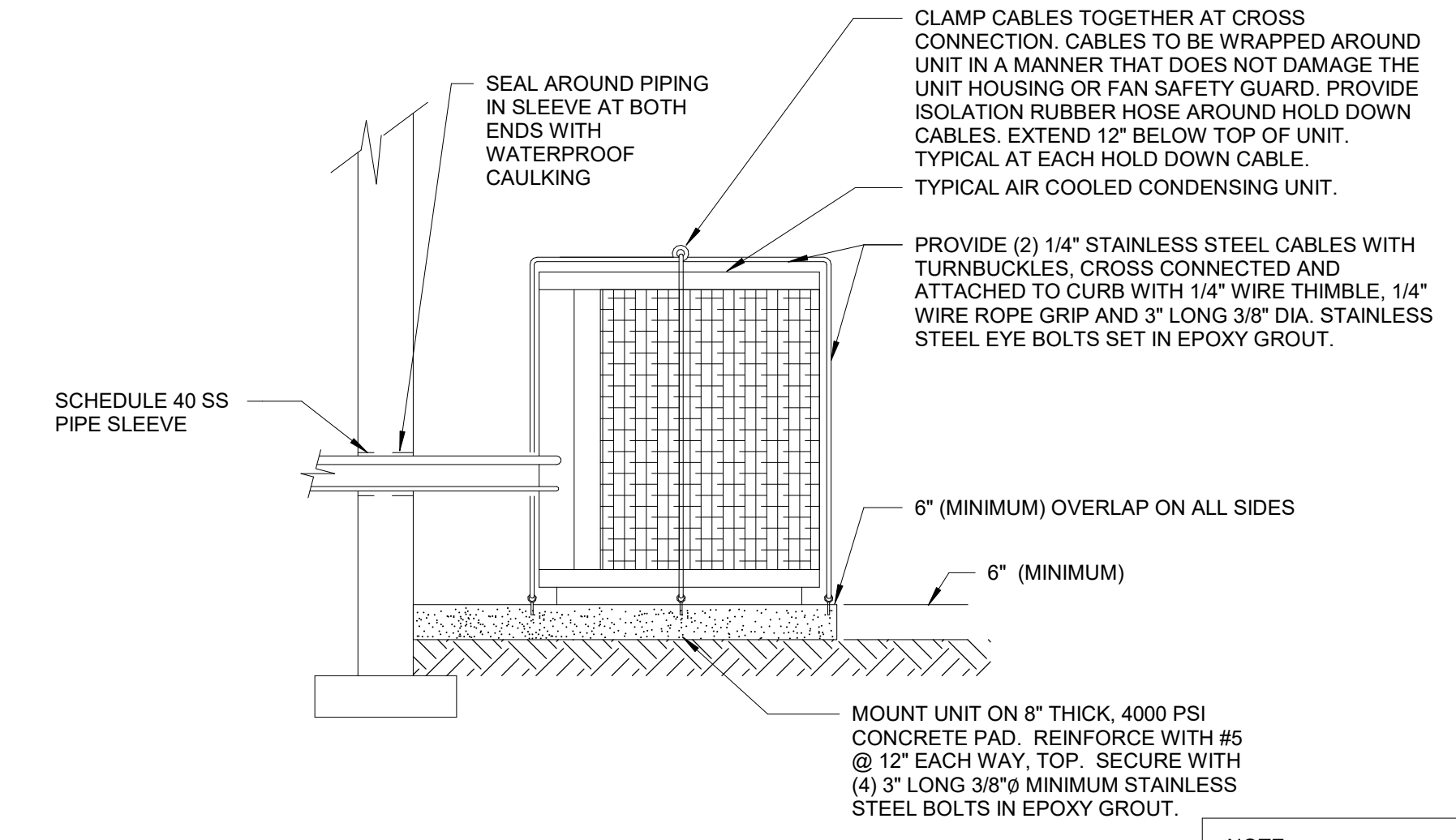
NOTE C: BASIS OF DESIGN FOR AIR CONDITIONING SYSTEMS IS CARRIER OR APPROVED EQUAL.

ELECTRIC UNIT HEATER SCHEDULE												
ITEM NO.	NO. REQ'D	AREA SERVED	KW	MBH	STAGE	CONTROL VOLTAGE	VOLT	PHASE	TOTAL AMPS	MOUNTING	MANUFACTURER MODEL	REMARKS
EUH-1	1	TOILET ROOM	3	10.2	1	N/A	208 V	1ø	14.8	WALL 3'-0" AFF	INDEECO 932U0400V	SEE NOTE A

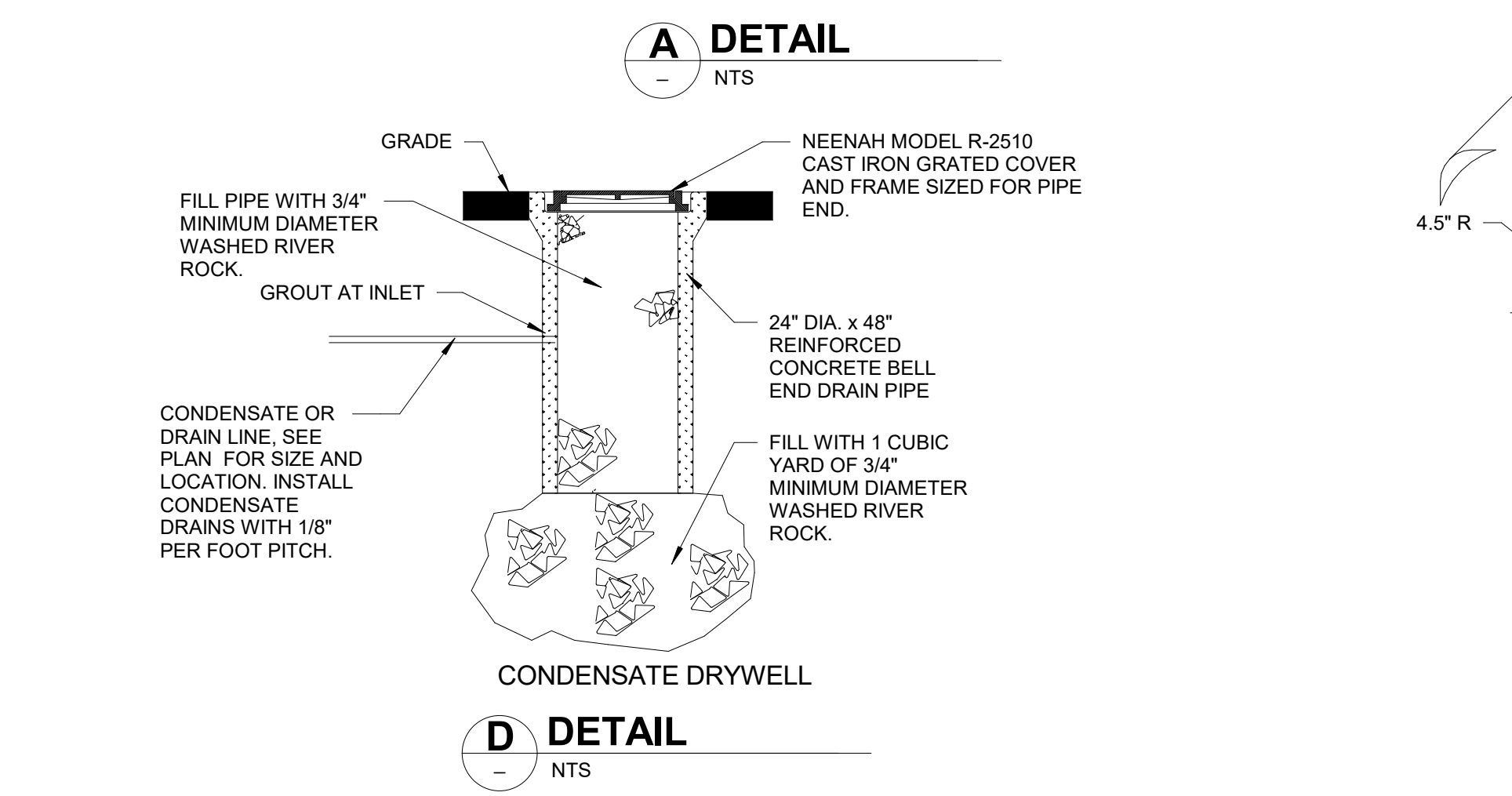
NOTE A: PROVIDE UNIT WITH BUILT-IN PILOT LIGHT, SELECTOR SWITCH, AND THERMOSTAT, NEMA 4X DISCONNECT SWITCH, CORROSION RESISTANT CONSTRUCTION WITH EPOXY COATED STAINLESS STEEL PARTS, AND MONEL FINNED TUBULAR ELEMENTS.



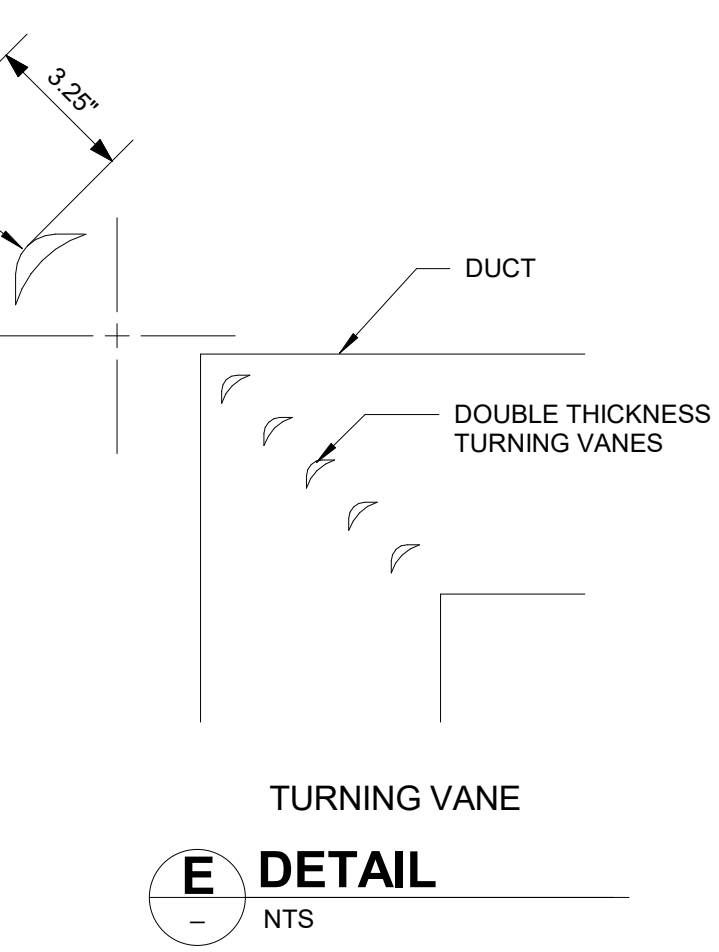
A DETAIL
- NTS



B DETAIL
- NTS

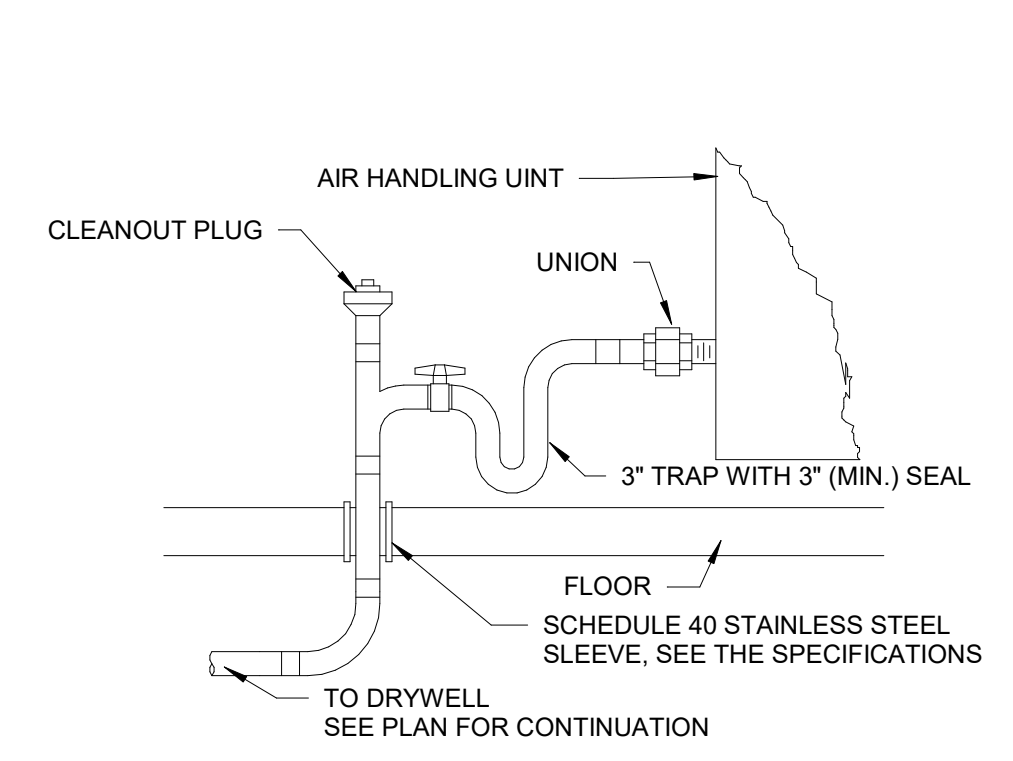


D DETAIL
- NTS

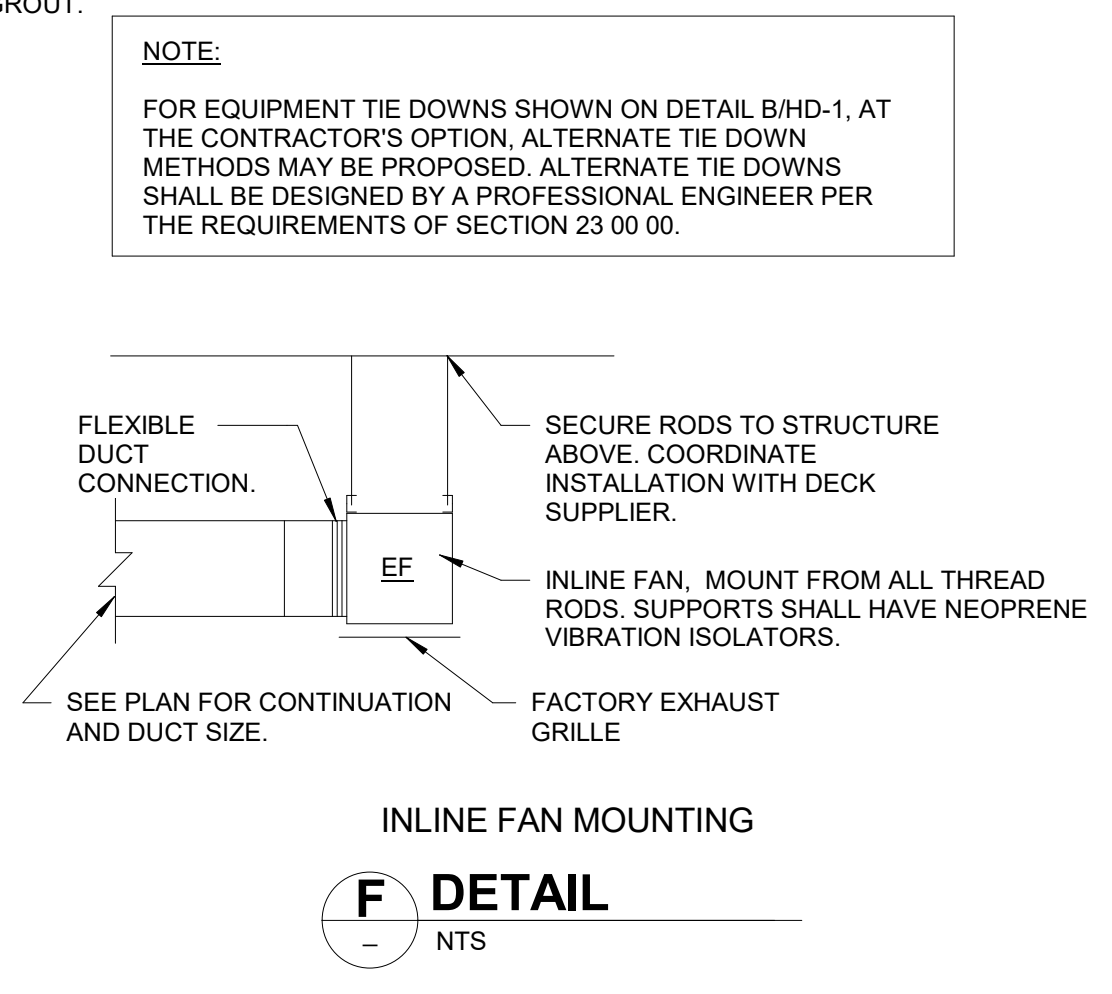


E DETAIL
- NTS

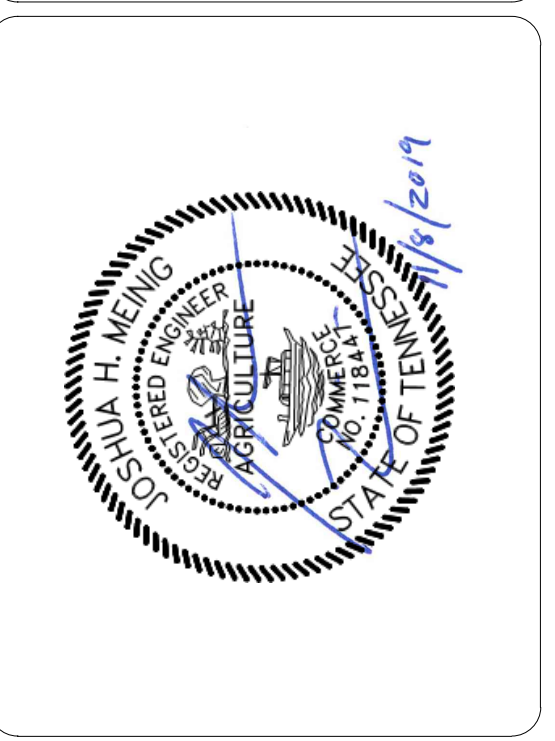
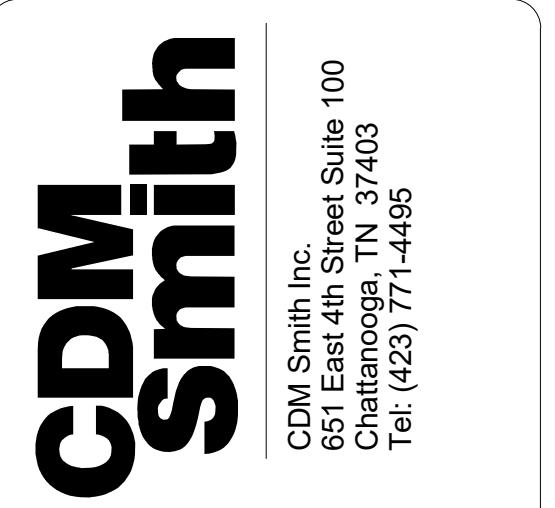
AIR DISTRIBUTION DEVICE SCHEDULE						
SYMBOL	DESCRIPTION	MODEL	FRAME TYPE	MATERIAL	FINISH	REMARKS
CD	CONTROL DAMPER	RUSKIN CD-50	CHANNEL	ALUMINUM	-	LOCKING HAND QUADRANT
EG	EXHAUST GRILLE HEAVY DUTY	METAL-AIRE HD-RH	PLASTER OR LAY-IN	ALUMINUM	OFF-WHITE ENAMEL	OPPOSED BLADE DAMPER
SR	SUPPLY REGISTER HIGH VELOCITY	METAL-AIRE V4000	PLASTER	ALUMINUM	OFF-WHITE ENAMEL	OPPOSED BLADE DAMPER



C DETAIL
- NTS



F DETAIL
- NTS



DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

REV	DATE	DESCRIPTION

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 THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: JHM
 DESIGNER: JHM
 CHECKER: PAP
 SHEET TITLE: BUILDING MECHANICAL ELECTRICAL BUILDING HVAC SCHEDULES AND DETAILS
 SHEET: HD-1

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 PLOT DATE: 8/16/2008
 BY: CULPAR
 LAST SAVED: 11/8/2019
 CREATED: 11/8/2019

PLUMBING ABBREVIATIONS	
@	AT
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AV	ACID VENT
AW	ACID WASTE
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BWV	BACKWATER VALVE
BLDG	BUILDING
CL	CENTERLINE
CA	COMPRESSED AIR
CD	CAVITY DRAIN
CI	CAST IRON
CO	CLEANOUT
CONT	CONTINUOUS, CONTINUE
CS	CUP SINK
CU. FT.	CUBIC FEET
CV	CHECK VALVE
CW	COLD WATER
DI	DUCTILE IRON
DN	DOWN
DW	DISHWASHER
DWG	DRAWING
DWV	DRAIN WASTE VENT
E	EMERGENCY WATER
(E)	EXISTING, TO REMAIN
ECO	EXTERIOR CLEANOUT
ED	EQUIPMENT DRAIN
EL	ELEVATION
ES	EMERGENCY SHOWER
ES/EW	EMERGENCY SHOWER AND EYEWASH
EWC	ELECTRIC WATER COOLER
EWST	EMERGENCY WATER STORAGE TANK
EWU	EYEWASH UNIT
FAS	FLOW ALARM SWITCH
FCO	FLUSH FLOOR CLEANOUT
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FHV&C	FIRE HOSE VALVE AND CABINET
FS	FLOW SWITCH
FV	FIRE VALVE
F/BS	FACE/BODY SPRAY
G	GAS
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HD	HUB DRAIN
HEV	HOSE END VALVE
HP	HANDICAPPED
HW	HOT WATER
HWR	HOT WATER RETURN
INV	INVERT
IOS	INSTALLED BY OTHER SECTION
IPS	IRON PIPE SIZE
KS	KITCHEN SINK
KU	KITCHEN UNIT
LAB	LABORATORY
LAV	LAVATORY

PLUMBING ABBREVIATIONS	
LBV	LOCKABLE BALL VALVE
LCW	LAB COLD WATER
LHW	LAB HOT WATER
LS	LAB SINK
MAX	MAXIMUM
MB	MOP BASIN
MIN	MINIMUM
MXV	MIXING VALVE
NO	NUMBER
OED	OPEN END OR OPEN EQUIPMENT DRAIN
ORD	OVERFLOW ROOF DRAIN
ORL	OVERFLOW RAIN LEADER
PD	PUMP DISCHARGE
PG	PRESSURE GAUGE
PH	POST HYDRANT
PHW	PROTECTED HOT WATER
PP	POLYPROPYLENE
PRW	PRESSURE WASTE
PSI	POUNDS PER SQUARE INCH
P&T	PRESSURE & TEMPERATURE
PVC	POLYVINYL CHLORIDE
PW	PROTECTED WATER
RD	ROOF DRAIN
RL	RAINLEADER
RM	ROOM
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
S	SOIL
SH	SHOWER
SHT	SHEET
SP	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL
SSK	SERVICE SINK
ST	SAND TRAP
TD	TRENCH DRAIN
THK	THICKNESS
TP	TRAP PRIMER
TW	TEPID WATER
TYP	TYPICAL
UR	URINAL
V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
VE	VACUUM EXHAUST
VTR	VENT THROUGH ROOF
W	WASTE
W/	WITH
WC	WATER CLOSET
WCO	WALL CLEANOUT
WF	WASH FOUNTAIN
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
WHS	WASH HOSE STATION
W&V	WASTE & VENT

NOTE:
 1. SYMBOLS AND ABBREVIATIONS SHOWN ON THE SHEET ARE GENERIC AND MAY NOT HAVE BEEN USED ON THE PROJECT.

FIXTURE SCHEDULE				
FIXTURE	DESCRIPTION	WASTE	HOT WATER	COLD WATER
HB	HOSE BIBB	-	-	3/4"
LAV-HP	LAVATORY, WALL HUNG - HANDICAPPED	1-1/4"	1/2"	1/2"
WC-HP	TOILET, FLUSH VALVE, WALL MOUNTED, WALL OUTLET - HANDICAPPED	3"	-	1-1/2"

PLUMBING SYMBOLS

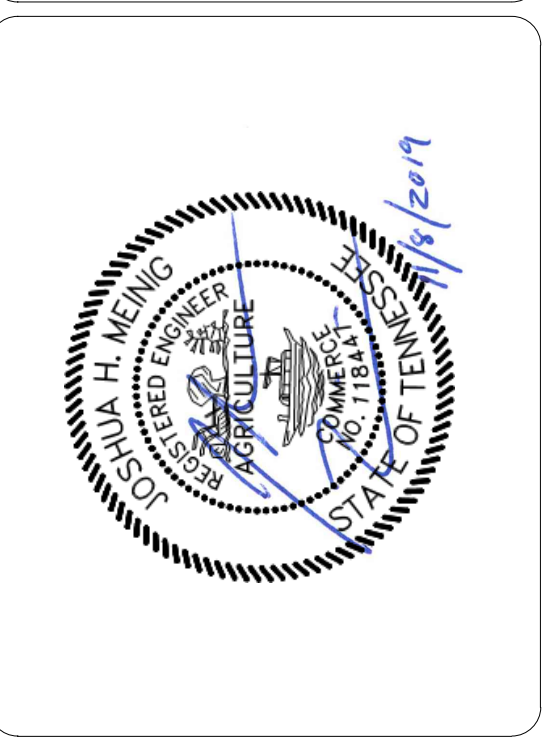
—	SOIL/SANITARY		VALVE
—	VENT		LOCKABLE BALL VALVE
---	COLD WATER (POTABLE)		CHECK VALVE
- - -	HOT WATER (POTABLE)		FLOW ALARM SWITCH
—	HOT WATER RETURN (POTABLE)		ES/EW - EMERGENCY SHOWER/EYEWASH / FP-ES/EW - "FREEZE PROOF" ES/EW
—A—	COMPRESSED AIR		WATER HAMMER ARRESTOR
—AV—	ACID VENT		CLEANOUTS
—AW—	ACID WASTE		FLUSH FLOOR CLEANOUT
—E—	EMERGENCY WATER		WATER PROOF SLEEVE
—ES—	EMERGENCY WATER (EMERGENCY SHOWER-LAB ONLY)		FLOOR DRAIN OR ROOF DRAIN
—FL—	FIRE LINE		PROTECTED WATER CONNECTION IDENTIFICATION NUMBER
—FS—	FIRE SERVICE WATER (POTABLE)		OPEN END DRAIN
—G—	GAS		EQUIPMENT PROVIDED UNDER PLUMBING SECTION
—LCW—	LABORATORY COLD WATER (NON-POTABLE)		EQUIPMENT PROVIDED BY OTHERS REQUIRING PLUMBING CONNECTIONS
—LHW—	LABORATORY HOT WATER (NON-POTABLE)		DN OR DROP "DN" DENOTES PIPES WHICH PENETRATE THR FLOOR BELOW. "DROP" DENOTES PIPES WHICH DO NOT.
—PD—	PUMP DISCHARGE		UP OR RISE "UP" DENOTES PIPES WHICH PENETRATE THR FLOOR ABOVE. "RISE" DENOTES PIPES WHICH DO NOT.
—PHW—	PROTECTED HOT WATER (NON-POTABLE)		POINT WHERE NEW CONSTRUCTION CONNECTS TO EXISTING CONSTRUCTION
—PRW—	PRESSURE WASTE		POINT BETWEEN EXISTING CONSTRUCTION TO REMAIN AND EXISTING CONSTRUCTION TO BE DEMOLISHED
—RL—	RAIN LEADER		MIXING VALVE
—PW—	PROTECTED WATER (NON-POTABLE)		
—SP—	SPRINKLER LINE		
—V—	VACUUM		
—VE—	VACUUM EXHAUST		

THE TERMS "DN", "DROP", "UP", & "RISE" ARE USED TO INDICATE THE VERTICAL DIRECTION IN WHICH A PIPE LINE CONTINUES FROM THE IMAGINARY PLANE OF VIEW. THE TERMS HAVE NO RELEVANCE TO THE DIRECTION OF THE FLOW WITHIN THE PIPE LINE.

TANKLESS ELECTRIC WATER HEATER SCHEDULE										
TAG	SERVES	MANUFACTURER	MODEL	FLOW RATE (GPM)	TEMP RISE @ 0.5 GPM	ELEMENT KW	VOLTS	PHASE	AMPS	REMARKS
EWH-1	TOILET ROOM	EEMAX OR EQUAL	EX 3208T OR EQUAL	2.0 (MAX)	41	3	208	1ø	15	SEE NOTE 1

NOTE 1: HEATER SHALL HAVE ABS-UL RATED COVER, ELEMENT SHALL BE REPLACEABLE CARTRIDGE INSERT, FACTORY RESET TO 110°F WITH 0.3 GPM TURN ON FOR SENSOR AND METERING FAUCETS. REFER TO SECTION 223000 FOR ADDITIONAL REQUIREMENTS.

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DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

REV	DATE	REVISION DESCRIPTION

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THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.

PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019

DISC. LEAD: JHM DESIGNER: JHM CHECKER: PAP

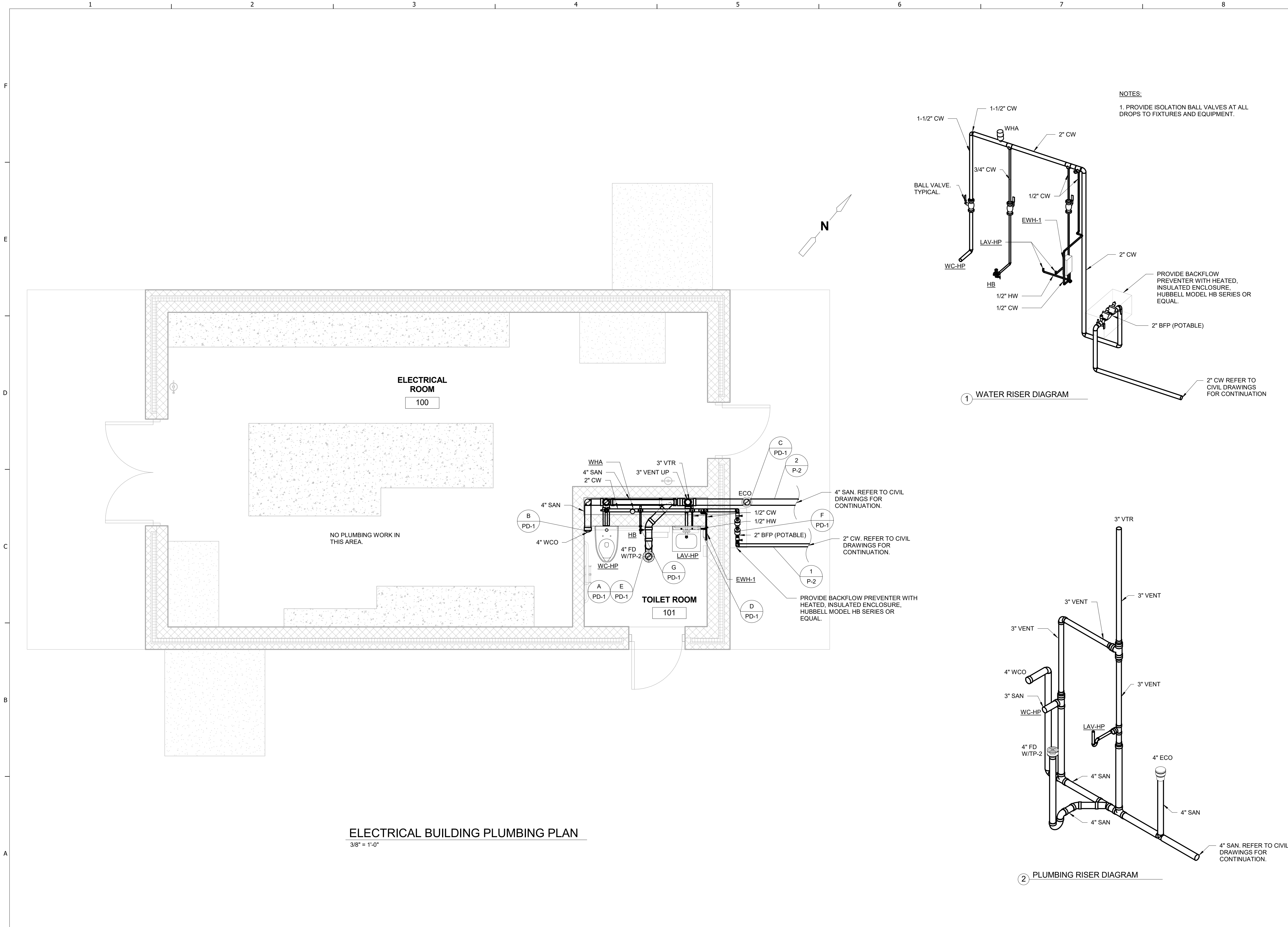
SHEET TITLE
 BUILDING MECHANICAL
 ELECTRICAL BUILDING
 PLUMBING SYMBOLS AND ABBREVIATIONS

SHEET P-1

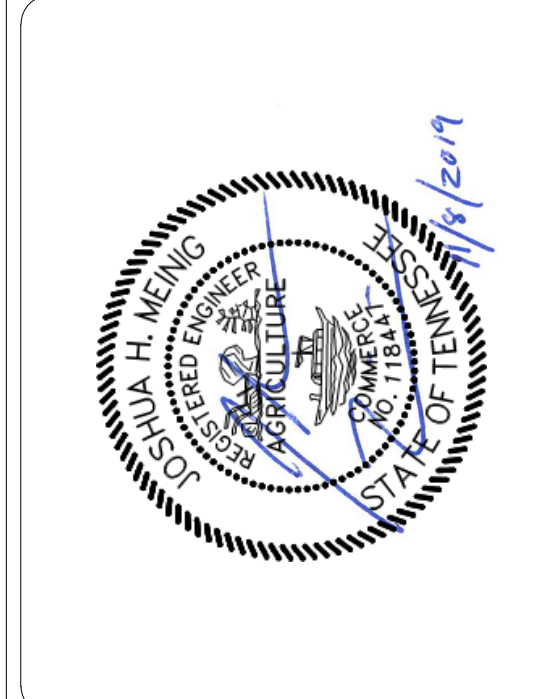
ISSUED FOR BID

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CREATED: 11/8/2019 LAST SAVED: 11/8/2019 BY: CULPAR PLOT DATE: 8/16/2008



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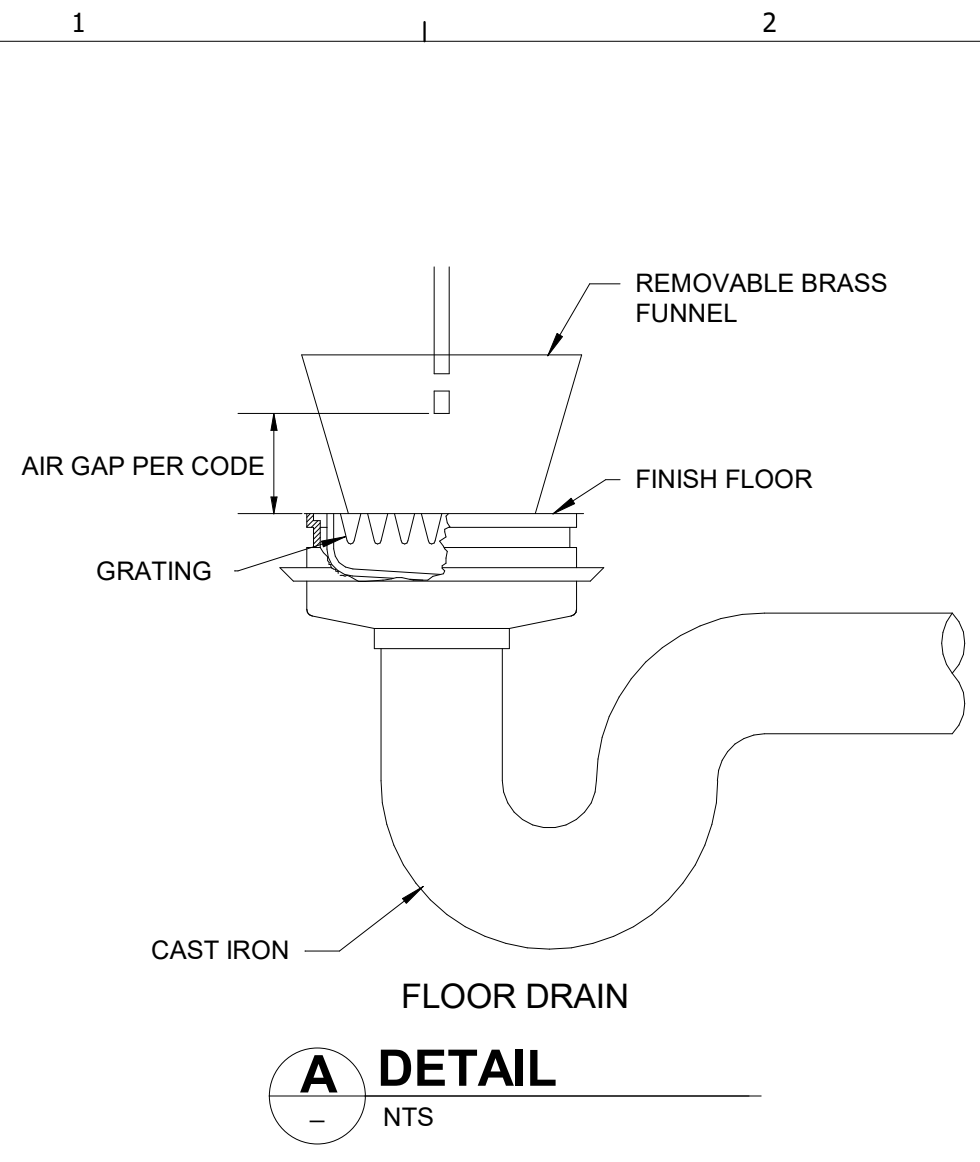
DISC. LEAD: JHM	DESIGNER: JHM	CHECKER: PAP
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SHEET TITLE
 BUILDING MECHANICAL
 ELECTRICAL BUILDING
 PLUMBING PLAN

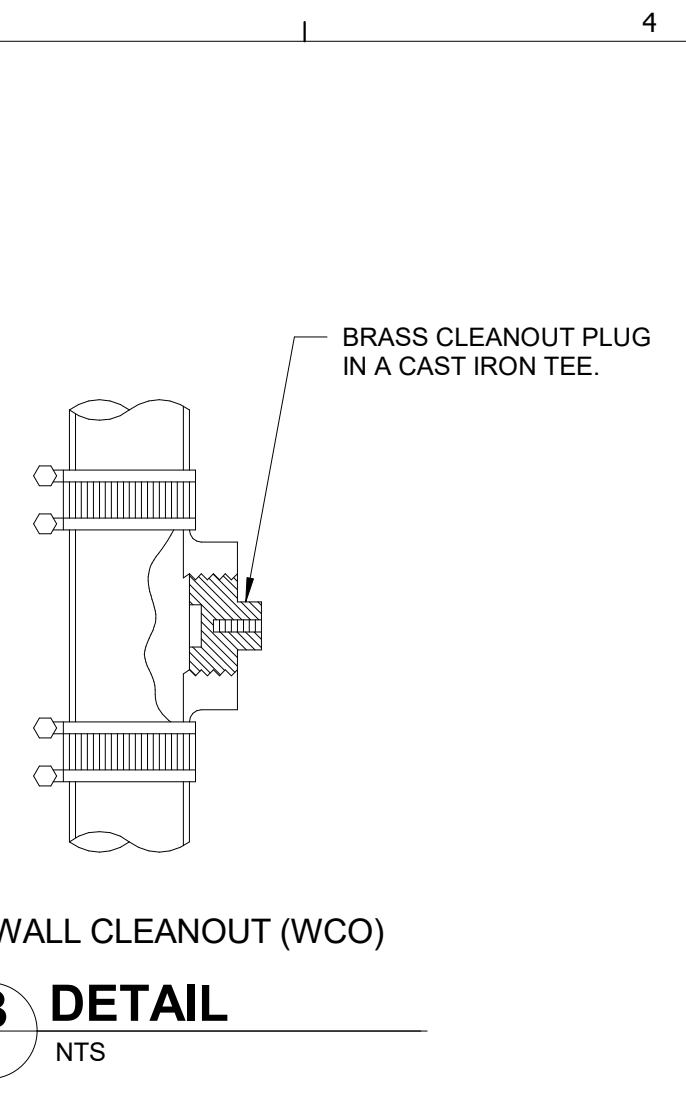
SHEET p-2

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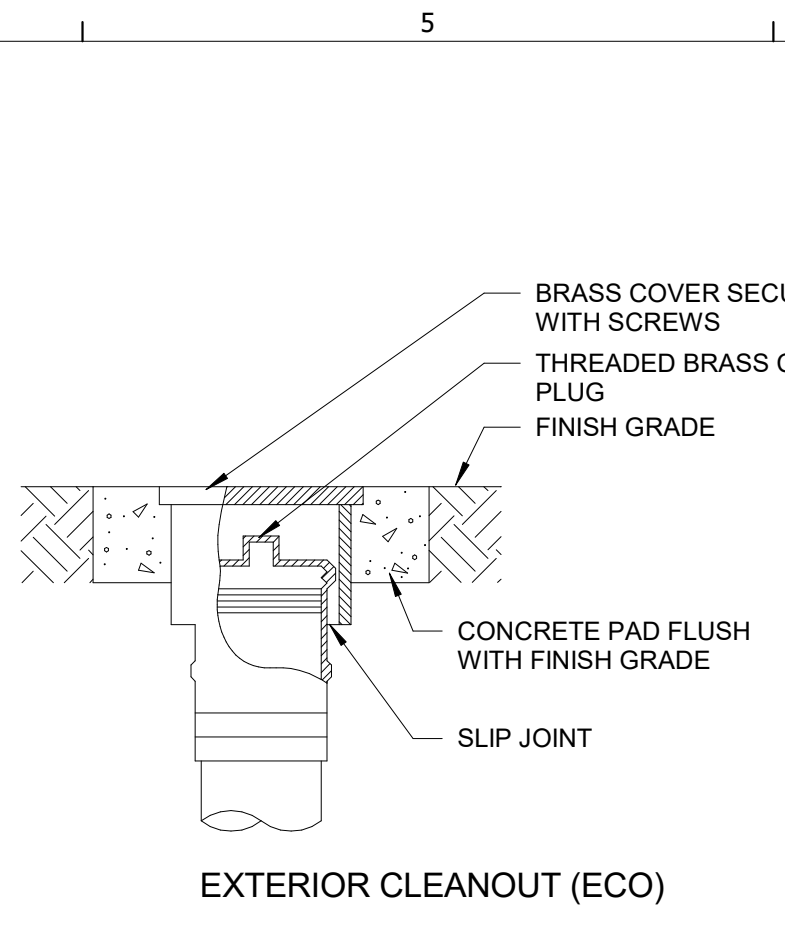
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 PLOT DATE: 8/16/2008
 BY: CULPAR
 LAST SAVED: 11/8/2019
 CREATED: 11/8/2019



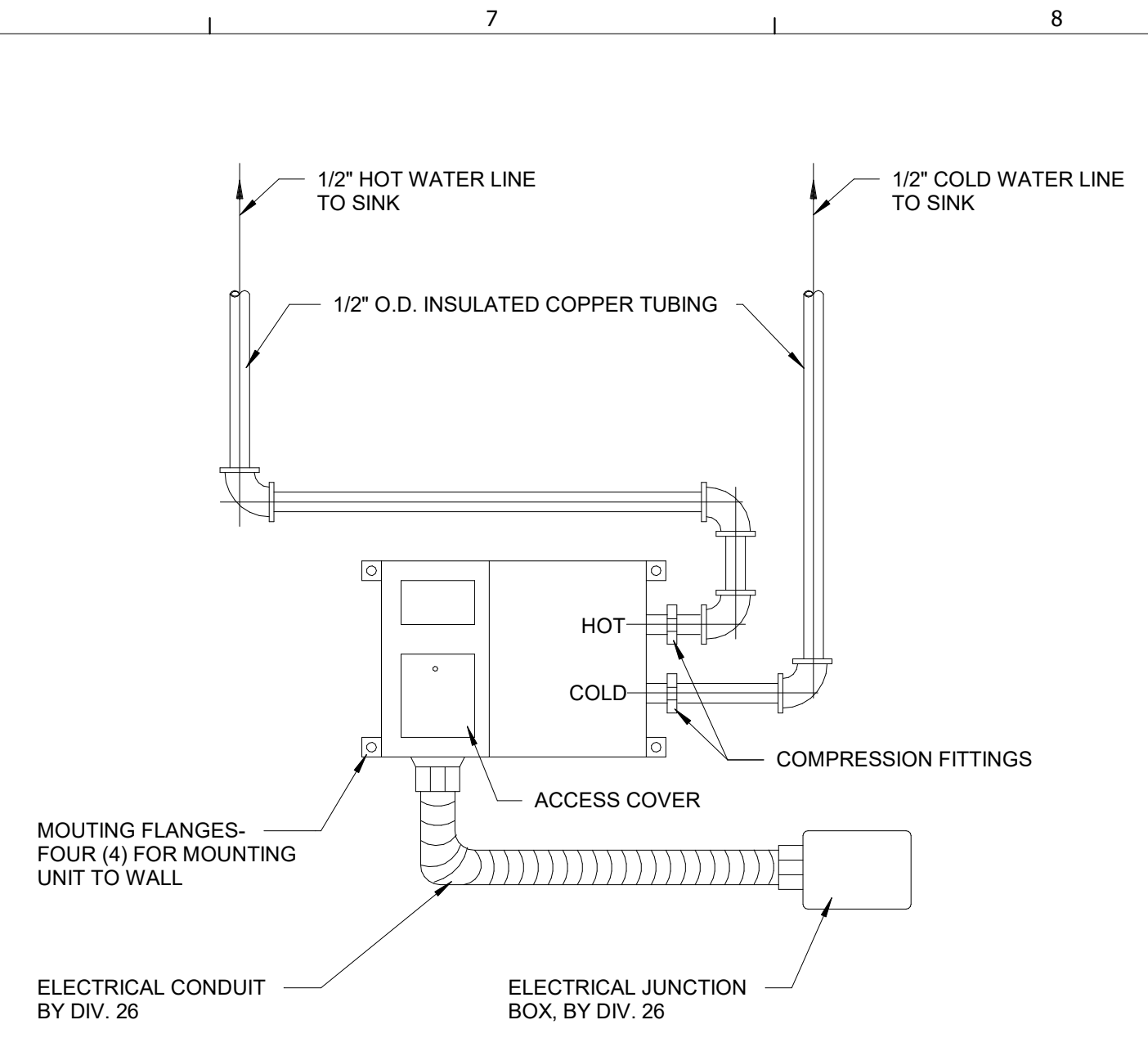
A DETAIL
- NTS



B DETAIL
- NTS

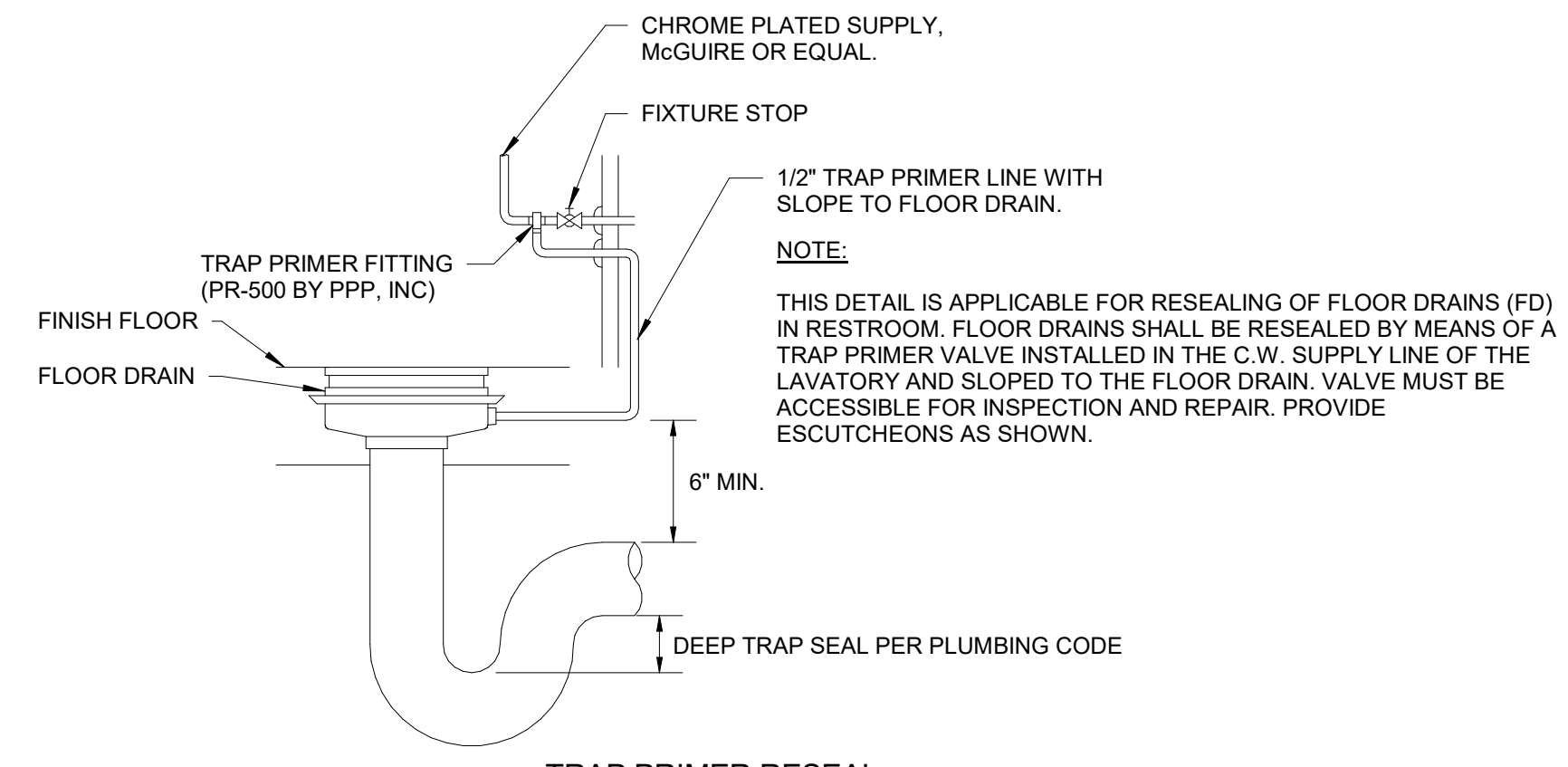


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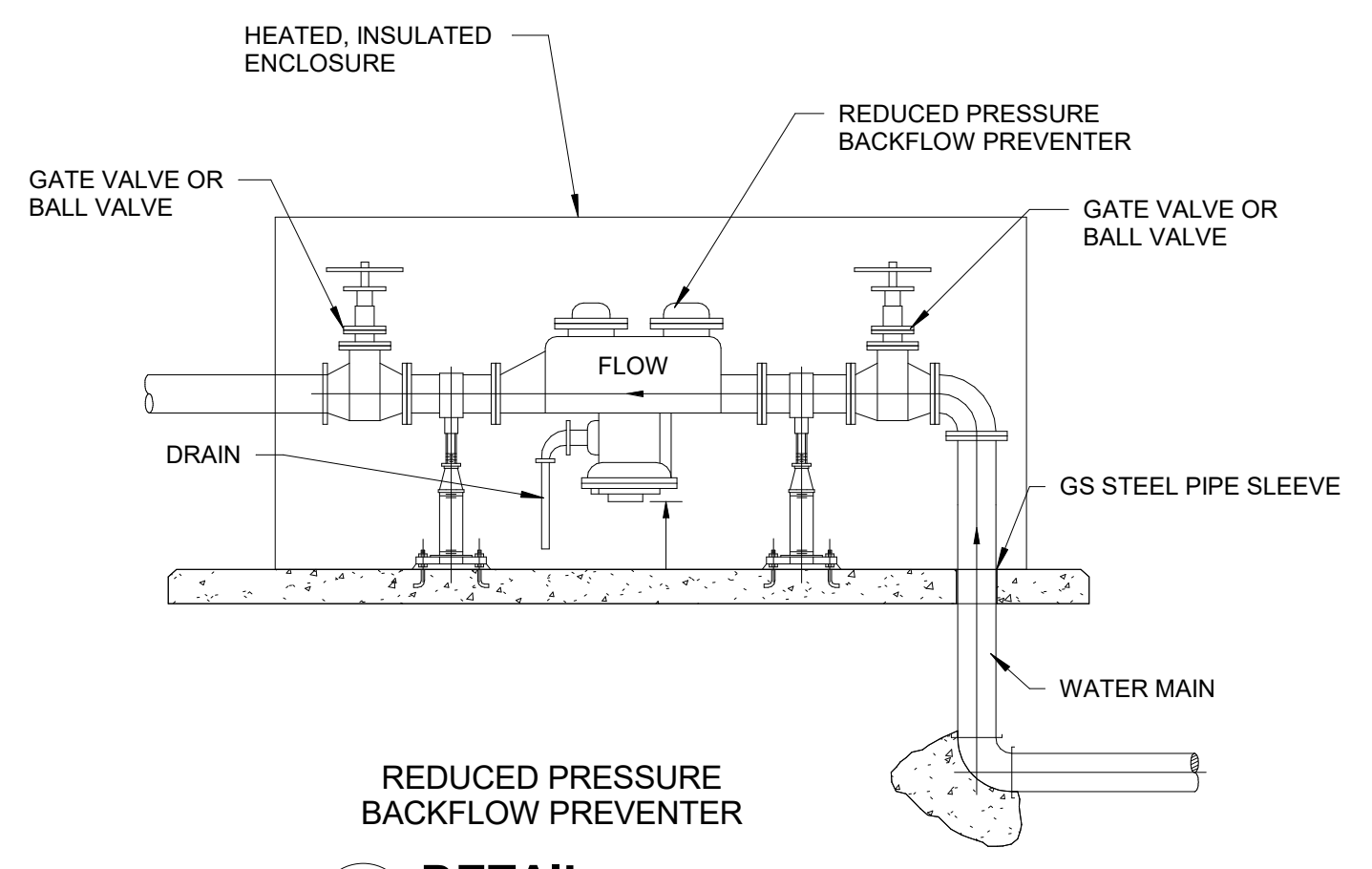


NOTE:
TANKLESS WATER HEATER MOUNTED TO WALL BELOW SINK.

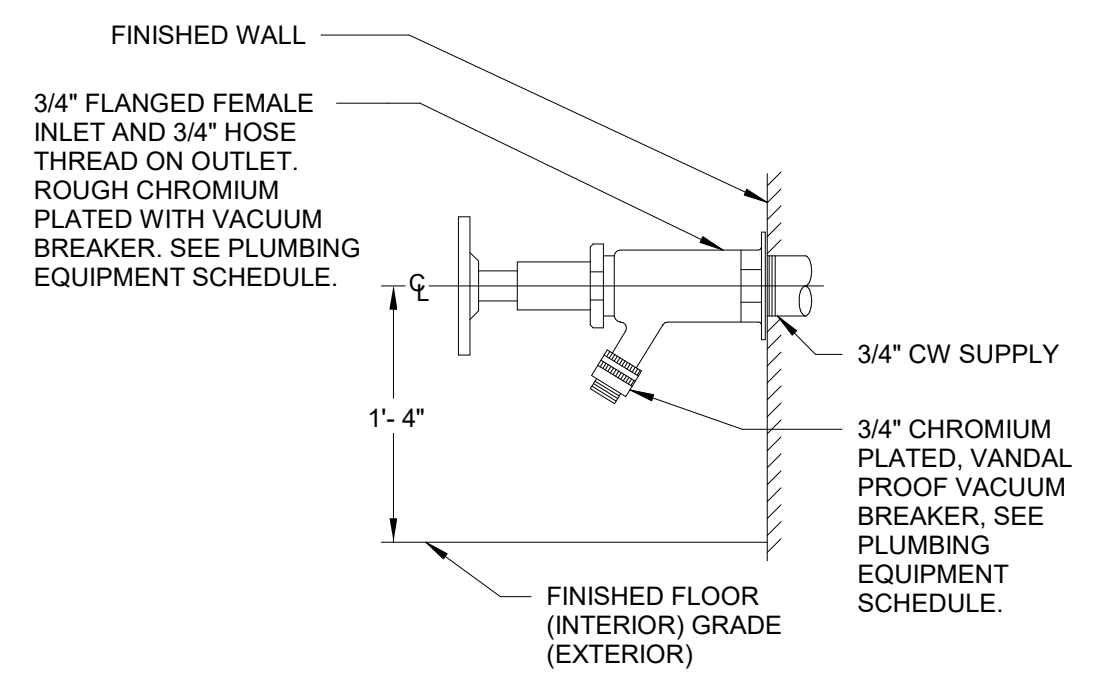
D DETAIL
- NTS



E DETAIL
- NTS



F DETAIL
- NTS



G DETAIL
- NTS

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**DUPONT PUMP STATION AND
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 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

REV	DATE	REVISION DESCRIPTION

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PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019

DISC. LEAD: JHM	DESIGNER: JHM	CHECKER: PAP
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SHEET TITLE
**BUILDING MECHANICAL
 ELECTRICAL BUILDING
 PLUMBING DETAILS**

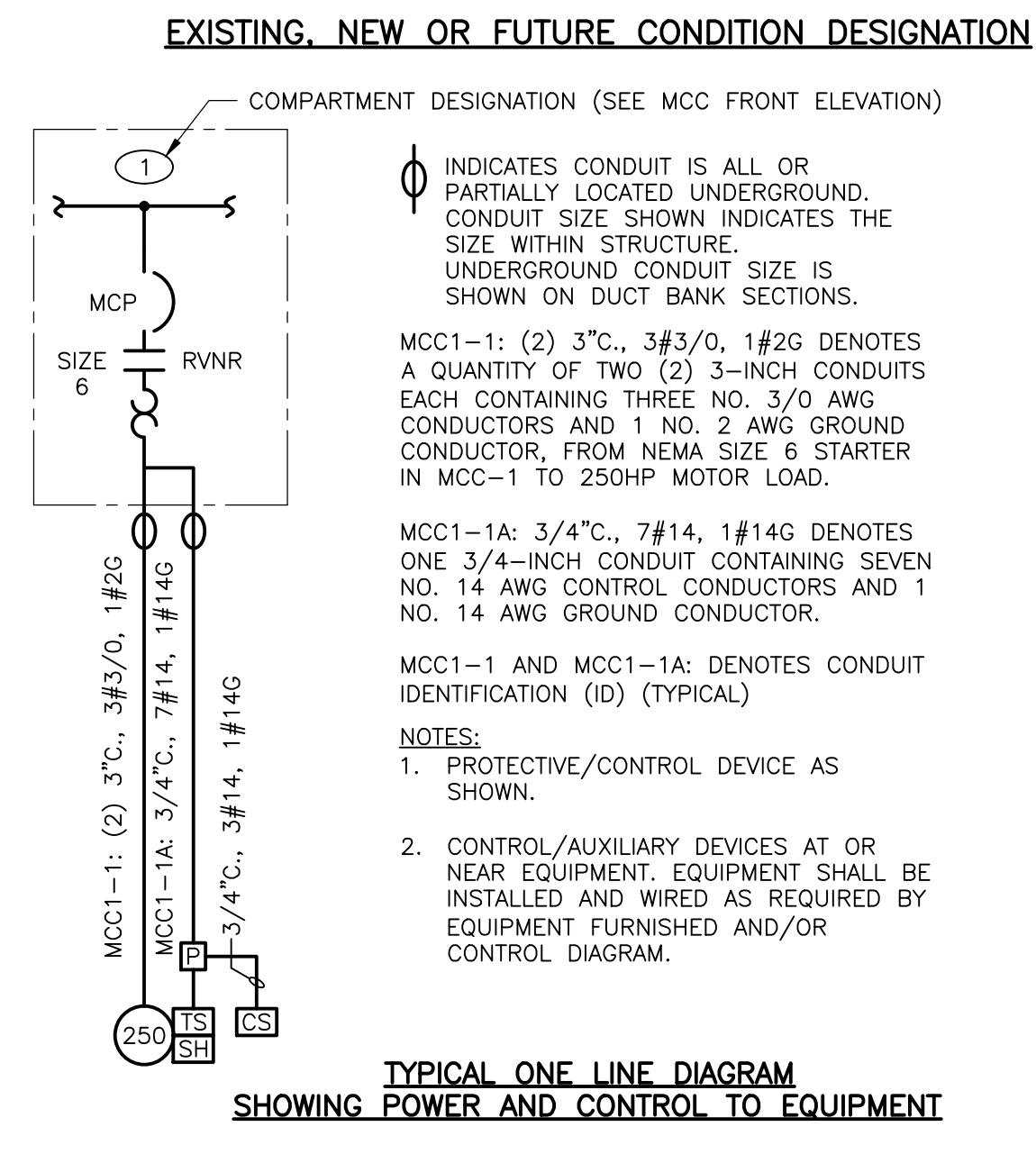
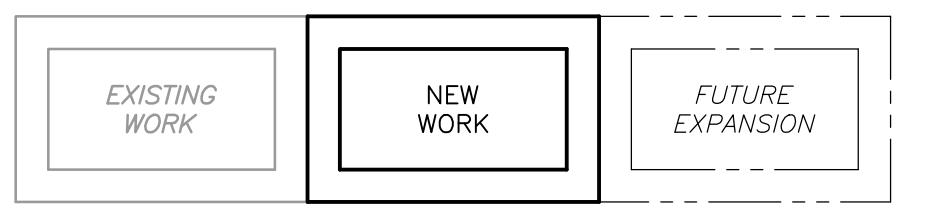
SHEET PD-1

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
	—	MEDIUM VOLTAGE DRAWOUT TYPE POWER CIRCUIT BREAKER CS=CONTROL SWITCH
	CB	LOW VOLTAGE AIR OR MOLDED CASE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED.
	⊠	COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER, FULL VOLTAGE NON-REVERSING UNLESS OTHERWISE NOTED: * FVR - FULL VOLTAGE REVERSING RVNR - REDUCED VOLTAGE NON-REVERSING RVAT - REDUCED VOLTAGE AUTOTRANSFORMER RVSS - REDUCED VOLTAGE SOLID STATE 251W - TWO SPEED, ONE WINDING 252W - TWO SPEED, TWO WINDING (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
	□	NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE * AMPERE RATING NOTED IF OTHER THAN 30A (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
	F	FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE * AMPERE RATING AND FUSE SIZE AS NOTED * AMPERE RATING NOTED IF OTHER THAN 30A FUSE RATING (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
	P	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD HEATER, 1 POLE UNLESS OTHERWISE NOTED "P" INDICATES WITH PILOT LIGHT "2" INDICATES TWO POLE (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
	—	DRAWOUT TYPE EQUIPMENT OR DEVICE
	—	MEDIUM VOLTAGE CABLE TERMINATION
	—	MEDIUM VOLTAGE AIR INTERRUPTER SWITCH
	—	MEDIUM VOLTAGE FUSED AIR INTERRUPTER SWITCH * FUSE RATING
	—	MEDIUM VOLTAGE FUSED MOTOR CONTROLLER
	T	TRANSFORMER, RATINGS AND CONNECTIONS AS NOTED. UNLESS OTHERWISE NOTED ON THE SINGLE LINE DIAGRAMS, ALL DRY TYPE TRANSFORMERS SERVICING ADMINISTRATIVE AND LABORATORY SPACES SHALL HAVE A K FACTOR OF 4. ISOLATION TRANSFORMERS SHALL HAVE A K-20 RATING
	—	CURRENT TRANSFORMER * QUANTITY A = PRIMARY AMPERES
	—	POTENTIAL TRANSFORMER * QUANTITY V = PRIMARY VOLTAGE
	G	GENERATOR, RATINGS AND CONNECTIONS AS NOTED
	—	AUTOMATIC OR MANUAL TRANSFER SWITCH NO.1 (ATS-1), (MTS-1) "N" INDICATES NORMAL OR PREFERRED SOURCE "S" INDICATES STANDBY OR ALTERNATE SOURCE 100A INDICATES CONTINUOUS CURRENT RATING
	—	VARIABLE SPEED DRIVE CONTROLLER * D.C. = D.C. DRIVE CONTROLLER SCR = SILICON CONTROLLED RECTIFIER VFD = VARIABLE FREQUENCY DRIVE
	#KW	UNIT HEATER - ELECTRIC HEATING COIL AND FAN # - RATING
	U	UNIT HEATER - GAS FIRED, STEAM OR WATER HEATING COIL AND FAN
	M	MOTOR, NUMERAL INDICATES HORSEPOWER
	VS	VOLTMETER WITH SWITCH, 3 PHASE
	AS	AMMETER WITH SWITCH, 3 PHASE
	MLO	MAIN LUGS ONLY

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
	—	METER * WM - WATTMETER WHM - WATTHOUR METER WHDM - WATTHOUR DEMAND METER WHDR - WATTHOUR DEMAND RECORDER PF - POWER FACTOR METER DMU - DIGITAL METERING UNIT
	—	TRANSDUCER AX - CURRENT TRANSDUCER WX - WATT TRANSDUCER WHX - WATTHOUR TRANSDUCER
	—	RELAY, NO. AS INDICATED 25 - SYNCHRONISM CHECK RELAY 27 - UNDERVOLTAGE RELAY 32 - DIRECTIONAL POWER RELAY 38 - BEARING PROTECTIVE DEVICE 40 - LOSS OF EXCITATION RELAY 42 - RUNNING CONTACTOR/PILOT RELAY 46 - REVERSE PHASE/PHASE BALANCE/CURRENT RELAY 47 - PHASE SEQUENCE VOLTAGE RELAY 49 - MACHINE OR TRANSFORMER THERMAL RELAY 50/51 - INSTANTANEOUS/TIME OVERCURRENT RELAY 50G - INSTANTANEOUS GROUND 51 - TIME OVERCURRENT RELAY 51G - TIME OVERCURRENT RELAY, GROUNDING RESISTOR TYPE 51N - TIME OVERCURRENT RELAY, RESIDUAL TYPE 51V - TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT 51X - AUXILIARY RELAY (TRIPS CB AND ALARMS) 59 - OVERVOLTAGE RELAY 60 - NEGATIVE SEQUENCE VOLTAGE RELAY 62 - TIME DELAY RELAY 63 - OVERPRESSURE RELAY 64 - GENERATOR FIELD GROUND RELAY 67 - AC DIRECTIONAL OVERCURRENT RELAY 74 - ALARM LATCHING RELAY 83 - AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY 86 - LOCKING-OUT RELAY 87 - DIFFERENTIAL PROTECTIVE RELAY B - SUFFIX INDICATES "BUS" G - SUFFIX INDICATES "GENERATOR" GF - GROUND FAULT ST - SHUNT TRIP T - SUFFIX INDICATES "TRANSFORMER" X - SUFFIX INDICATES "AUXILIARY"
	—	SPECIAL CAPACITOR * SC - SURGE CAPACITOR PF - POWER FACTOR CORRECTION CAPACITOR
	—	TUNED POWER FACTOR CORRECTION CAPACITOR
	—	PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED
	—	PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN
	ES	EMERGENCY STOP PUSHBUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)
	PBL	START-STOP PUSHBUTTON CONTROL STATION (MOMENTARY CONTACT) WITH LOCKOUT DEVICE ON STOP
	PBM	START-STOP PUSHBUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP
	S/S	OFF/ON SELECTOR SWITCH
	LR	LOCAL/REMOTE SELECTOR SWITCH
	—	3 POSITION SELECTOR SWITCH, MAINTAINED CONTACT O-OPEN X-CLOSED POSITION TOP CONTACT MIDDLE CONTACT BOTTOM CONTACT A X O O B O X O C O O X NAMEPLATE (A/B/C) HOA - HAND/OFF/AUTO HOR - HAND/OFF/REMOTE LOR - LOCAL/OFF/REMOTE RSL - RAISE/STOP/LOWER TOA - TEST/OFF/AUTO
	GD/VF	GAS DETECTOR / VENTILATION FAILURE ALARM # INDICATES TYPE OF UNIT 1=MASTER, 2=REMOTE
	—	MOTOR STARTER COIL, NUMBER AS INDICATED TO DENOTE INTERLOCKING ONLY
	—	CONTROL RELAY COIL, NUMBER AS INDICATED

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
	—	PILOT LIGHT, COLOR AS NOTED * R - RED G - GREEN B - BLUE W - WHITE A - AMBER
	—	PILOT LIGHT, PUSH-TO-TEST TYPE, COLOR AS NOTED ABOVE.
	—	TIME DELAY RELAY RANGE AS NOTED SETPOINT AS NOTED # NUMBER AS INDICATED * TDE - TIME DELAY AFTER ENERGIZATION ON DELAY * TDD - TIME DELAY AFTER DE-ENERGIZATION OFF DELAY NOTC - NORMALLY OPEN, TIMED CLOSING WHEN ENERGIZED NCTO - NORMALLY CLOSED, TIMED OPENING WHEN ENERGIZED NOTO - NORMALLY OPEN, TIMED OPENING WHEN DE-ENERGIZED NCTC - NORMALLY CLOSED, TIMED CLOSING WHEN DE-ENERGIZED
	* - ##	FIELD INSTRUMENT, TAG NO. AS INDICATED * INDICATES INSTRUMENT TYPE DEFINED ON LOOP SHEETS OR P & ID ## INDICATES LOOP NO.
	LS OR ■	LIQUID LEVEL (FLOAT) SWITCH NORMALLY OPEN, CLOSING ON RISING LEVEL NORMALLY CLOSED, OPENS ON RISING LEVEL
	PS OR ■	PRESSURE OR VACUUM SWITCH NORMALLY OPEN, CLOSING ON RISING PRESSURE NORMALLY CLOSED, OPENS ON RISING PRESSURE NORMALLY CLOSED, OPENS ON DROPPING PRESSURE
	TS OR T OR ■	TEMPERATURE SWITCH OR THERMOSTAT NORMALLY OPEN, CLOSING ON RISING TEMPERATURE NORMALLY OPEN, CLOSING ON DROPPING TEMPERATURE NORMALLY CLOSED, OPENS ON RISING TEMPERATURE NORMALLY CLOSED, OPENS ON DROPPING TEMPERATURE
	FS OR ■	FLOW SWITCH (AIR, WATER, ETC.) NORMALLY OPEN, CLOSING ON INCREASED FLOW NORMALLY CLOSED, OPENS ON INCREASED FLOW
	ZS OR ■	POSITION (LIMIT) SWITCH NORMALLY OPEN NORMALLY OPEN - HELD CLOSED NORMALLY CLOSED NORMALLY CLOSED - HELD OPEN
	WS OR ■	TORQUE SWITCH NORMALLY OPEN, CLOSING ON HIGH TORQUE NORMALLY CLOSED, OPENS ON HIGH TORQUE
	#	UTILIZED IN CONJUNCTION WITH OTHER CONTROL SCHEMATIC SYMBOLS TO DEPICT THE PHYSICAL LOCATION OF THE DEVICE # REPRESENTS LOCATION SEE LOCATION LEGEND ON DRAWING
	—	CONDUCTORS OR CONDUITS CROSSING PATHS BUT NOT CONNECTED
	—	CONDUCTORS ELECTRICALLY CONNECTED
	S	SOLENOID VALVE

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
	—	LIGHTNING ARRESTER
	—	GROUND OR GROUND ROD
	—	FUSE, AMPERE RATING AS NOTED
	HTR	STRIP HEATER OR HEATING ELEMENT
	—	INDUCTOR
	TG	TACHOMETER GENERATOR
	—	CONTACT, NORMALLY OPEN (NO)
	—	CONTACT, NORMALLY CLOSED (NC)
	—	OVERLOAD RELAY HEATER
	—	TERMINAL OR TEST BLOCK
	—	RESISTANCE TEMPERATURE DETECTOR
	—	VIBRATION DETECTOR
	DM	DAMPER MOTOR
	ETM	ELAPSED TIME METER
	M	MOTOR OPERATED VALVE OR GATE
	—	INDICATES LIMITS OF ELECTRICAL EQUIPMENT OR WIRING ENCLOSURE



NOTES:

- IN GENERAL CONDUIT ROUTING FOR EQUIPMENT AND DEVICES IS NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS WHICH SHALL INCLUDE CONDUITS SHOWN ON ONE-LINE AND RISER DIAGRAMS AND HOME-RUNS SHOWN ON PLAN DRAWINGS. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS.
- THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUITS REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.
- SWITCHGEAR AND MOTOR CONTROL CENTER COMPARTMENT DESIGNATIONS AS INDICATED BELOW:
BLANK: NOT INTENDED FOR USE. PLATE ONLY
SPACE: EQUIPPED WITH REQUIRED BUS AND HARDWARE FOR THE FUTURE ADDITION OF BREAKERS AND/OR STARTERS WITHIN THE SIZE AND RANGE SHOWN
SPARE: CONTAINS A COMPLETELY INSTALLED BREAKER AND/OR STARTER OF SIZE AND TYPE INDICATED FOR FUTURE USE.
- INTERPRETATION OF ELECTRICAL DRAWINGS: CIRCUIT IDENTIFICATION, ROUTING, AND SIZES OF CONDUITS AND WIRES ARE SHOWN ON THE FOLLOWING DRAWINGS:
A. POWER ONE LINE DIAGRAMS: POWER, CONTROL AND SIGNAL WIRING REQUIREMENTS FOR ELECTRICAL DISTRIBUTION EQUIPMENT AND UTILIZATION EQUIPMENT POWERED FROM SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS AND MAJOR POWER DISTRIBUTION PANELBOARDS ARE TYPICALLY SHOWN ON THE ONE LINE DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE ONE LINE DIAGRAMS ARE: CIRCUIT IDENTIFICATION, CIRCUIT ORIGIN AND DESTINATION, CONDUIT SIZE, WIRE SIZE AND QUANTITY FOR COMPLETE CIRCUIT LENGTH, AND AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL/PROTECTION OF THE POWERED EQUIPMENT, AND SIZE OF THE GROUNDING ELECTRODE CONDUCTORS.
B. INSTRUMENTATION AND CONTROL RISER DIAGRAMS: POWER, CONTROL, SIGNAL AND DATA HIGHWAY WIRING REQUIREMENTS FOR INSTRUMENTS AND CONTROL DEVICES CONTROLLED/MONITORED FROM INSTRUMENTATION AND CONTROL PANELS SUCH AS RTUS, PLCs, TERMINAL CABINETS, AND REMOTE I/O PANELS ARE TYPICALLY SHOWN ON THE INSTRUMENTATION AND CONTROL ONE LINE DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE ONE LINE DIAGRAMS ARE: CIRCUIT IDENTIFICATION, CIRCUIT ORIGIN AND DESTINATION, CONDUIT SIZE, WIRE SIZE, QUANTITY AND TYPE FOR COMPLETE CIRCUIT LENGTH, AND AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL/PROTECTION OF THE POWERED EQUIPMENT.
C. FLOOR PLANS: FOR DETERMINING THE LENGTH OF CIRCUITS LOCATED WITHIN STRUCTURES, FLOOR PLANS SHOW THE LOCATION OF ELECTRICAL DISTRIBUTION EQUIPMENT, CONTROL PANELS, UTILIZATION EQUIPMENT, INSTRUMENTS, AUXILIARY EQUIPMENT AND DEVICES AND THE ANTICIPATED PENETRATION LOCATIONS WHERE CONDUITS EXIT/ENTER THE STRUCTURE. HOMERUNS MAY ALSO BE SHOWN FROM MISCELLANEOUS EQUIPMENT NOT SHOWN ON A ONE LINE OR RISER DIAGRAM.
D. SITE PLANS: FOR DETERMINING THE LENGTH OF CIRCUITS EXTERIOR TO STRUCTURES AND TO IDENTIFY THE SPECIFIC REQUIREMENTS OF THE UNDERGROUND CONDUITS OR DUCT BANKS. SITE PLANS SHOW THE GENERAL ROUTING OF UNDERGROUND CONDUITS AND DUCT BANKS, WITH SECTIONS INDICATING THE CONDUIT SIZE, ARRANGEMENT AND CIRCUIT ROUTING.
E. NOTE THAT CONDUIT SIZE WITHIN STRUCTURE IS INDICATED ON ONE-LINE DIAGRAM AND UNDERGROUND SIZE IS INDICATED ON DUCT BANK SECTIONS.

GENERAL NOTE
THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

**DUPONT PUMP STATION AND
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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: ER DESIGNER: RR CHECKER: SP
 SHEET TITLE: ELECTRICAL
 SHEET: E-1

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SYMBOL	DESCRIPTION
	INCANDESCENT, COMPACT FLUORESCENT, LED OR H.I.D. TYPE LIGHTING FIXTURE "A" - FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) "b" - CONTROLLED BY SWITCH "b" "3" - CIRCUIT NUMBER
	LED TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
	WALL MOUNTED INCANDESCENT, COMPACT FLUORESCENT, LED OR H.I.D. TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
	CROSS HATCH INDICATES LIGHTING FIXTURE THAT IS UNSWITCHED AND SHALL REMAIN ON AT ALL TIMES. NOTATIONS SAME AS ABOVE.
	SHADED AREA INDICATES LIGHTING FIXTURE THAT IS EQUIPPED WITH EMERGENCY BACKUP POWER SOURCE. NOTATIONS SAME AS ABOVE.
	POLE MOUNTED AREA H.I.D. TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
	POLE MOUNTED ROADWAY H.I.D. TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
	EMERGENCY LIGHTING BATTERY UNIT WITH TWO LAMP HEADS "EM" - FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) "3" - SUPERVISORY CIRCUIT * - FIXTURE TAG #
	REMOTE EMERGENCY ADJUSTABLE WALL LIGHTING FIXTURE WITH TWO LAMP HEADS "R-2" - FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) * - HOME RUN TO BATTERY UNIT INDICATED. CONDUIT SHALL BE 3/4" AND CONTAIN (2) NO. 12 AWG RANCH CIRCUIT CONDUCTORS AND (1) NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE INDICATED.
	COMBINATION BATTERY UNIT AND EXIT SIGN. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN.
	CEILING MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE. WHEN USED, ARROW INDICATES DIRECTION OF EGRESS. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN. (DOUBLE FACE DOUBLE CHEVRONS SHOWN)
	WALL MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE. WHEN USED, ARROW INDICATES DIRECTION OF EGRESS. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN.
	REMOTE EMERGENCY CEILING LIGHTING FIXTURE. "RH-3" - FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) "3" - SUPERVISORY CIRCUIT * - HOME RUN TO BATTERY UNIT INDICATED. CONDUIT SHALL BE 3/4" AND CONTAIN 2 NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND 1 NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE INDICATED.
	HOME RUN TO DESIGNATED EQUIPMENT. BRANCH CIRCUIT CONDUIT WITH 2 NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND 1 NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE NOTED. NUMBER OF ARROWS INDICATE NUMBER OF CIRCUITS. FOR MINIMUM SIZE CONDUIT PERMITTED REFER TO THE SPECIFICATIONS.
	CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING.
	CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
	CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
	"X" INDICATES EXPLOSION PROOF CONDUIT SEAL FITTING.
	CONCRETE ENCASED DUCTBANK. WIDTH VARIES, SEE DUCTBANK SECTION/DETAILS FOR REQUIREMENTS AND WIDTH
	CONDUIT STUBBED OUT AND CAPPED
	DENOTES A QUANTITY OF TWO (2) 3-INCH CONDUITS EACH CONTAINING THREE NO. 3/0 AWG CONDUCTORS AND 1 NO. 2 AWG GROUND CONDUCTOR.
	DENOTES A QUANTITY OF TWO INSTRUMENT CABLES. EACH CABLE TO CONSIST OF TWO NO. 16 AWG CONDUCTORS TWISTED TOGETHER AND COVERED WITH A METALLIC SHIELD AND AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
	SAME AS ABOVE EXCEPT CABLE TO CONSIST OF THREE NO. 16 AWG CONDUCTORS TWISTED, SHIELDED AND COVERED WITH AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
	THREE 4-INCH CONDUITS
	FLEXIBLE METAL CONDUIT "WHIP" (3/4", 2#12, 1#12G UNLESS OTHERWISE NOTED) FOR LIQUID TIGHT MOTOR CONNECTIONS
	"X" INDICATES CONDUIT SEAL FITTING IN OTHER THAN CODE REQUIRED LOCATIONS.
	INDICATES MOTOR STARTER AND/OR MOTOR CONTROL EQUIPMENT WITHIN THE ENCLOSURE.

SYMBOL	DESCRIPTION
	SINGLE POLE SWITCH "a" INDICATES FIXTURES CONTROLLED.
	DOUBLE POLE SWITCH "a" INDICATES FIXTURES CONTROLLED.
	THREE WAY SWITCH "c" INDICATES FIXTURES CONTROLLED.
	FOUR WAY SWITCH "a" INDICATES FIXTURES CONTROLLED.
	DIMMER SWITCH "a" INDICATES FIXTURES CONTROLLED
	SINGLE POLE SWITCH "OS" INDICATES A PASSIVE INFRARED OCCUPANCY SENSOR
	DOUBLE POLE SWITCH "OS" INDICATES PROGRAMMABLE OCCUPANCY SENSOR CAPABLE OF INBOARD/OUTBOARD SWITCHING
	SINGLE POLE SWITCH "DT" INDICATES DUAL TECHNOLOGY PROGRAMMABLE OCCUPANCY SENSOR CAPABLE OF SENSING MOTION AND SOUND
	LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED
	TIME SWITCH
	PUSH BUTTON STATION
	INDICATES ALL LIGHTING FIXTURES WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE TYPE "A" UNLESS OTHERWISE NOTED. SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
	LIGHTING PANELBOARD (LP-#) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
	POWER PANELBOARD (PP-#) OR DISTRIBUTION PANELBOARD (DP-#) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
	LIGHTING CONTACTOR PANELBOARD (LCP-#) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W * GFCI - GROUND FAULT CIRCUIT INTERRUPTER TYPE WP - WEATHERPROOF XP - EXPLOSION PROOF T - TRANSIENT VOLTAGE SURGE SUPPRESSOR IC - ISOLATED GROUND 4 - CIRCUIT NUMBER
	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W MOUNTED ABOVE COUNTER-TOP OR 42" AFF * NOTATIONS SAME AS ABOVE
	SPECIAL PURPOSE RECEPTACLE * - VOLT RATING "3" - NUMBER OF POLES "60" - AMPERE RATING "4W" - 4 WIRES IN ADDITION TO GROUND
	MULTI-OUTLET ASSEMBLY, SYMBOL DENOTES RECEPTACLE TYPE
	FLUSH FLOOR OUTLET BOX WITH TYPE OUTLET INDICATED
	UNDER FLOOR DUCT SYSTEM WITH TYPE OUTLETS INDICATED
	THREE CELL UNDER FLOOR DUCT SYSTEM JUNCTION BOX
	JUNCTION BOX
	PULL BOX
	TERMINAL CABINET
	OCCUPANCY SENSOR
	PHOTOCELL
	EMERGENCY EYEWASH/SHOWER ALARM STATION WITH FLOW SWITCH(ES)
	INDICATED EQUIPMENT AND MATERIALS TO BE DEMOLISHED
	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 12 CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR CORROSION RESISTANT CONSTRUCTION SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL CONFORM TO N.E.C. REQUIREMENTS FOR THE HAZARDOUS AREA CLASSIFICATION SHOWN.

SYMBOL	DESCRIPTION
	GROUND SYSTEM GRID OR LOOP, 36" BELOW FINISHED GRADE UNLESS OTHERWISE NOTED.
	EXOTHERMIC WELD CONNECTION
	3/4" x 10'-0" GROUND ROD. UNLESS SPECIFIED OTHERWISE.
	GROUND ROD TEST WELL STATION (SEE DETAIL SHEET FOR REQUIREMENTS)
COMMUNICATION SYSTEMS	
	TELEPHONE OUTLET FOR DESK TYPE HANDSET K = KEY SYSTEM
	TELEPHONE OUTLET FOR WALL TYPE HANDSET (MOUNT UP 4'-6") K = KEY SYSTEM
	PAGE/PARTY TELEPHONE OUTLET FOR DESK TYPE HANDSET
	PAGE/PARTY TELEPHONE OUTLET FOR WALL TYPE HANDSET, MOUNT UP 4'-6"
	PAGING SPEAKER, WALL MOUNTED H = HORN TYPE W = WIDE ANGLE TYPE
	PAGING SPEAKER, WALL MOUNTED, BI-DIRECTIONAL, HORN TYPE W = WIDE ANGLE TYPE
	PAGING SPEAKER, FLUSH MOUNTED CEILING TYPE
	PAGING SPEAKER, SURFACE MOUNTED CEILING TYPE
	REMOTE WALL MOUNTED VOLUME CONTROL FOR CEILING SPEAKER, MOUNT UP 5'-0"
	PAGING SPEAKER AMPLIFIER ASSEMBLY
	TELEPHONE CABINET OR BACKBOARD AS NOTED
	"C" - DATA INPUT/OUTPUT CABLE OUTLET "P" - PROCESS COMPUTER SYSTEM (CAT6 RJ-45 JACK)
	GAS DETECTOR/VENTILATION FAILURE ALARM. # INDICATES TYPE OF UNIT. 1 = MASTER, 2 = REMOTE
	GAS DETECTION/VENTILATION FAILURE WEATHERPROOF DUAL-LITE BEACON MOUNT TOP OF DEVICE UP 6'-8" A.F.F.
	GAS DETECTION/VENTILATION FAILURE HORN/STROBE MOUNT TOP OF DEVICE UP 6'-8" A.F.F.
	GAS DETECTION/VENTILATION FAILURE HORN, MOUNT TOP OF DEVICE UP 6'-8" A.F.F.
	GAS DETECTION/VENTILATION FAILURE STROBE, MOUNT TOP OF DEVICE UP 6'-8" A.F.F.
SECURITY SYSTEMS	
	SECURITY ALARM CONTROL PANEL
	SECURITY ALARM DOOR SWITCH
	SECURITY ALARM KEY PAD
	SECURITY SYSTEM CARD ACCESS READER
	SECURITY ALARM WINDOW SWITCH
	SECURITY ALARM MOTION DETECTOR
	CLOSED CIRCUIT TV CAMERA
	PAN, TILT, ZOOM CAMERA LENS CONTROLS
	GLASS BREAK DETECTOR
FIRE ALARM SYSTEMS	
	FIRE ALARM HEAT DETECTOR 135 FIXED TEMPERATURE UNLESS OTHERWISE NOTED. "200" - 200 FIXED TEMPERATURE "R" - FIXED TEMPERATURE RATE-OF-RISE TYPE
	FIRE ALARM SMOKE DETECTOR PHOTOELECTRIC TYPE UNLESS OTHERWISE NOTED. "I" - IONIZATION TYPE.
	FIRE ALARM DUCT SMOKE DETECTOR
	FIRE ALARM CONTROL PANEL
	FIRE ALARM VENTILATION PANEL WITH GRAPHIC PANEL
	REMOTE FIRE ALARM ANNUCIATOR PANEL

SYMBOL	DESCRIPTION
	FIRE ALARM MASTER BOX
	FIRE ALARM HORN, MOUNT UP 7'-6"
	FIRE ALARM STROBE, MOUNT UP 6'-8" 15 = CANDELA RATING
	FIRE ALARM HORN AND STROBE LIGHT COMBINATION, MOUNT UP 6'-8" 15 = CANDELA RATING
	FIRE ALARM MANUAL PULL STATION, MOUNT UP 4'-0"
	SPRINKLER VALVE SUPERVISORY SWITCH
	SPRINKLER FLOW ALARM SWITCH
	FIRE ALARM BELL
	WEATHERPROOF HI-INTENSITY FIRE ALARM STROBE LIGHT WITH HORN
	PASSIVE INFRARED DETECTOR
	SMOKE BEAM DETECTOR (RECEIVER)
	SMOKE BEAM DETECTOR (TRANSMITTER)
	FIRE ALARM SMOKE DETECTOR REMOTE INDICATOR AND TEST SWITCH

ABBREVIATIONS	
A	AMPS
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
AIC	AMPERE INTERRUPTING CAPACITY
AMP	AMPERE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
BLDG	BUILDING
CB	CONDUIT
C	CIRCUIT BREAKER
CGD	COMBUSTIBLE GAS DETECTOR
CKT	CIRCUIT
CLB	CURRENT LIMITING BREAKER
CLF	CURRENT LIMITING FUSE
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL SWITCH/CONTROL STATION
CT	CURRENT TRANSFORMER
CU	COPPER
CWS	CONDUIT WALL SEAL
DC	DIRECT CURRENT
DIA	DIAMETER
DMU	DIGITAL METERING UNIT
DN	DOWN
EC	EMPTY CONDUIT
EHH	ELECTRICAL HANDHOLE
ELEC	ELECTRICAL

SHEET NO. WHERE DETAIL IS DRAWN
SYMBOL WHERE THERE IS A DETAIL

SHEET NO. WHERE THERE IS A DETAIL
DETAIL
 1/4" = 1'-0"
SYMBOL WHERE DETAIL IS DRAWN

DETAIL SYMBOL

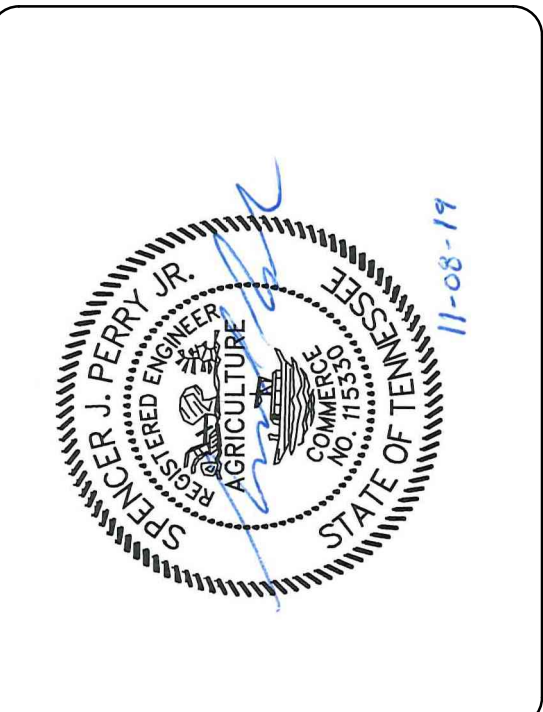
SHEET NO. WHERE SECTION IS DRAWN
SYMBOL WHERE THERE IS A SECTION

SHEET NO. WHERE SECTION IS TAKEN
SECTION
 1/4" = 1'-0"
SYMBOL WHERE SECTION IS DRAWN

SECTION SYMBOL

GENERAL NOTE
 THIS IS A STANDARD LEGEND.
 SOME SYMBOLS MAY NOT
 APPEAR ON THE DRAWINGS.

ABBREVIATIONS (CONTINUED)	
ELEV	ELEVATION
EM	EMERGENCY
EMH	ELECTRICAL MANHOLE
ENCL	ENCLOSURE OR ENCLOSED
EPB	ELECTRIC POWER BOARD OF CHATTANOOGA
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EW	ELECTRIC WATER HEATER
EX	EXISTING
FLA	FULL LOAD AMPERES
FO	FIBER OPTIC
FU	FUSE
GCP	GENERATOR CONTROL PANEL
GEN	GENERATOR
G, GND	GROUND
GFI	GROUND FAULT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
HACR	HEATING & AIR CONDITIONING RATED
HH	HANDHOLE
HT	HEIGHT
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HZ	HERTZ
ID	IDENTIFICATION
INSTR	INSTRUMENT
K	KILO (PREFIX)
kmil	1000 CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
LA	LIGHTING ARRESTER
LTG	LIGHTING
LP	LIGHTING PANEL
LV	LOW VOLTAGE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
N	NEUTRAL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN OR NUMBER
NTS	NOT TO SCALE
OH	OVERHEAD
OL	OVERLOAD
PB	PULL BOX
PCP	PUMP CONTROL PANEL
PH	PHASE
PMH	POWER MANHOLE
PNL	PANEL OR PANELBOARD
PR	PAIR
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RECP	RECEPTACLE
REQD	REQUIRED
QTY	QUANTITY
SA	SURGE ARRESTER
SEC	SECONDS OR SECONDARY
SH	SHIELDED OR SPACE HEATER
SHH	SIGNAL HANDHOLE
SPD	SURGE PROTECTIVE DEVICE
SS	STAINLESS STEEL
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME TO CLOSE OR TRAY CABLE
TEL	TELEPHONE
TO	TIME TO OPEN
TS	TWISTED SHIELDED OR THERMAL SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VA	VOLT AMPS
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS, WIDTH, WITH, WIRE
WP	WEATHERPROOF
XP	EXPLOSION PROOF
XFMR	TRANSFORMER

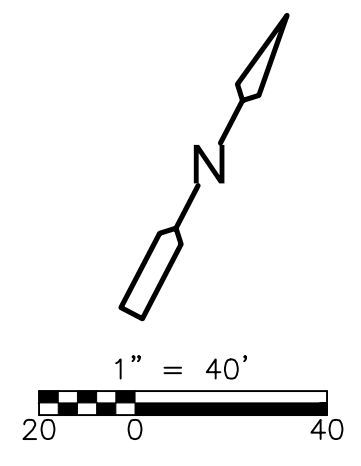
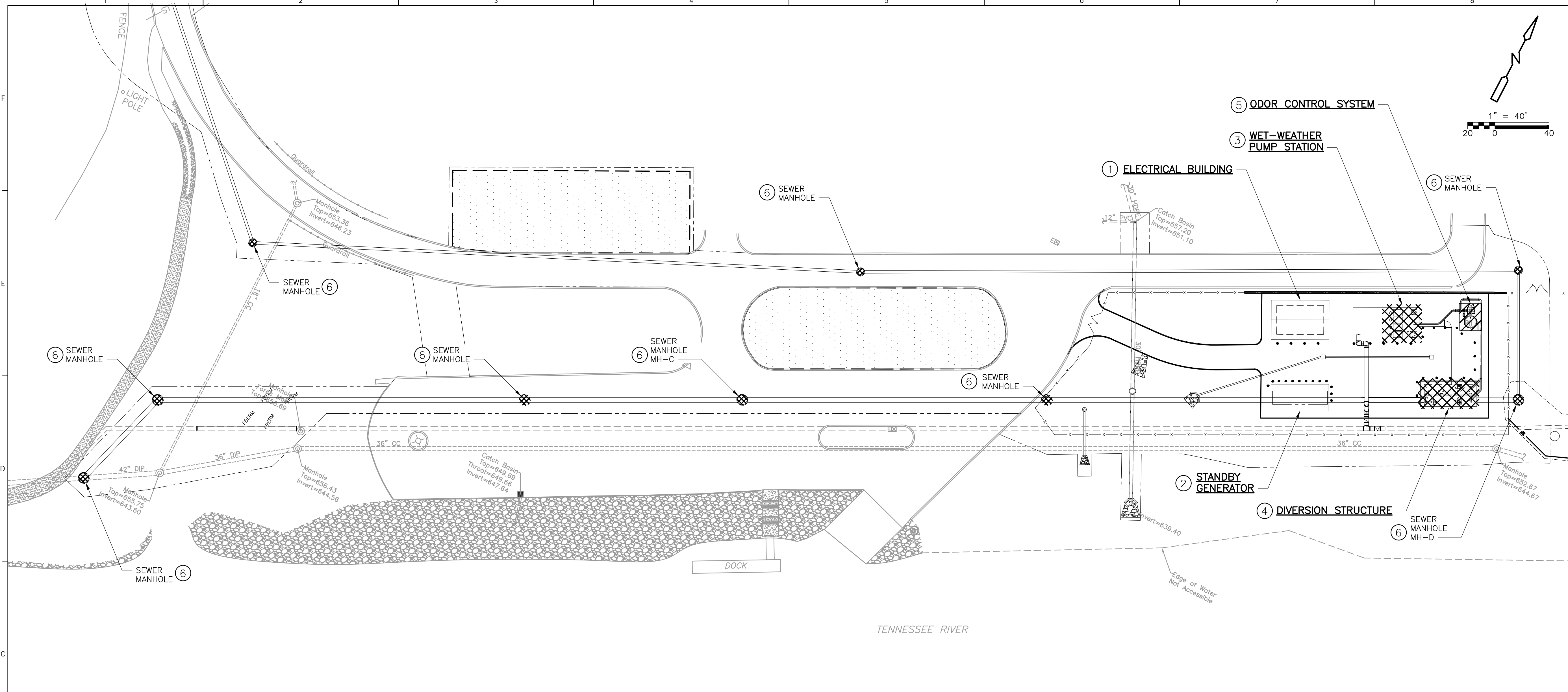


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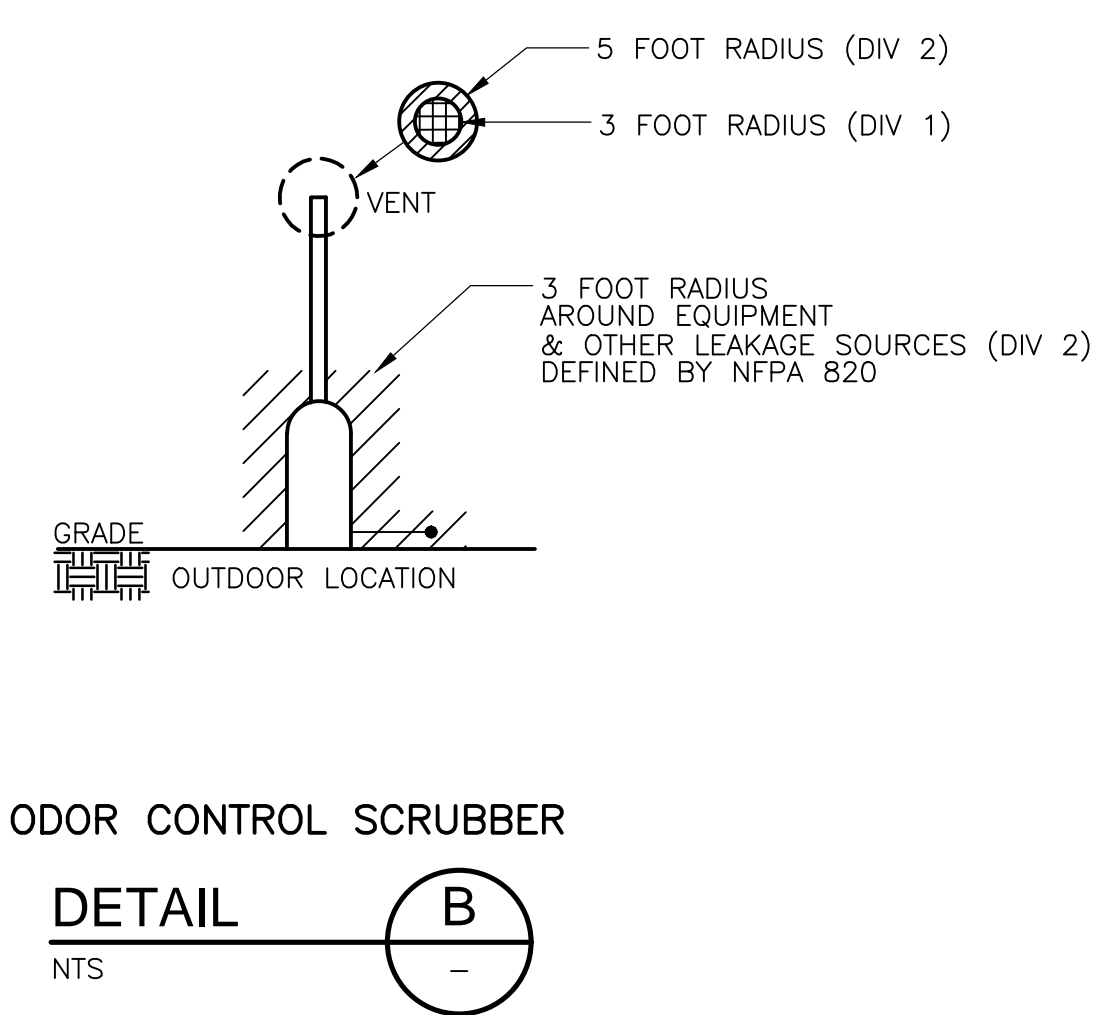
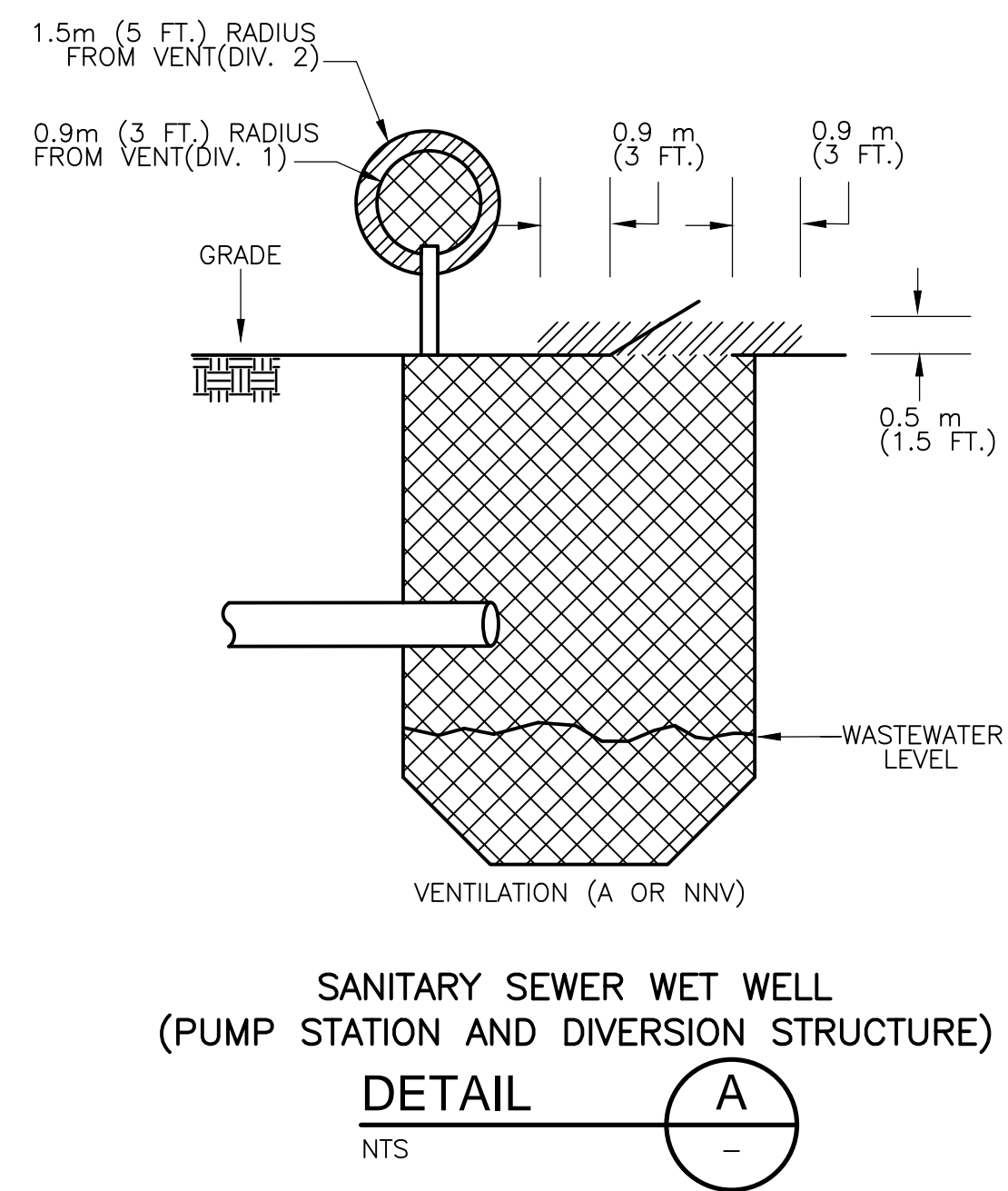
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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: _____ DESIGNER: _____ CHECKER: _____
 ER _____ RR _____ SP _____
 SHEET TITLE: **ELECTRICAL**
ELECTRICAL LEGEND II
 SHEET: **E-2**

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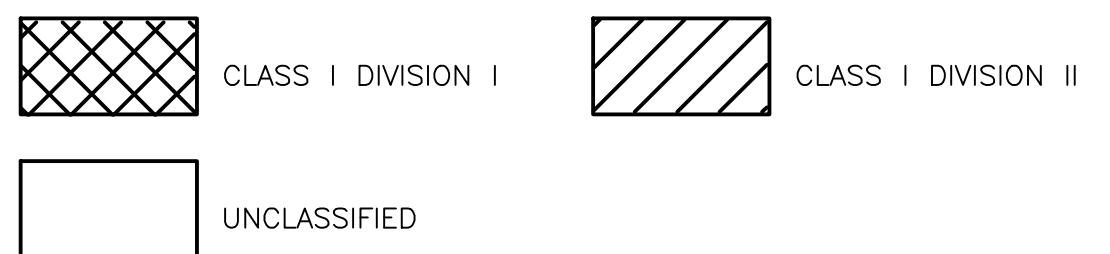


PLAN



TAG	AREA	ELEC. CLASSIFICATION	NFPA REFERENCE	NFPA FIRE PROTECTION MEASURES	NOTES
①	ELECTRICAL BUILDING	UNCLASSIFIED	N/A	NR	
②	STANDBY GENERATOR	UNCLASSIFIED	N/A	NR	
③	WET-WEATHER PUMP STATION	CLASS I, DIVISION 1	NFPA 820 - TABLE 4.2.2, ROW 16a	NR	REFER TO DETAIL 'A' ON THIS SHEET
④	DIVERSION STRUCTURE	CLASS I, DIVISION 1	NFPA 820 - TABLE 4.2.2, ROW 29a	NR	REFER TO DETAIL 'A' ON THIS SHEET
⑤	ODOR CONTROL SYSTEM	CLASS I, DIVISION 2	NFPA 820 - TABLE 4.2.2, ROW 20d	FE	REFER TO DETAIL 'B' ON THIS SHEET
⑥	SEWER MANHOLE (TYPICAL) (SOME MANHOLE AROUND PARKING AREA ARE NOT SHOWN)	CLASS I, DIVISION 1	NFPA 820 - TABLE 4.2.2, ROW 21a	NR	ENTIRE ENCLOSED SPACE

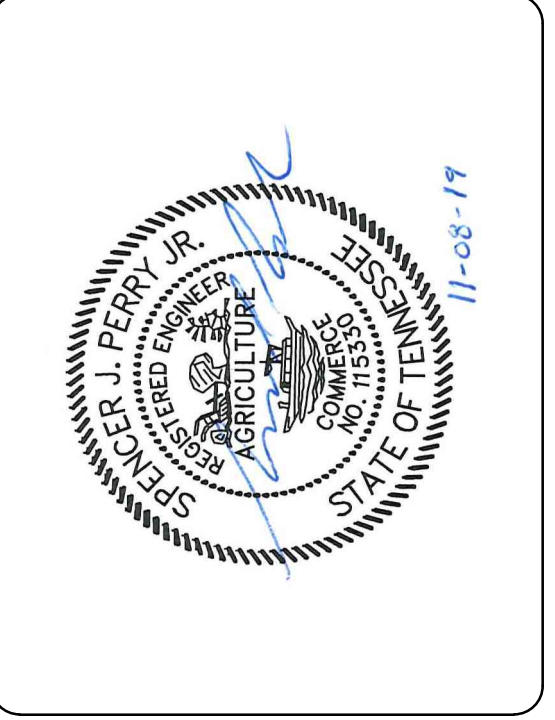
AREA CLASSIFICATION LEGEND:



ABBREVIATIONS:

N/A - NOT APPLICABLE
 CGD - COMBUSTIBLE GAS DETECTION REQUIRED
 H - HYDRANT
 FE - PORTABLE FIRE EXTINGUISHER
 FAS - FIRE ALARM SYSTEM
 NR - NO REQUIREMENT
 FSS - FIRE SUPPRESSION SYSTEM

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 651 East 4th Street Suite 100
 Chattanooga, TN 37403
 Tel: (423) 771-4495

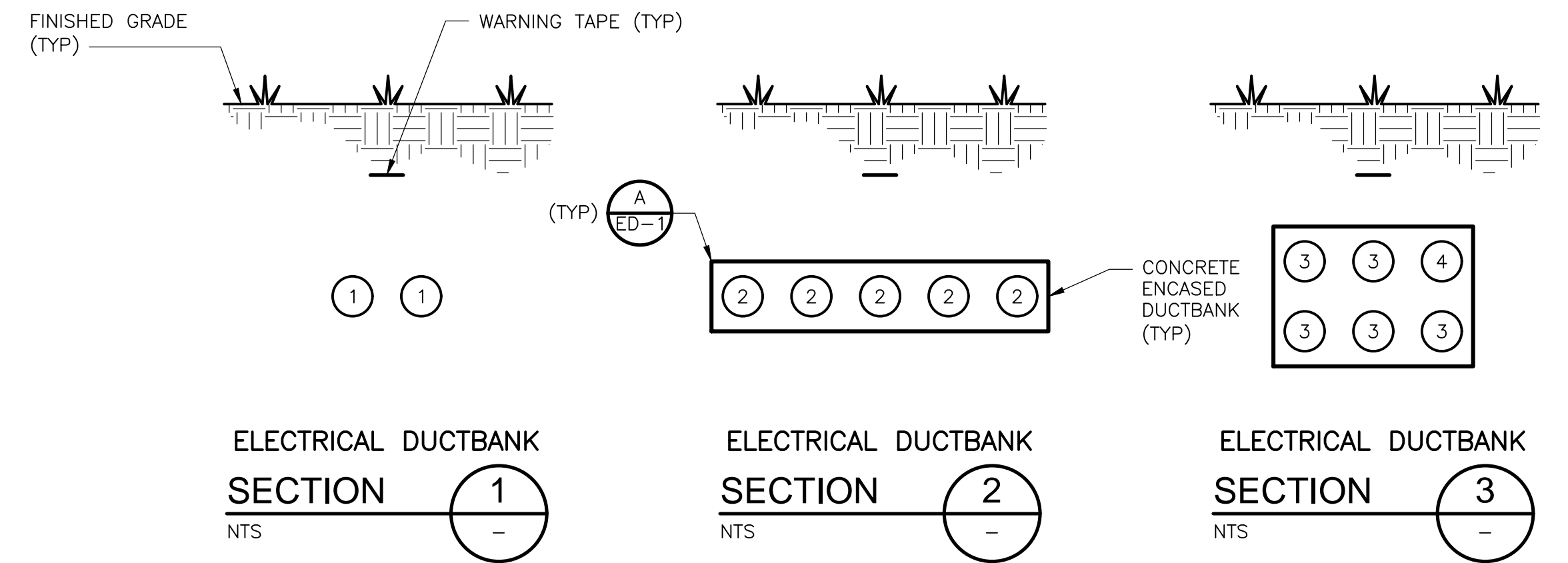
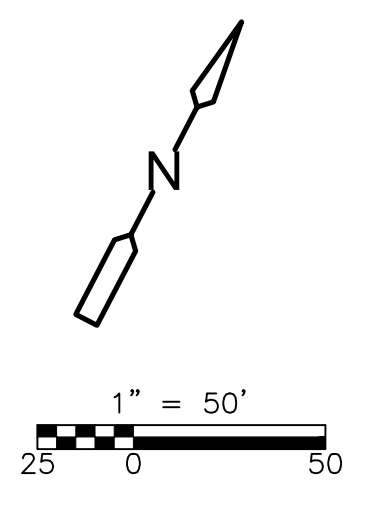
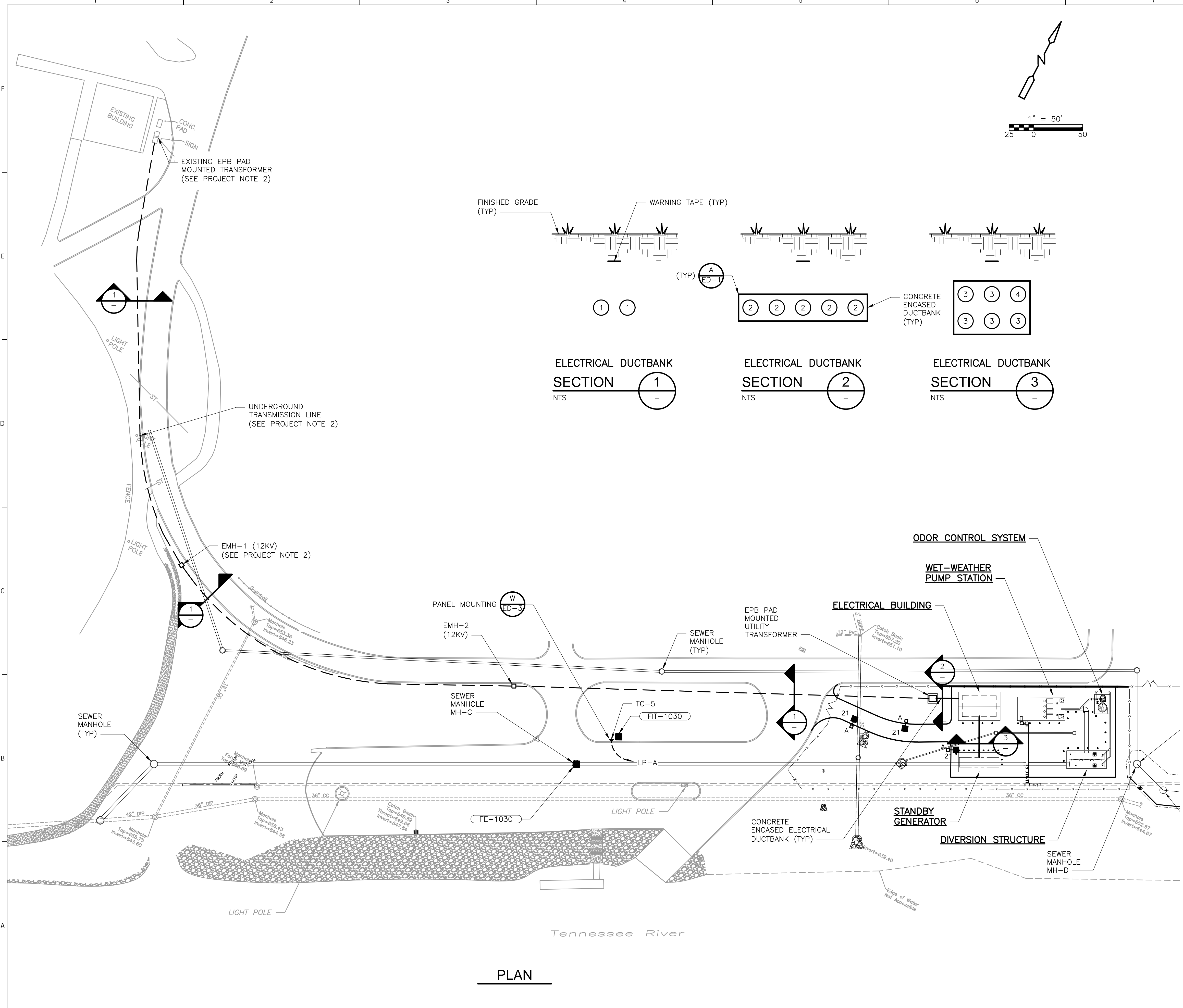


DUPONT PUMP STATION AND
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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
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 SHEET TITLE: ELECTRICAL
 HAZARDOUS AREA CLASSIFICATION PLAN
 SHEET: E-3

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GENERAL NOTES:

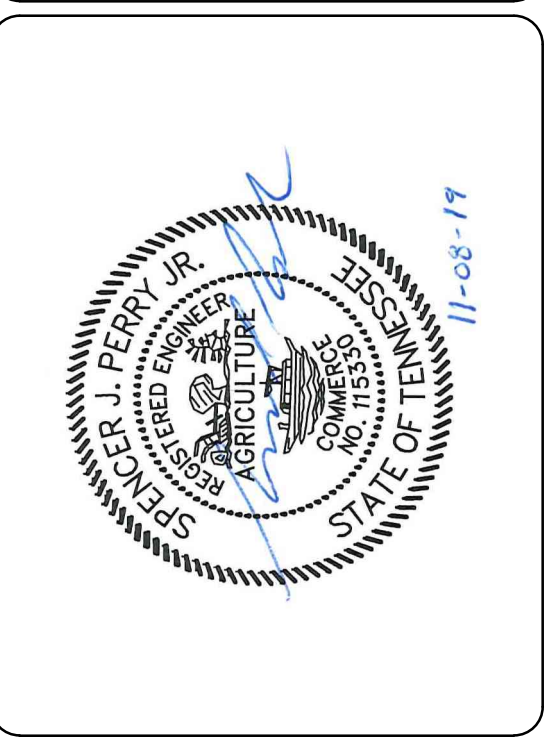
- A. DO NOT SCALE THE ELECTRICAL DRAWINGS REFER TO THE CIVIL, MECHANICAL, STRUCTURAL DRAWINGS, AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACT LOCATION OF ALL EQUIPMENT.
- B. ALL WORK SHALL COMPLY WITH NEC AND LOCAL CODES.
- C. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED IN SPECIFICATIONS.
- D. ALL CONDUITS SHALL HAVE A BOND WIRE SIZED PER TABLE 250.122 OF THE NEC (UNLESS OTHERWISE NOTED).
- E. CONTRACTOR SHALL FIELD VERIFY EXISTING UNDERGROUND UTILITIES, PIPING, ETC. REROUTE NEW CONDUITS, DUCTBANK, MANHOLES, PULL BOXES, ETC., AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

PROJECT NOTES:

- 1. PROVIDE AND INSTALL LIGHTNING PROTECTION SYSTEM PER NFPA 780, NEC, AND SPECIFICATION 26 41 13.
- 2. EPB (THE ELECTRIC POWER BOARD OF CHATTANOOGA) WILL BE RESPONSIBLE FOR PROVIDING AND INSTALLING THE NEW SERVICE DROP, INCLUDING BUT NOT LIMITED TO THE PAD MOUNTED TRANSFORMER, CONCRETE PAD, MANHOLES, UNDERGROUND PRIMARY CONDUCTOR, PRIMARY CONDUCTOR TERMINATION, TRENCHING, AND CONDUIT. CONTRACTOR IS RESPONSIBLE FOR COMPLETE COORDINATION WITH POWER COMPANY, PROVIDING ALL REQUIRED EQUIPMENT AND HARDWARE, AND REQUIRED TO PAY FEES TO UTILITIES AS REQUIRED. REFER TO SECTION 260000 FOR ADDITIONAL REQUIREMENTS.
- 3. CCTV CAMERAS ARE PROVIDED AND INSTALLED BY DIVISION 40. PROVIDE 1" (DIRECT BURY) FROM EACH CAMERA BACK TO DIGITAL VIDEO RECORDING PANEL LOCATED IN ELECTRICAL BUILDING.

CONDUIT AND WIRE LEGEND
(NUMBERS REFERENCE THIS SHEET ONLY)

NO.	DESCRIPTION
1	4" C., TO EPB EXISTING TRANSFORMER (12KV)
2	4" C., TO XFMR-A
3	5" C., TO SWGR-1
4	2" C., TO SWGR-1 AND PLC-DPS



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DATE: NOVEMBER 2019

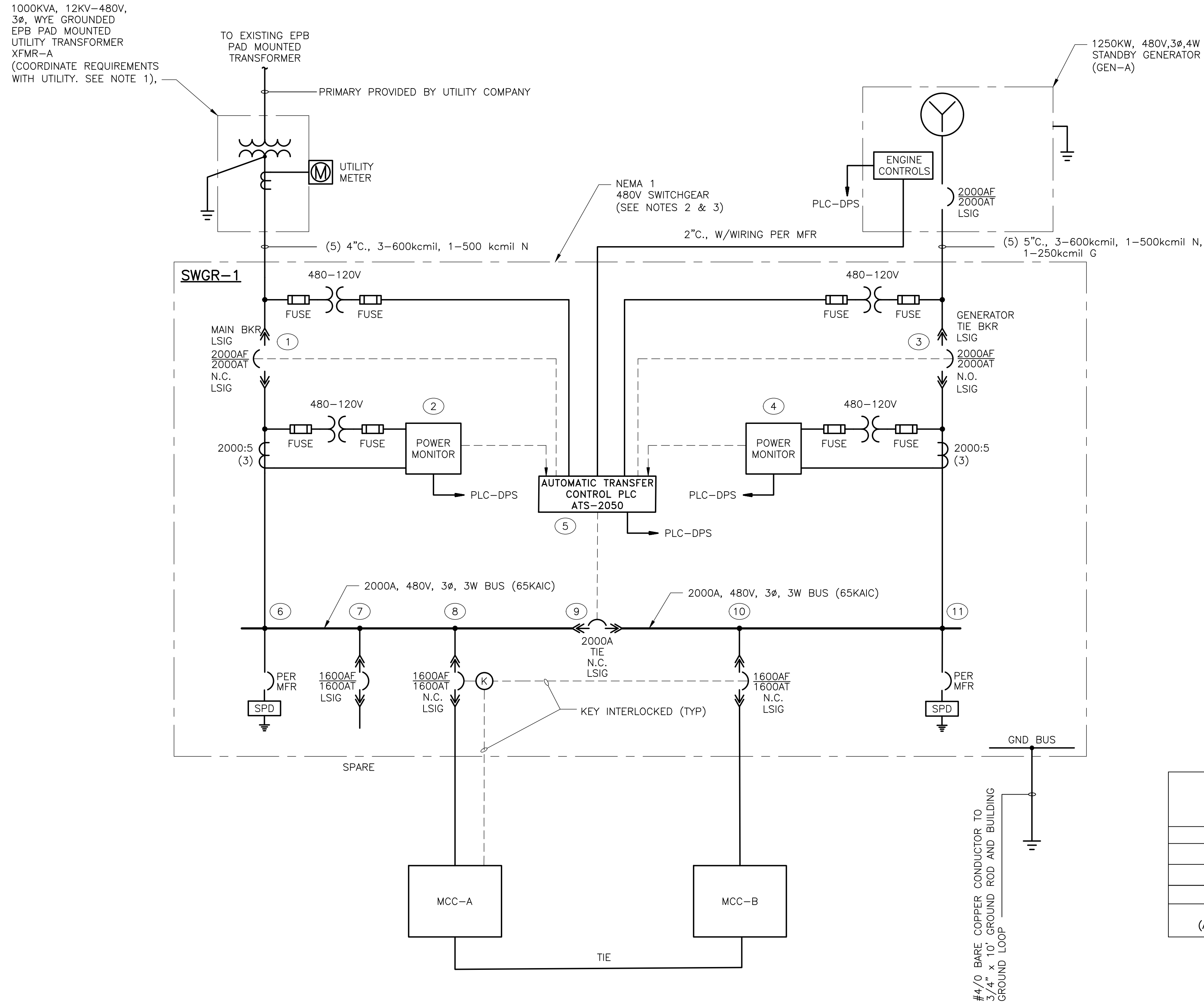
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SHEET TITLE: ELECTRICAL

ELECTRICAL SITE PLAN

SHEET: E-4

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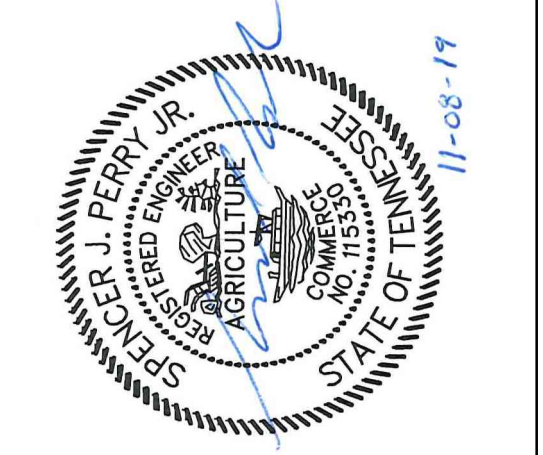


**480V SWITCHGEAR SWGR-1
ONE LINE POWER DIAGRAM**

NOTES:

1. TRANSFORMER, METERING, CURRENT TRANSFORMERS (CTS), AND ASSOCIATED WIRING PROVIDED AND INSTALLED BY POWER COMPANY. COORDINATE GROUNDING REQUIREMENTS. PROVIDE ALL INCIDENTALS REQUIRED TO CONFORM TO POWER COMPANY STANDARDS. REFER TO SECTION 260000 FOR ADDITIONAL SERVICE AND METERING REQUIREMENTS.
2. SERVICE ENTRANCED RATED SWITCHGEAR. ALL SWITCHGEAR BREAKERS SHALL BE 100% RATED AND HAVE LONG TIME, SHORT TIME, INSTANTANEOUS AND GROUND FAULT TRIP FUNCTIONS.
3. CONNECT THE GENERATOR NEUTRAL CONNECTION TO THE NEUTRAL LUG IN THE MAIN SWITCHGEAR AND PROVIDE SUFFICIENT LUGGING TO ACCOMMODATE THE CONNECTION.

SWGR-1 CONNECTED LOAD		
DESCRIPTION	TOTAL HP	TOTAL FLA
MCC-A	-	757.8
MCC-B	-	758.9
TOTAL CONNECTED LOAD (AMPERES @ 480V, 3-PHASE)	-	1516.7



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DATE: NOVEMBER 2019

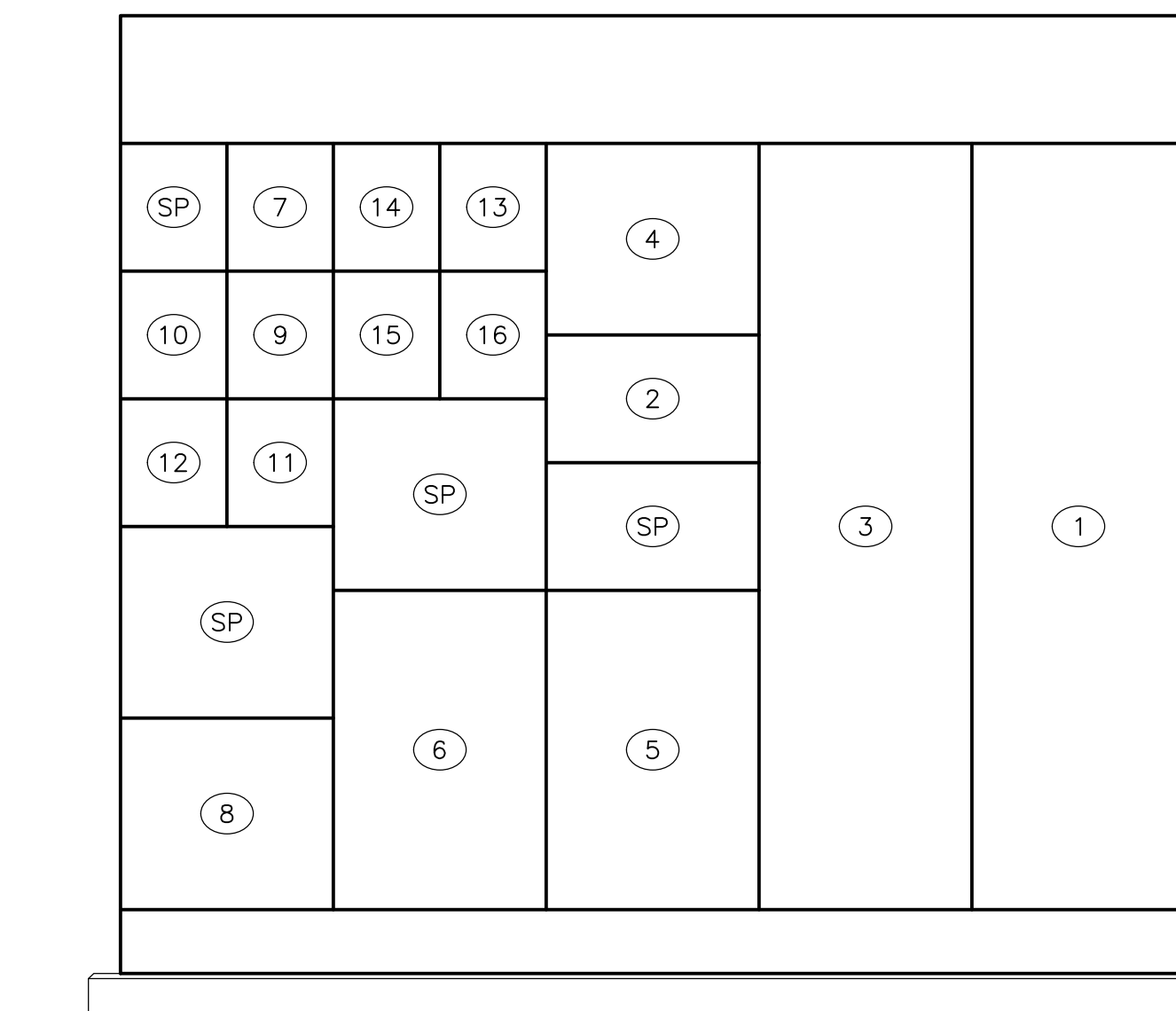
DISC. LEAD:	DESIGNER:	CHECKER:
JD	JD	JS

SHEET TITLE
ELECTRICAL

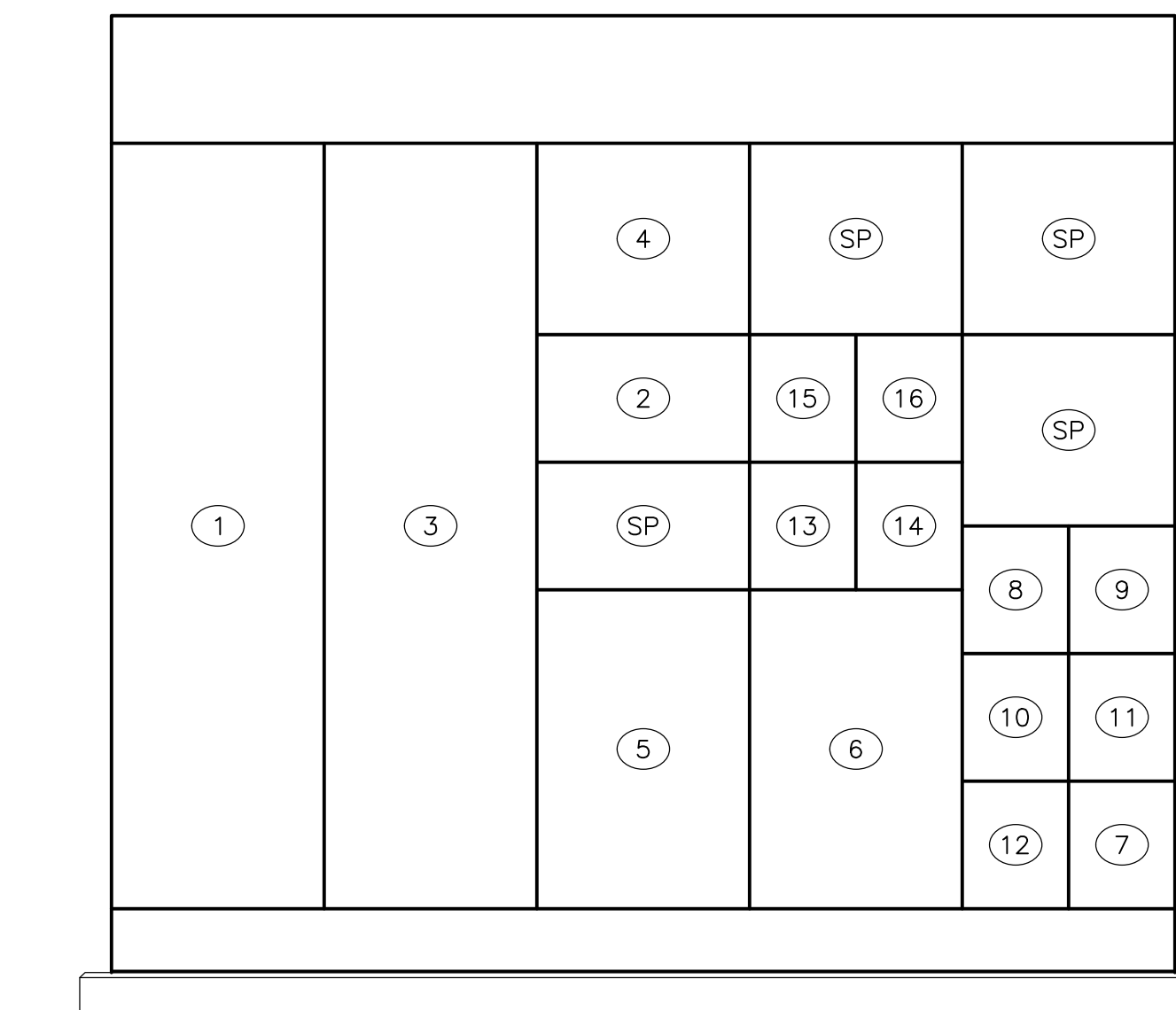
480V SWITCHGEAR SWGR-1
ONE LINE POWER DIAGRAM

SHEET
E-5

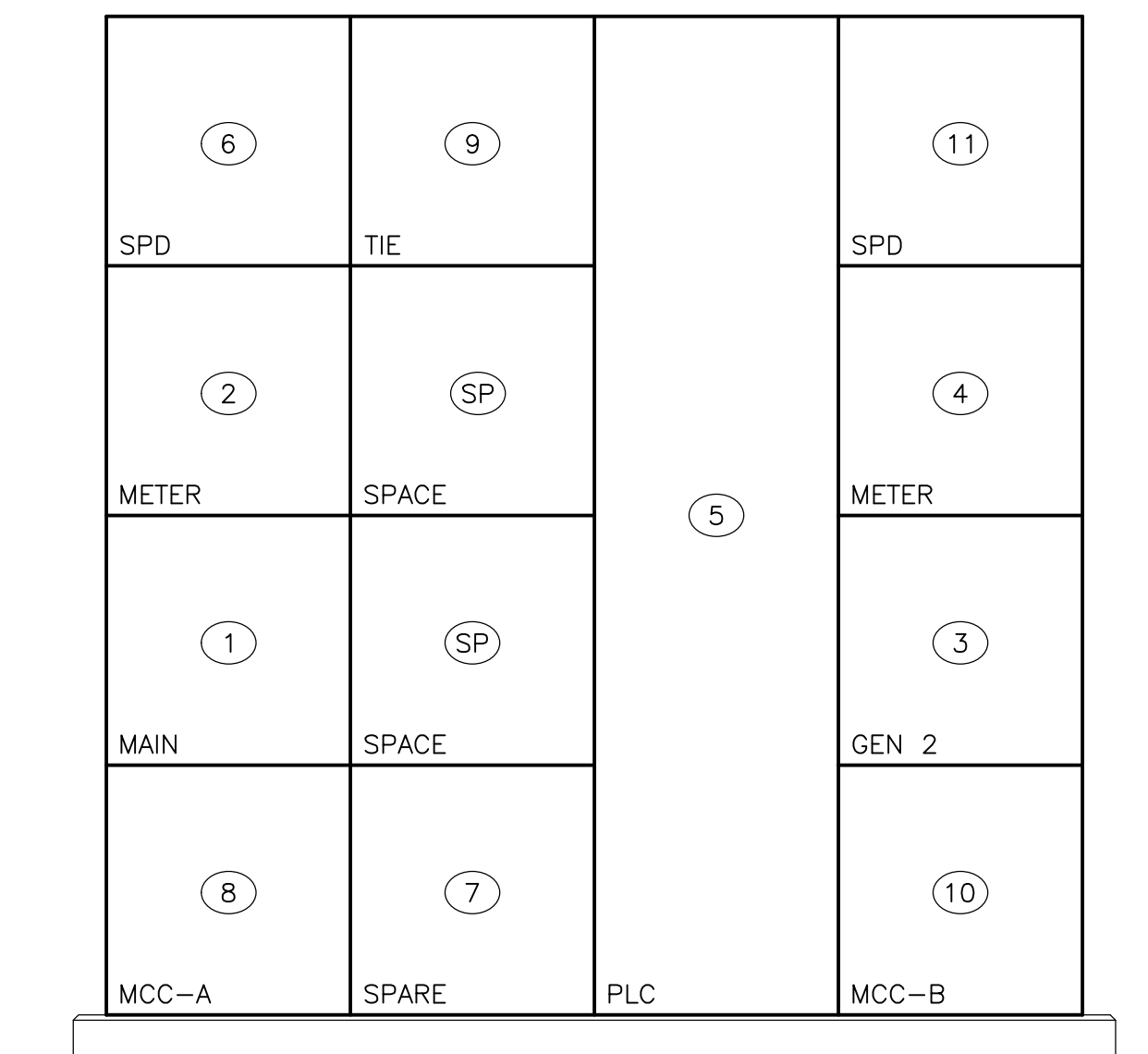
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(SP) = SPACE
MCC-A
FRONT ELEVATION
 NTS

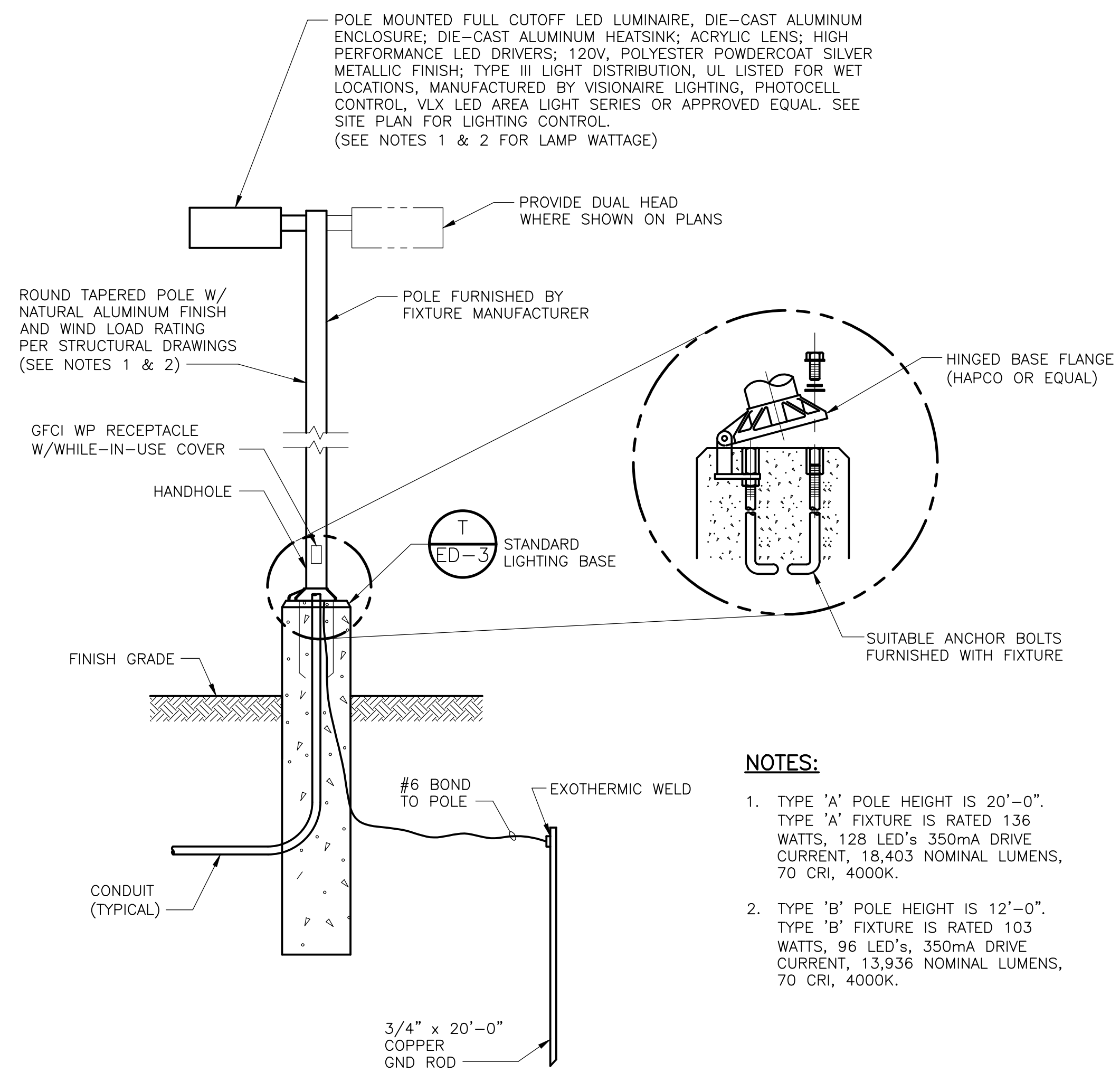


(SP) = SPACE
MCC-B
FRONT ELEVATION
 NTS



SWGR-1
FRONT ELEVATION
 NTS

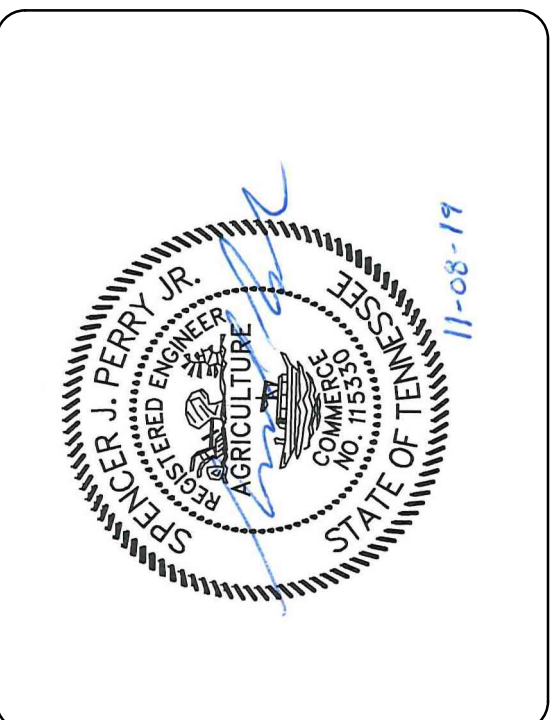
LIGHTING FIXTURE SCHEDULE			
TYPE	WATT	DESCRIPTION	MFR (OR APPROVED EQUAL)
A	128	SEE POLE MOUNTED LED LUMINAIRE DETAIL 'L1', THIS SHEET, FOR DESCRIPTION AND MANUFACTURER.	
B	103	SEE POLE MOUNTED LUMINAIRE LEG DETAIL 'L1', THIS SHEET, FOR DESCRIPTION AND MANUFACTURER.	
C	42	LED, INJECTION-MOLDED, IMPACT RESISTANT, POLYCARBONATE HOUSING WITH CLOSED-CELL GASKET. CLEAR POLYCARBONATE LENS WITH STAINLESS STEEL TAMPER RESISTANT LATCHES. 4000 LUMENS, 3500K, 120V, WET LOCATION AND IP66 RATED.	LITHONIA: VAP-4000LM-PCL-MD-MVOLT-GZ10-35K-80CRI
C1	42	SAME AS TYPE 'C' ABOVE WITH INTEGRAL 15W EMERGENCY LED BATTERY	LITHONIA: VAP-4000LM-PCL-MD-MVOLT-GZ10-35K-80CRI-E15WCP
D	52	LED EMERGENCY SCONCE; WALL MOUNTED FULL CUTOFF FIXTURE; SINGLE PIECE DIE-CAST ALUMINUM HOUSING AND DOOR FRAME; MEMORY RETENTIVE GASKET SEALS; STAINLESS STEEL HARDWARE; CLEAR GLASS LENS; 32 LED FOR NORMAL AND EMERGENCY MODE; TYPE 3 LIGHT DISTRIBUTION; POLYESTER POWDERCOAT NATURAL ALUMINUM FINISH; 650mA LED DRIVERS, 3248 LUMENS IN NORMAL MODE AND 1252 LUMENS IN EMERGENCY MODE. LED THERMAL MANAGEMENT; SELF-CONTAINED LED EMERGENCY DRIVER; 120V; UL LISTED WET LOCATION; PHOTOCELL; INFRARED MOTION RESPONSE (IMR12); 5 YEAR WARRANTY	PHILIPS GARDCO: 121 LED SCONCE SERIES
EX	42	LED EXIT SIGN W/DIE CAST ALUMINUM HOUSING; WHITE BODY, BRUSHED ALUMINUM FACE; RED LED LAMPS; RED POLYCARBONATE LENS W/PRISMATIC DIFFUSER; 4.6V NiCd BATTERY; FULLY AUTOMATIC SOLID STATE CHARGER; FLAT OR OPENING MOUNTED AS REQUIRED; UL LISTED 924; 120V; 5-YEAR WARRANTY	HE WILLIAMS: EXIT/CA SERIES



- NOTES:**
- TYPE 'A' POLE HEIGHT IS 20'-0". TYPE 'A' FIXTURE IS RATED 136 WATTS, 128 LED's 350mA DRIVE CURRENT, 18,403 NOMINAL LUMENS, 70 CRI, 4000K.
 - TYPE 'B' POLE HEIGHT IS 12'-0". TYPE 'B' FIXTURE IS RATED 103 WATTS, 96 LED's, 350mA DRIVE CURRENT, 13,936 NOMINAL LUMENS, 70 CRI, 4000K.

100 AMP MAIN BREAKER										100 AMP BUS RATING										42 POLES									
208/120 VOLTS										3 PHASE										4 WIRE									
60 Hz.										LOAD KVA										BREAKER									
ELECTRONIC GRADE: NO										10 KA SHORT-CIRCUIT RATING										LOCATION: ELECTRICAL BUILDING									
ENCLOSURE RATING: NEMA 1										MOUNTING: SURFACE																			
CIRCUIT NO.	DESCRIPTION	PHASE A	PHASE B	PHASE C	AMPS/POLES	NOTES	CIRCUIT NO.	DESCRIPTION	PHASE A	PHASE B	PHASE C	AMPS/POLES	NOTES																
1	MAS-1010-1 PANEL	0.2			20/1	5	2	FIT-2020	0.05			20/1	5																
3	CCTV RACK		0.2		20/1	5	4	EW-1		1.5		20/2	6																
5	PLC-DPS			0.3	20/1	5	6				1.5	20/2	6																
7	SPARE				20/1	5	8	EUH-1	1.5			20/2	6																
9	FIT/FE-1030		0.05		20/1	5	10			1.5		20/2	6																
11	FIT/FE-2020			0.05	20/1	5	12	EF-1			0.05	20/1	5																
13	TOILET ROOM RECPT	0.18			20/1	5	14	GEN-A ENGINE CONTROLS	0.2			20/1	5																
15	ELECTRICAL BUILDING LIGHTING		0.5		20/1	5	16	GEN-A BATTERY CHARGER		0.2		20/1	5																
17	ELECTRICAL BUILDING RECPT			0.72	20/1	5	18	GEN-A JACKET WATER HEATER			0.75	20/2	6																
19	ELECTRICAL BUILDING EXT RECPT	0.72			20/1	5	20		0.75			20/2	6																
21	SITE LIGHTING ENTRY		0.42		20/1	5	22	FUEL SYSTEM LEAK PANEL		0.05		20/1	5																
23	SITE LIGHTING EXSTRUCTURE			0.9	20/1	5	24	SPARE				20/1																	
25	SPARE				20/1		26	SPARE				20/1																	
27	SPARE				20/1		28	SPARE				20/1																	
29	SPARE				20/1		30	SPARE				20/1																	
31	SPARE				20/1		32	SPARE				20/1																	
33	SPARE				20/1		34	SPARE				20/1																	
35	SPARE				20/1		36	SPARE				20/1																	
37	SPARE				20/1		38	SPARE				20/1																	
39	SPARE				20/1		40	SPARE				20/1																	
41	SPARE				20/1		42	SPARE				20/1																	
TOTAL PHASE KVA THIS SIDE		1.1	1.17	1.97			TOTAL PHASE KVA THIS SIDE		2.5	3.25	2.3																		
								TOTAL KVA PER PHASE		3.6	4.42	4.27																	
								TOTAL THREE PHASE KVA		12.29																			

- NOTES:**
- PROVIDE LOCKING HARDWARE
 - 30 ma GFI CIRCUIT BREAKER FOR EQUIPMENT PROTECTION ONLY (HEAT TRACE)
 - BRANCH CIRCUIT WIRING: 3/4"C, 2#12 & 1#12G
- NOTES CONT.:**
- 2.5 ma GROUND FAULT INTERRUPTER (GFI) CIRCUIT BREAKER
 - PROVIDE LOCKING HARDWARE & PAINT BREAKER HANDLE RED (FACP)
 - BRANCH CIRCUIT WIRING: 1"C, 2#10 & 1#10G

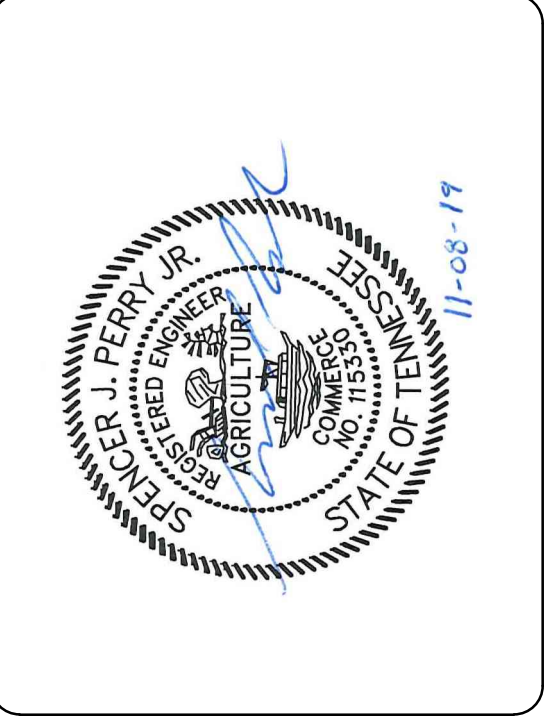
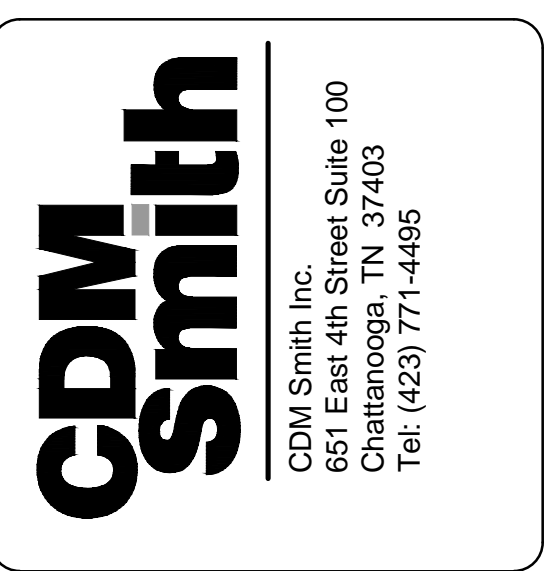
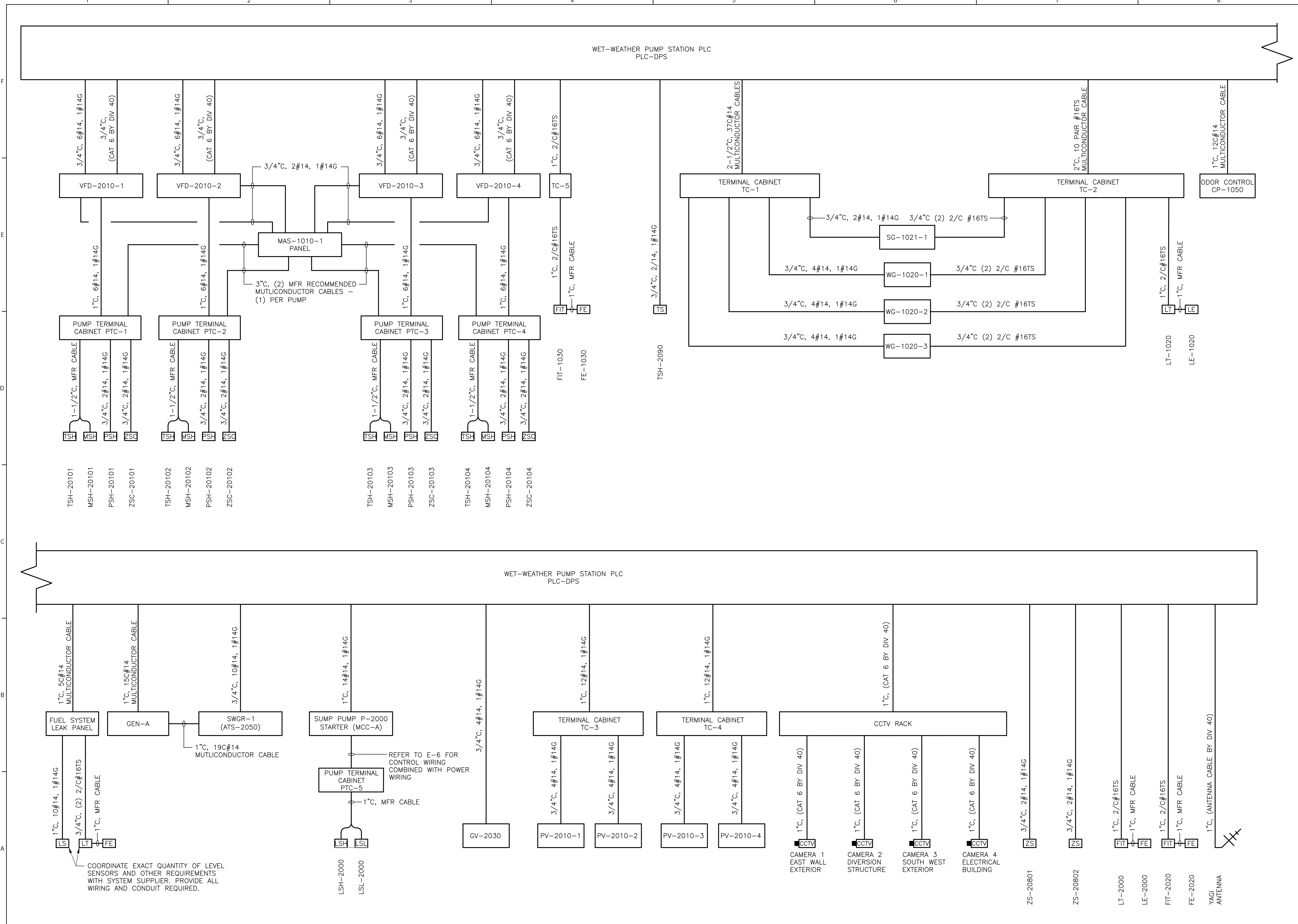


DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

REV	DATE	REVISION DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE
 THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: ER DESIGNER: RR CHECKER: SP
 SHEET TITLE ELECTRICAL
PANELBOARD AND LIGHTING FIXTURE SCHEDULES AND POLE MOUNTED DETAIL
 SHEET E-7
 ISSUED FOR BID

CREATED: 11/8/2019 LAST SAVED: 11/8/2019 BY: CARTERRH PLOT DATE: 11/8/2019 ©2019 CDM SMITH ALL RIGHTS RESERVED. THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



DUPONT PUMP STATION AND BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

REV	DATE	REVISION DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

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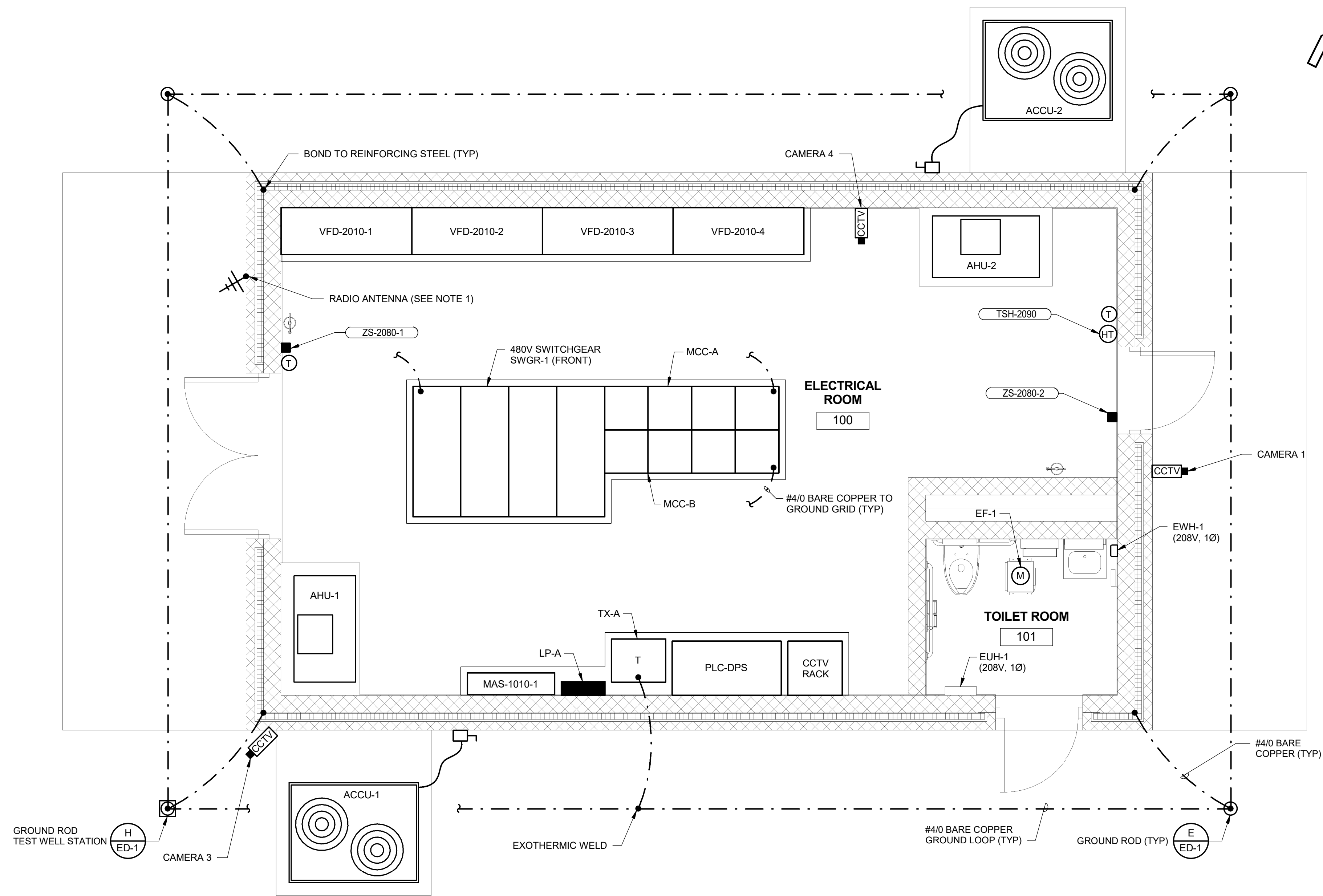
PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: ER
 DESIGNER: RR
 CHECKER: SP

SHEET TITLE: ELECTRICAL

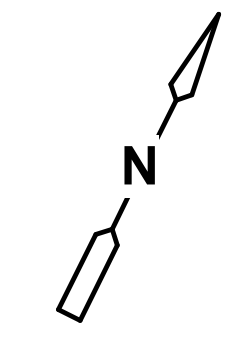
INSTRUMENTATION AND CONTROL RISER DIAGRAM

SHEET: E-8

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 PLOT DATE: 8/6/2008
 BY: CULPAR
 LAST SAVED: 11/8/2019
 CREATED: 11/8/2019

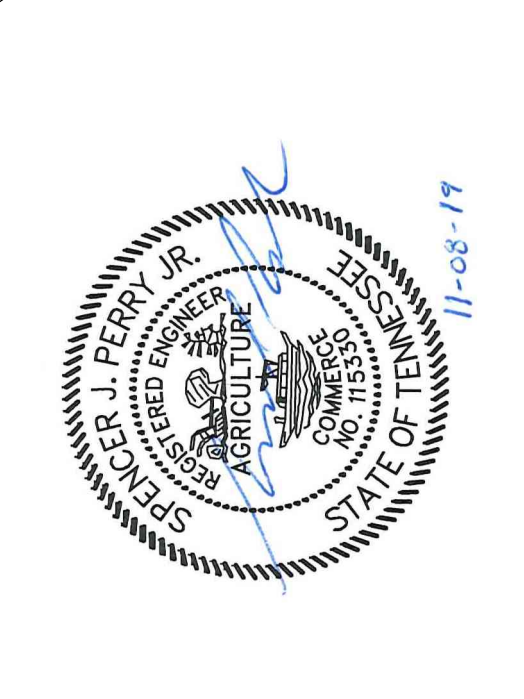


NOTE:
1. COORDINATE WITH OWNER FOR FINAL LOCATION.



PLAN
3/8" = 1'-0"

CDM Smith
 CDM Smith Inc.
 651 East 4th Street Suite 100
 Chattanooga, TN 37403
 Tel: (423) 771-4495



DUPONT PUMP STATION AND
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 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

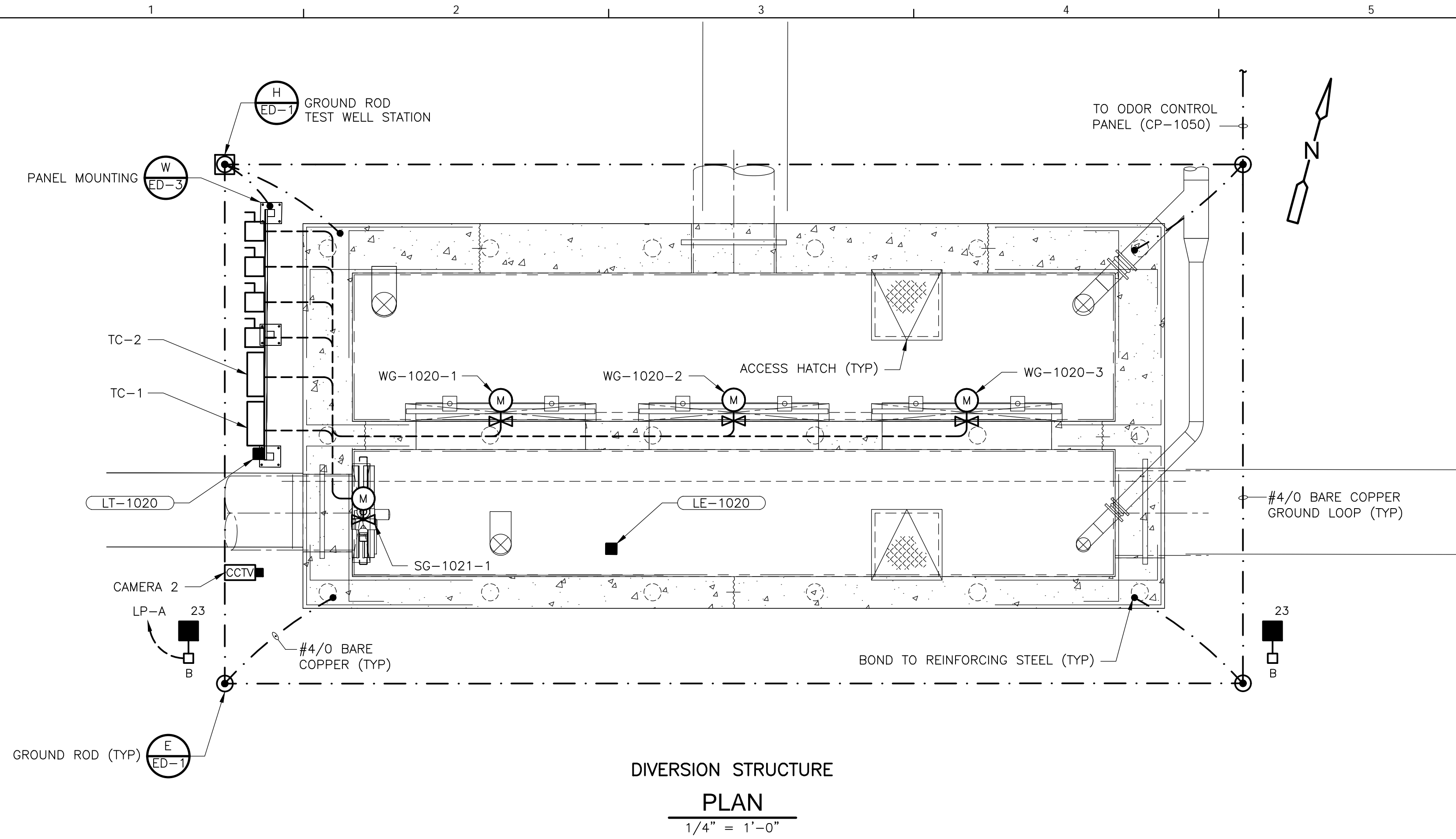
REV	DATE	REVISION DESCRIPTION

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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: DESIGNER: RR CHECKER: SP

SHEET TITLE
 ELECTRICAL
ELECTRICAL BUILDING POWER PLAN

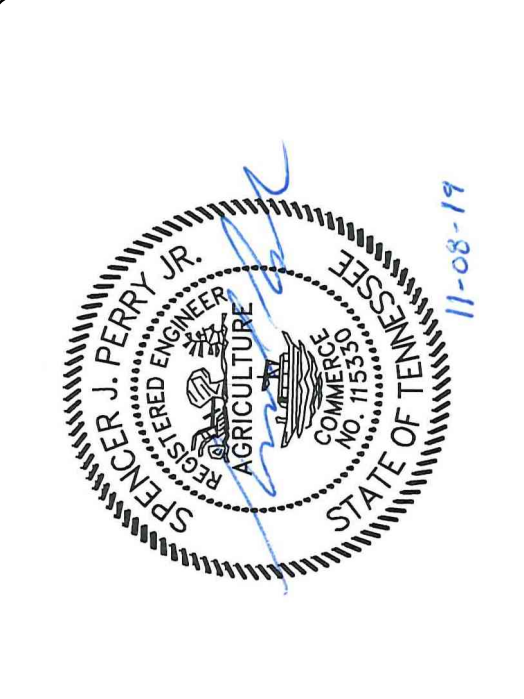
SHEET **E-10**

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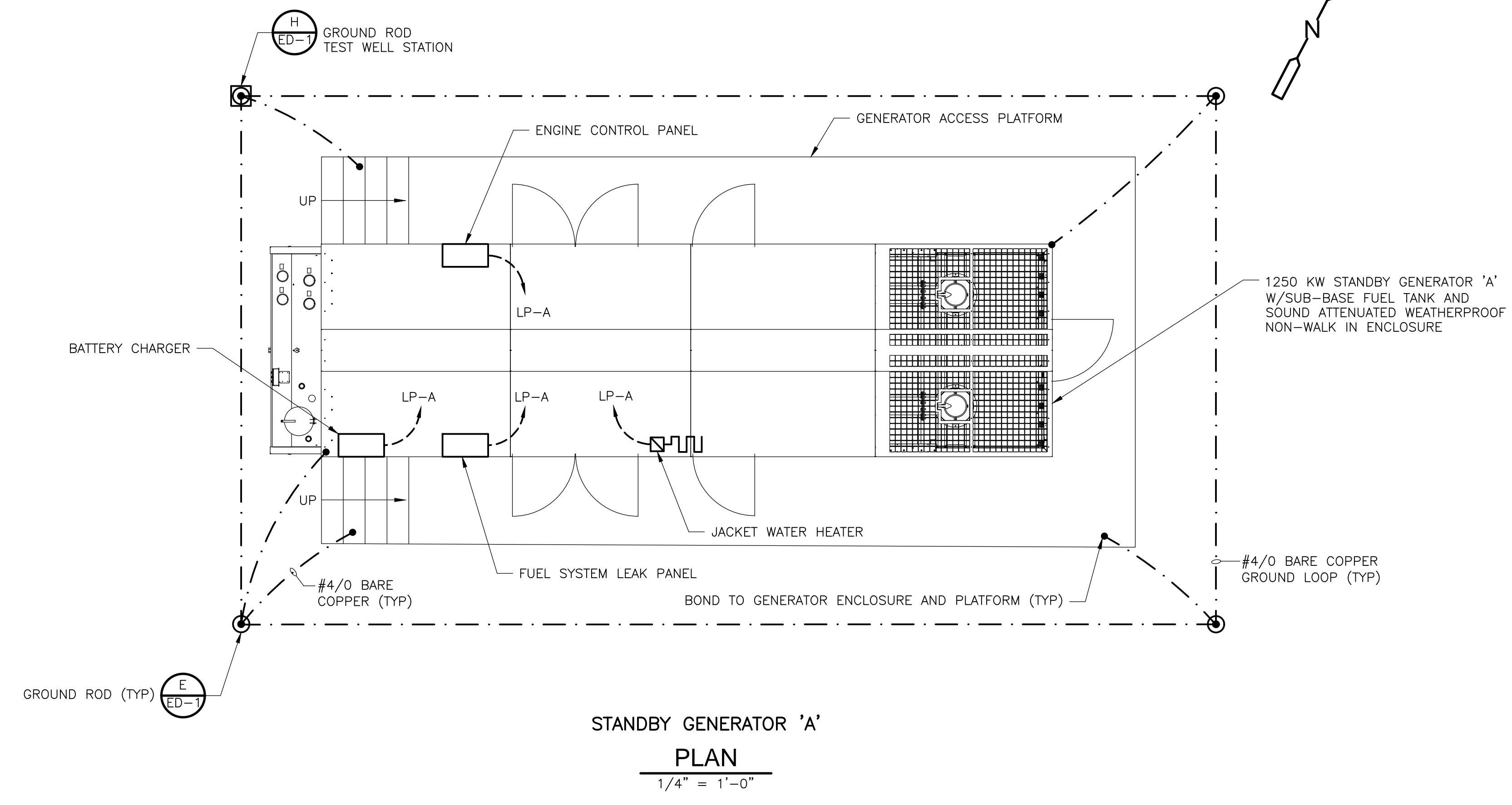
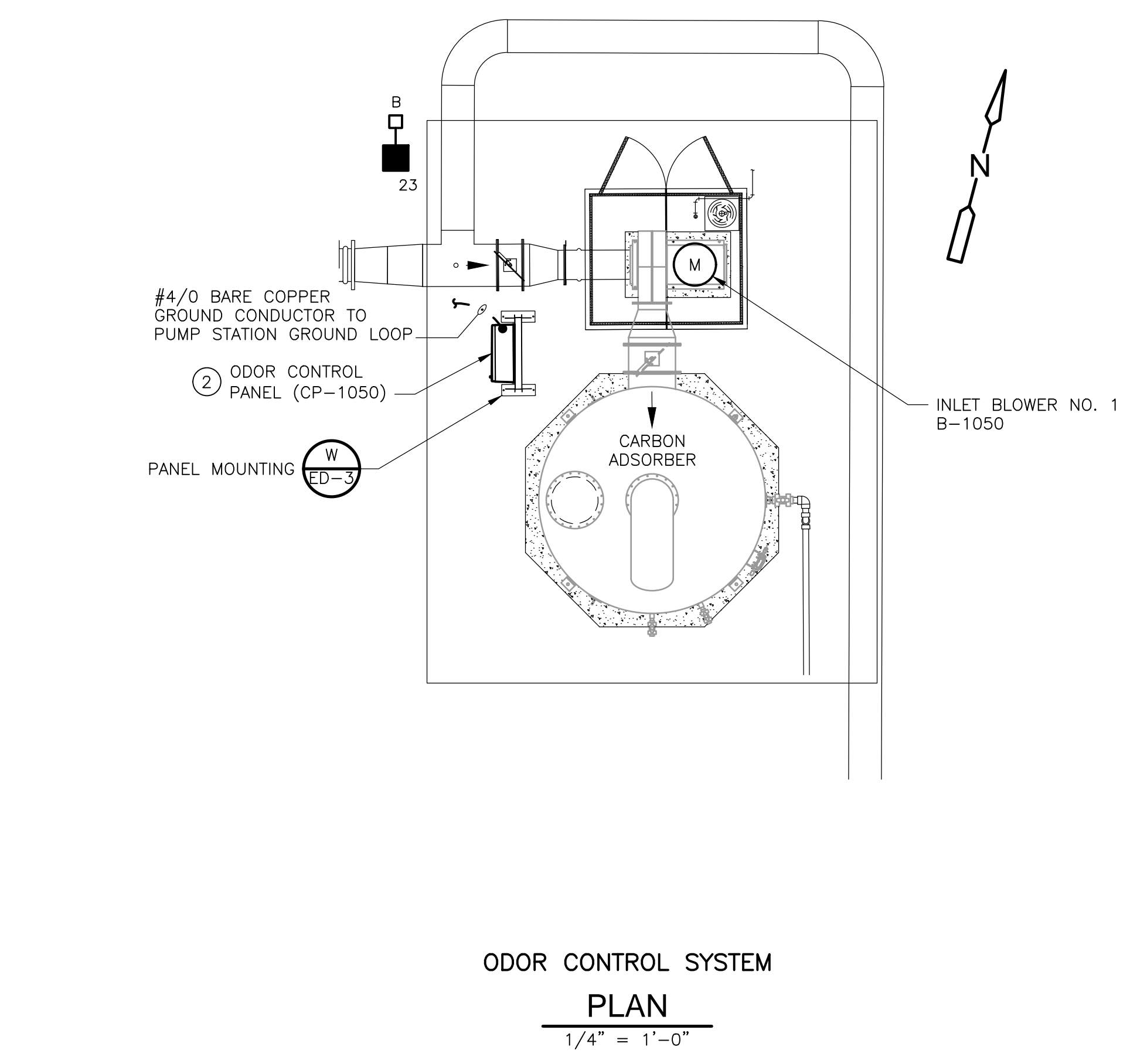


- NOTES:**
- ALL ELECTRICAL EQUIPMENT SHALL BE MOUNTED OUTSIDE CLASSIFIED AREAS. REFER TO SHEET E-3 FOR AREA CLASSIFICATION PLAN AND DETAILS.
 - REFER TO ONE-LINE DIAGRAM FOR WIRE AND CONDUIT DETAILS NOT SHOWN ON THIS SHEET.
 - REFER TO PANELBOARD SCHEDULES FOR WIRE AND CONDUIT DETAILS NOT SHOWN ON THIS SHEET.
 - PROVIDE SEAL OFF FITTINGS FOR CONDUITS THAT ENTER CLASSIFIED AREAS.
 - EQUIPMENT RACK STRUCTURES AND TERMINAL CABINETS SHALL BE SIZED AS REQUIRED.

- KEYED NOTES:**
- BOND #4/0 BARE COPPER WIRE TO STRUCTURAL STEEL AND ELECTRICAL EQUIPMENT.
 - PROVIDED BY DIVISION 44 AND INSTALLED BY DIVISION 26.
 - BOND #4/0 BARE COPPER WIRE TO ELECTRICAL EQUIPMENT.



DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

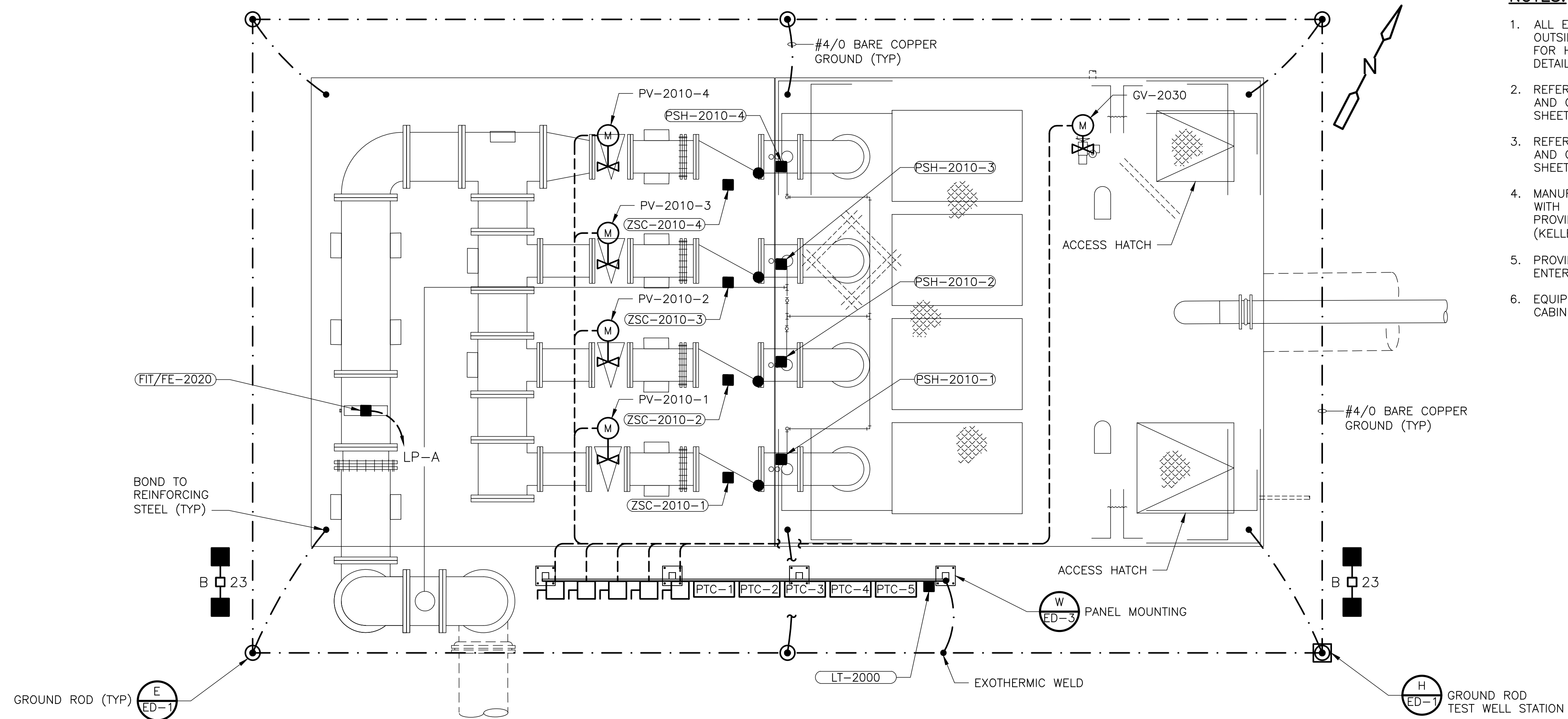


REV	DATE	REVISION DESCRIPTION

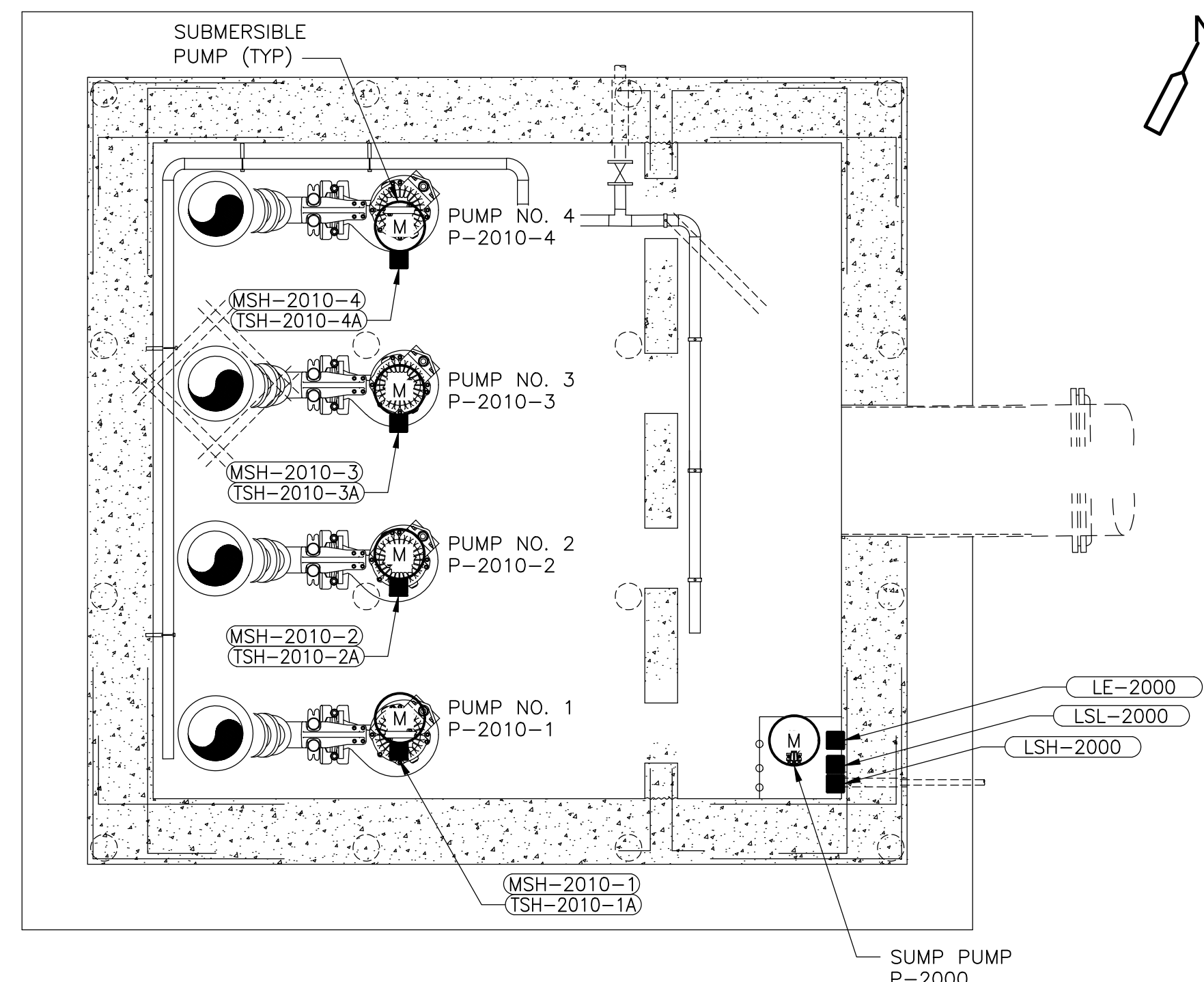
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 THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: ER DESIGNER: RR CHECKER: SP

SHEET TITLE: ELECTRICAL
 DIVERSION STRUCTURE, STANDBY GENERATOR AND ODOR CONTROL ELECTRICAL PLANS

CREATED: 11/8/2019 LAST SAVED: 11/8/2019 BY: CARTERRH PLOT DATE: 11/8/2019 ©2019 CDM SMITH ALL RIGHTS RESERVED. REUSE OF DOCUMENTS, THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



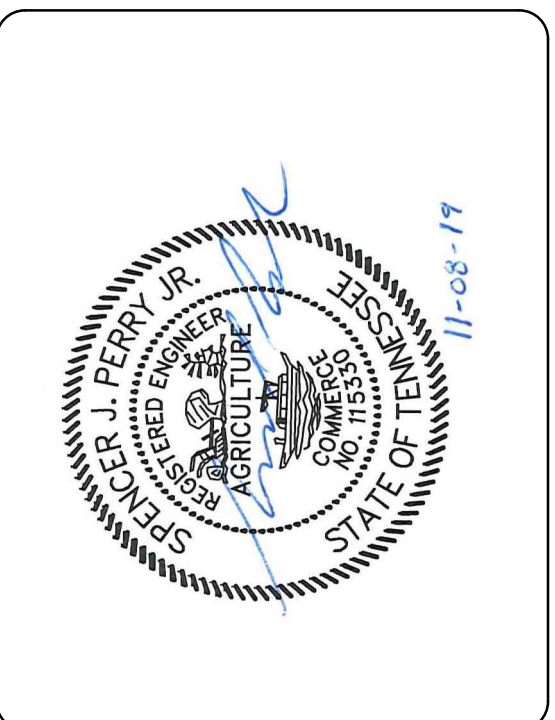
TOP PLAN
1/4" = 1'-0"



BOTTOM PLAN
1/4" = 1'-0"

NOTES:

1. ALL ELECTRICAL EQUIPMENT SHALL BE MOUNTED OUTSIDE CLASSIFIED AREAS. REFER TO SHEET E-3 FOR HAZARDOUS AREA CLASSIFICATION PLAN AND DETAILS.
2. REFER TO ONE LINE POWER DIAGRAM FOR WIRE AND CONDUIT DETAILS NOT SHOWN ON THIS SHEET.
3. REFER TO PANELBOARD SCHEDULES FOR WIRE AND CONDUIT DETAILS NOT SHOWN ON THIS SHEET.
4. MANUFACTURED CABLES SHALL BE SUPPORTED WITH CABLE HOLDERS PROVIDED BY DIVISION 43. PROVIDE 316 STAINLESS STEEL STRAIN RELIEF (KELLEM GRIP OR EQUAL).
5. PROVIDE SEAL OFF FITTINGS FOR CONDUITS THAT ENTER CLASSIFIED AREAS PER THE NEC.
6. EQUIPMENT RACK STRUCTURES AND TERMINAL CABINETS SHALL BE SIZED AS REQUIRED.

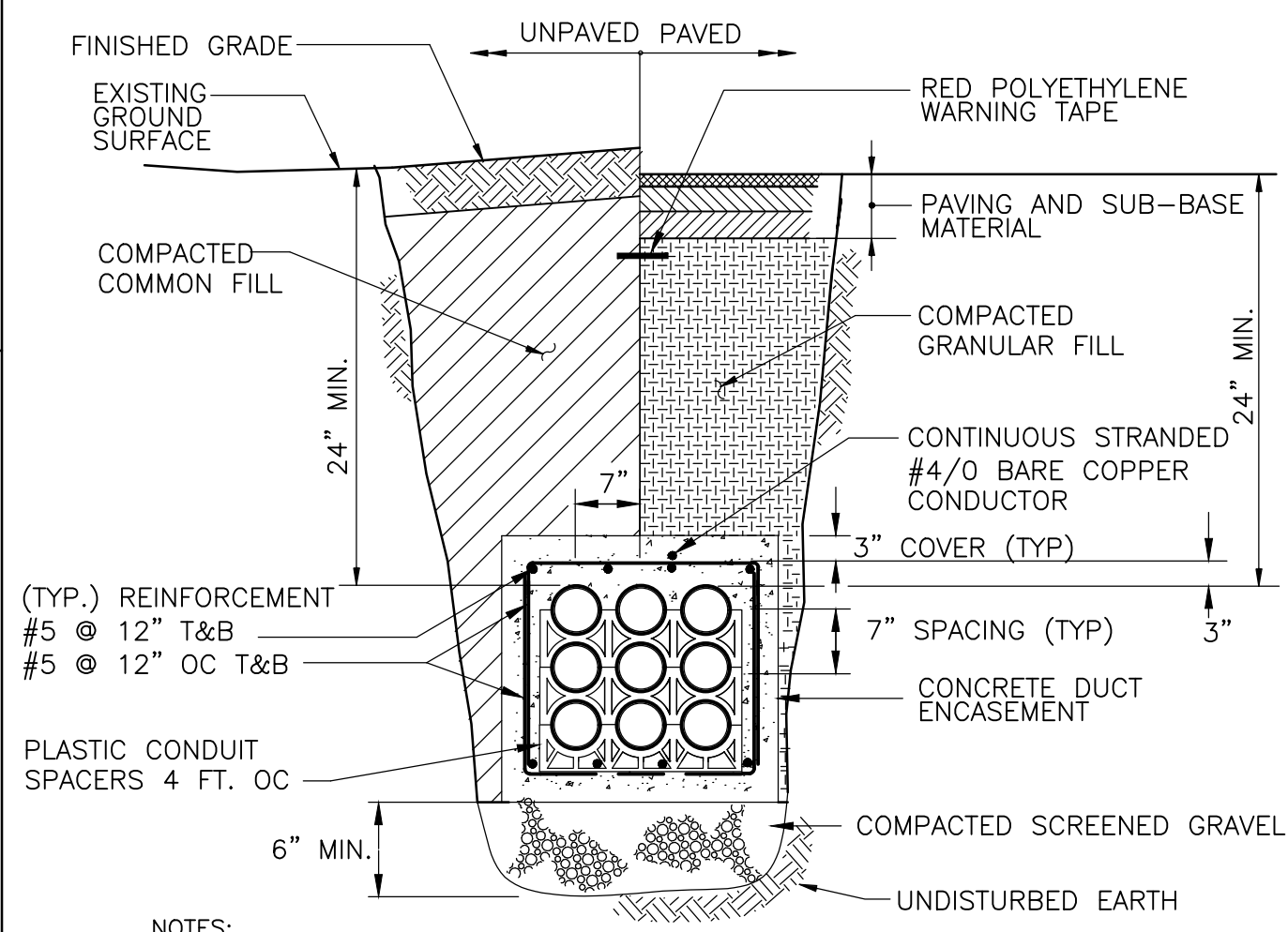


DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM

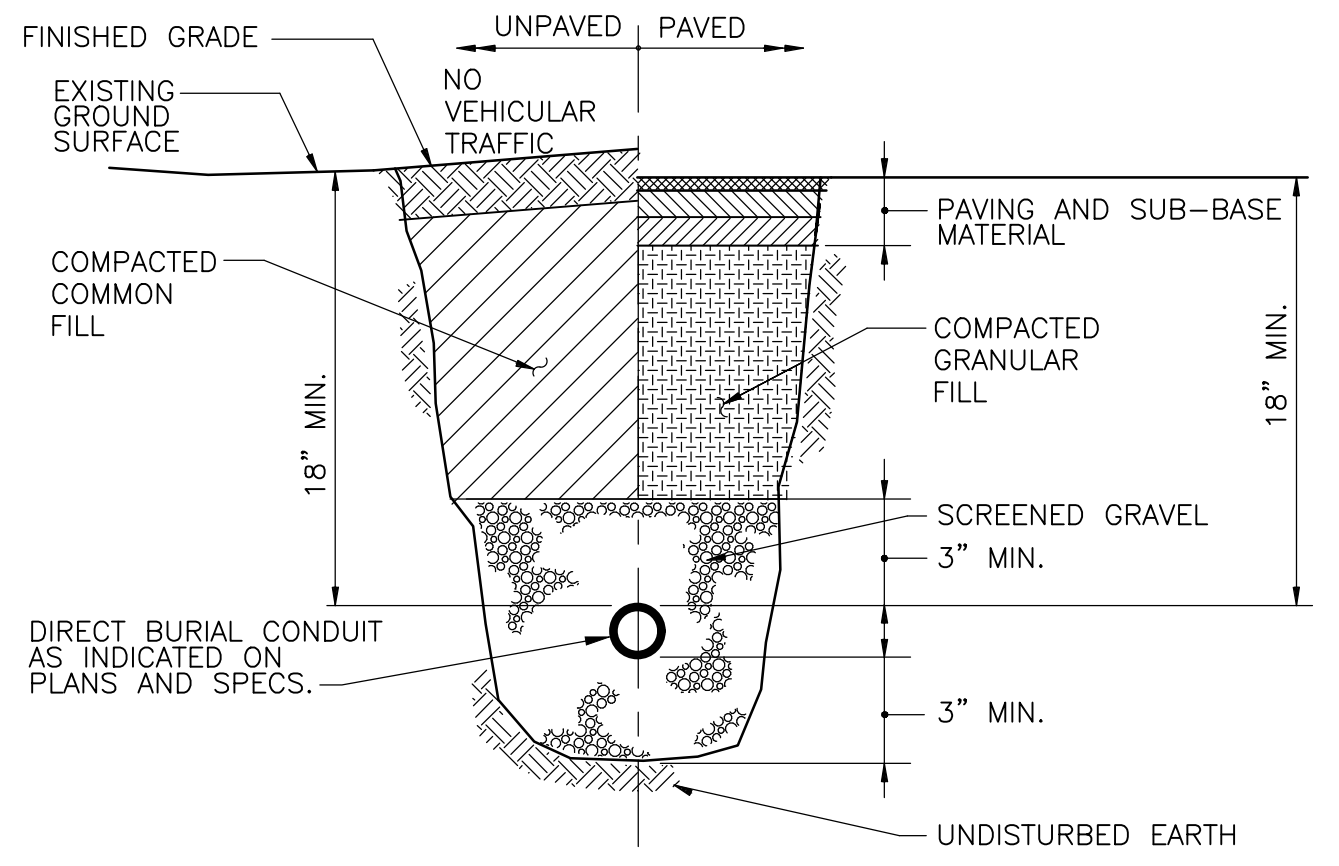
REV	DATE	REVISION DESCRIPTION

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THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
PROJECT NO: 129699-109746
DATE: NOVEMBER 2019
DISC. LEAD: ER DESIGNER: RR CHECKER: SP
SHEET TITLE: ELECTRICAL
WET-WEATHER PUMP STATION ELECTRICAL PLAN
SHEET E-13

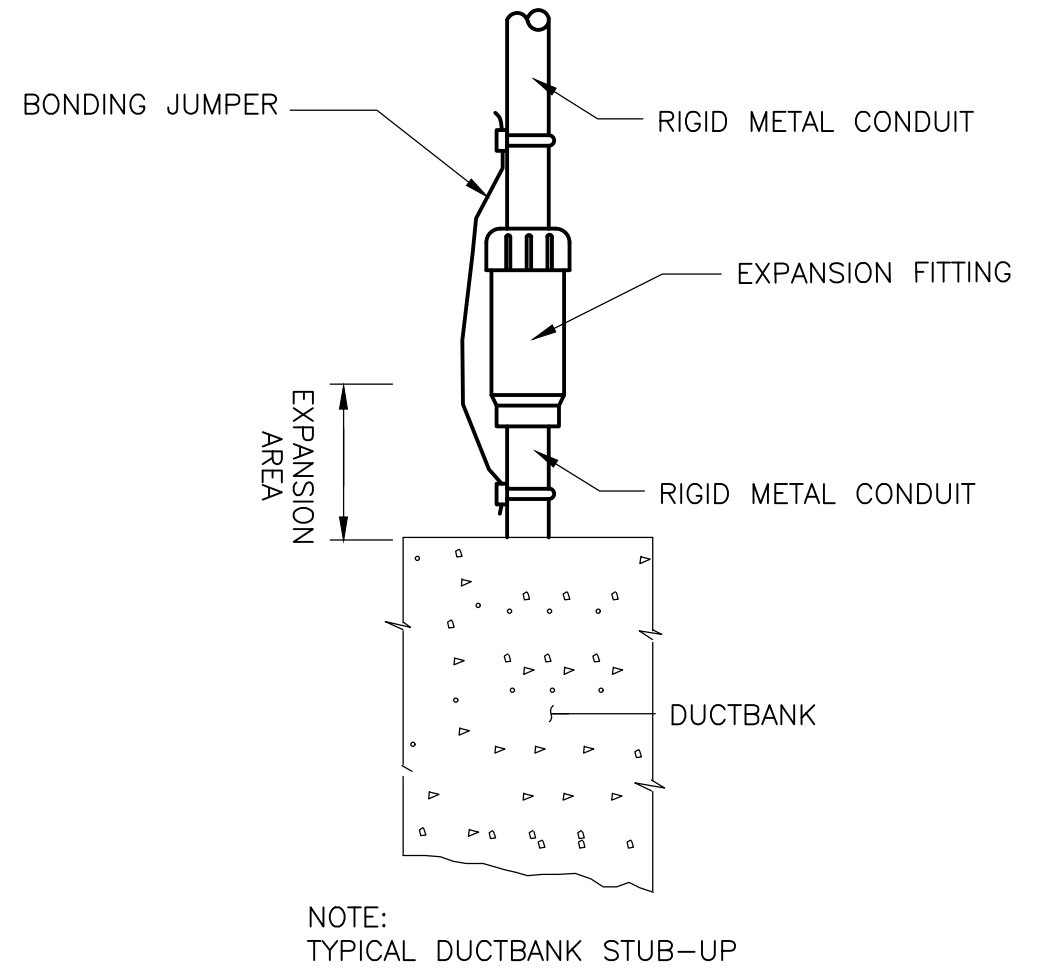
CREATED: 7/10/2019 LAST SAVED: 11/8/2019 BY: CARTERRH PLOT DATE: 11/8/2019 © 2019 CDM SMITH ALL RIGHTS RESERVED. REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



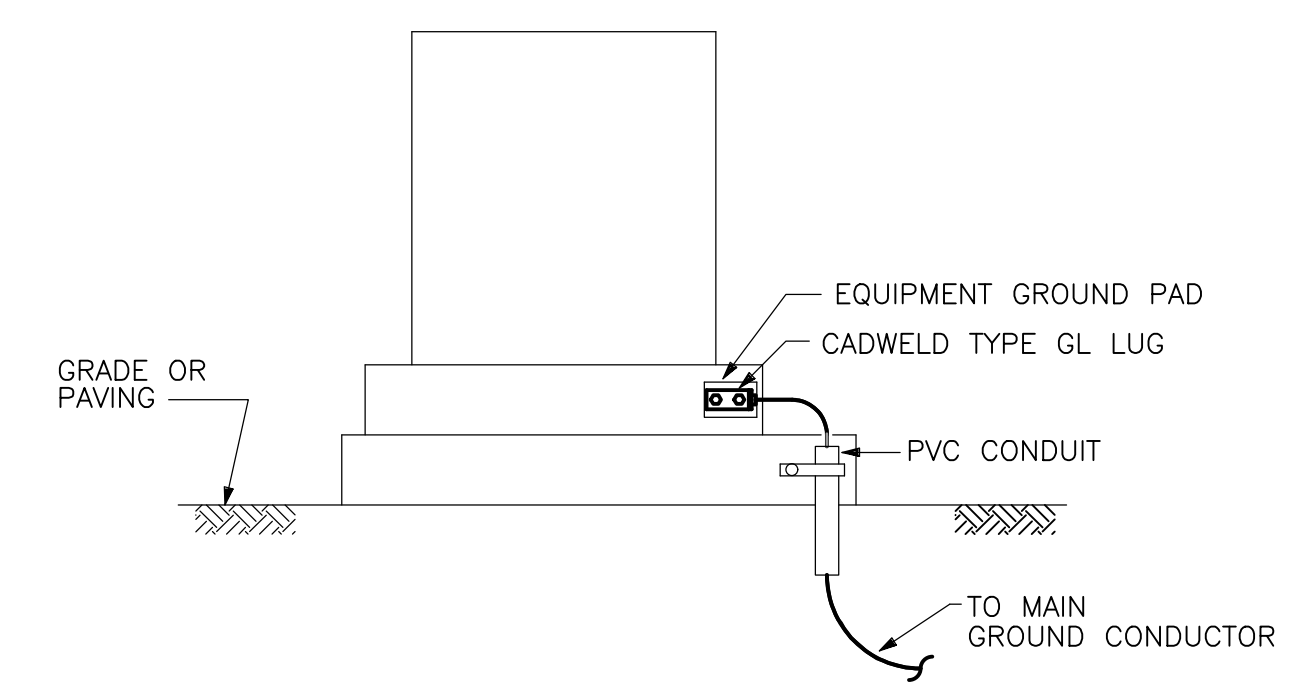
UNDERGROUND DUCTBANK
DETAIL A
N.T.S.



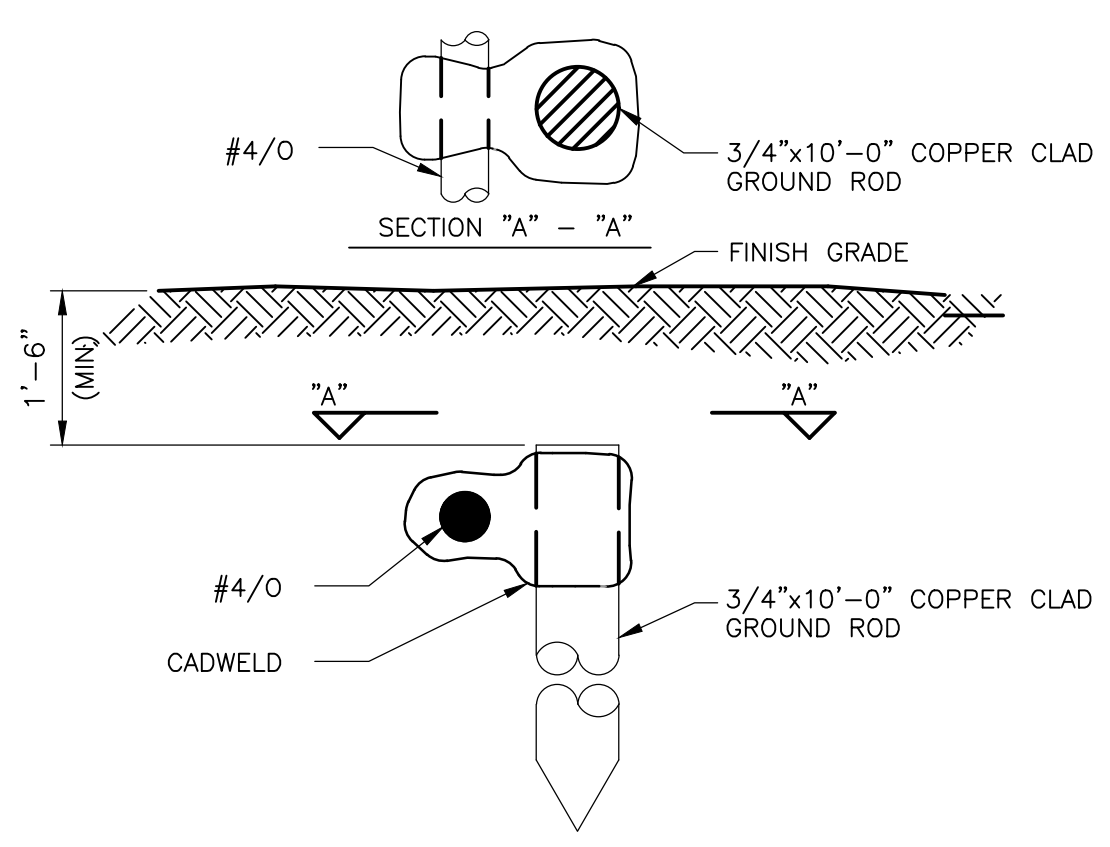
TYPICAL DIRECT BURIAL CONDUIT INSTALLATION
DETAIL B
N.T.S.



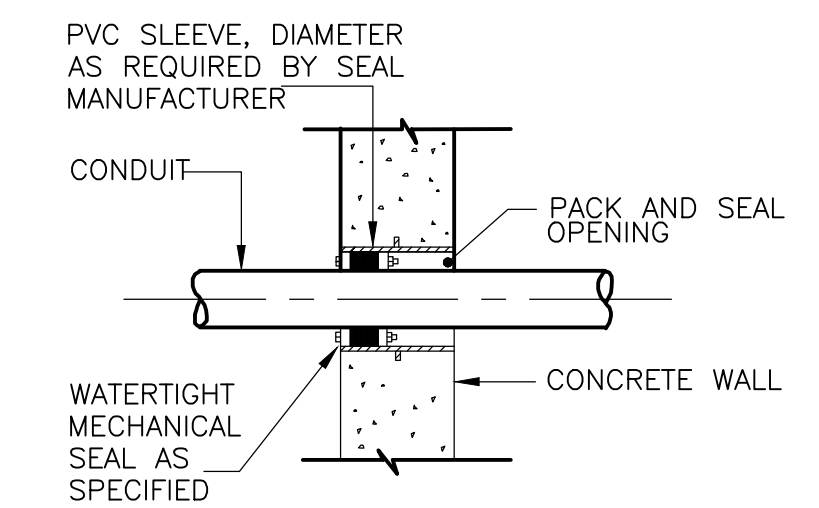
EXPANSION FITTING
DETAIL C
N.T.S.



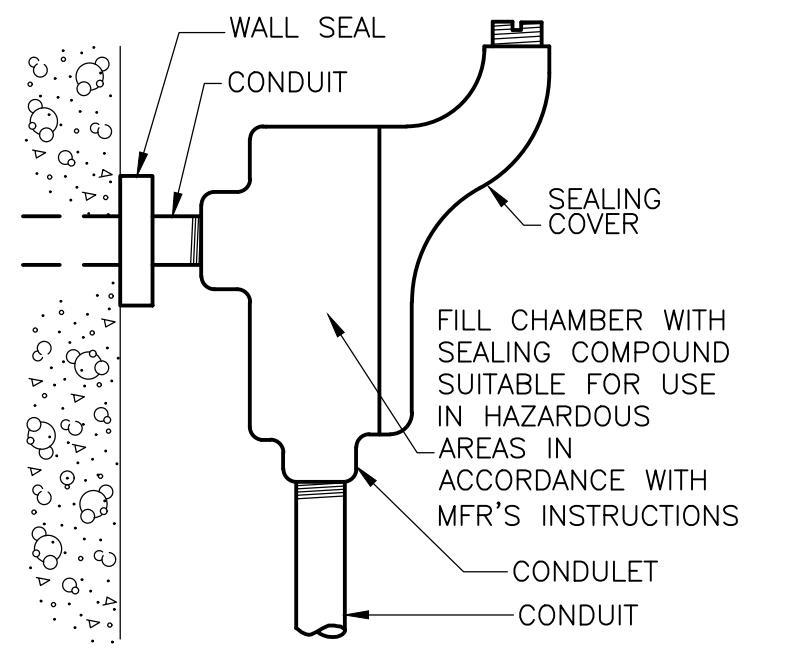
PAD MOUNTED EQUIPMENT GROUNDING
DETAIL D
N.T.S.



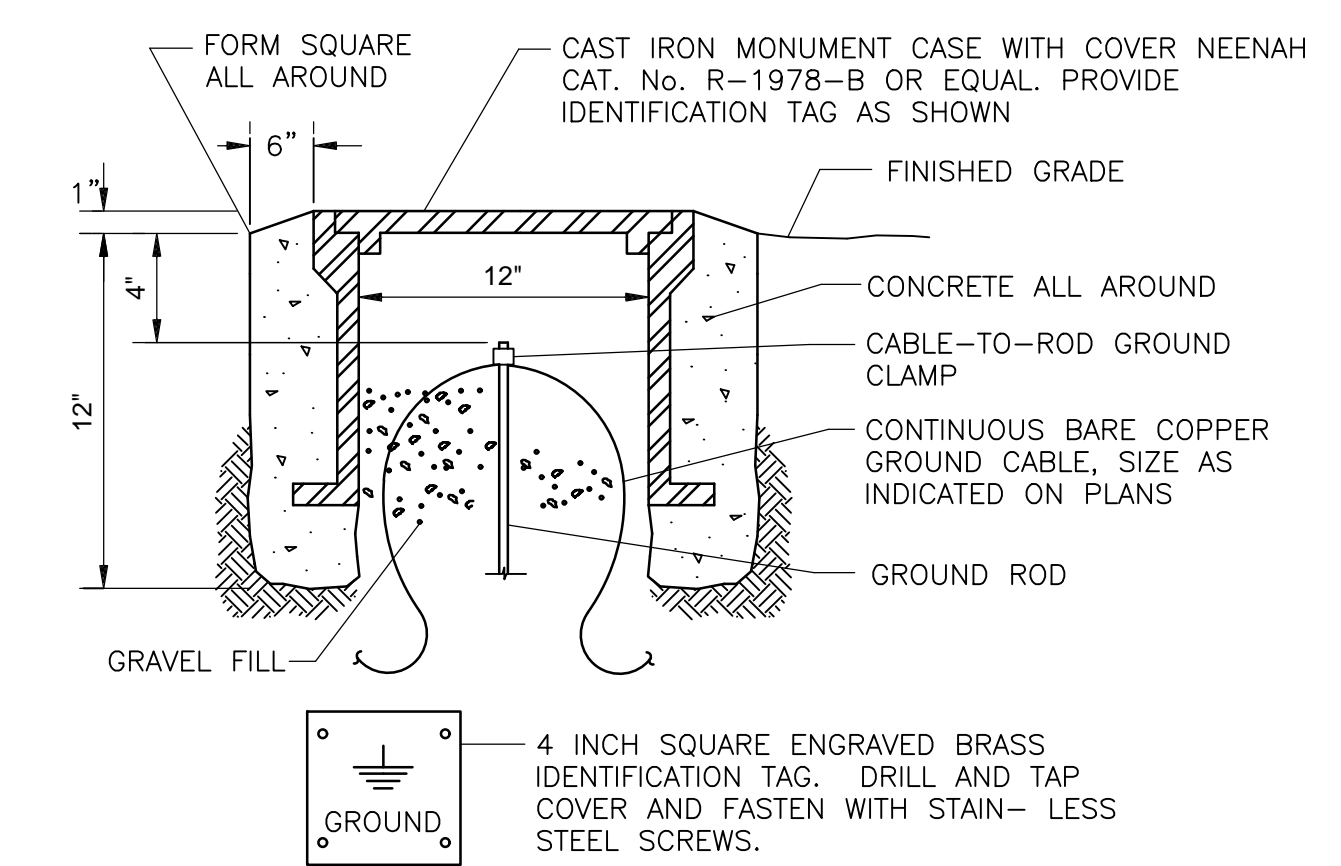
GROUND ROD
DETAIL E
N.T.S.



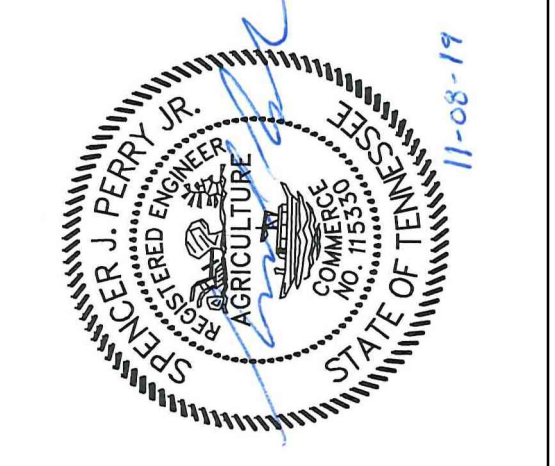
WATERTIGHT CONDUIT PENETRATION
DETAIL F
N.T.S.



CONDUIT SEALOFF FITTING
DETAIL G
N.T.S.



GROUND ROD TEST WELL
DETAIL H
N.T.S.

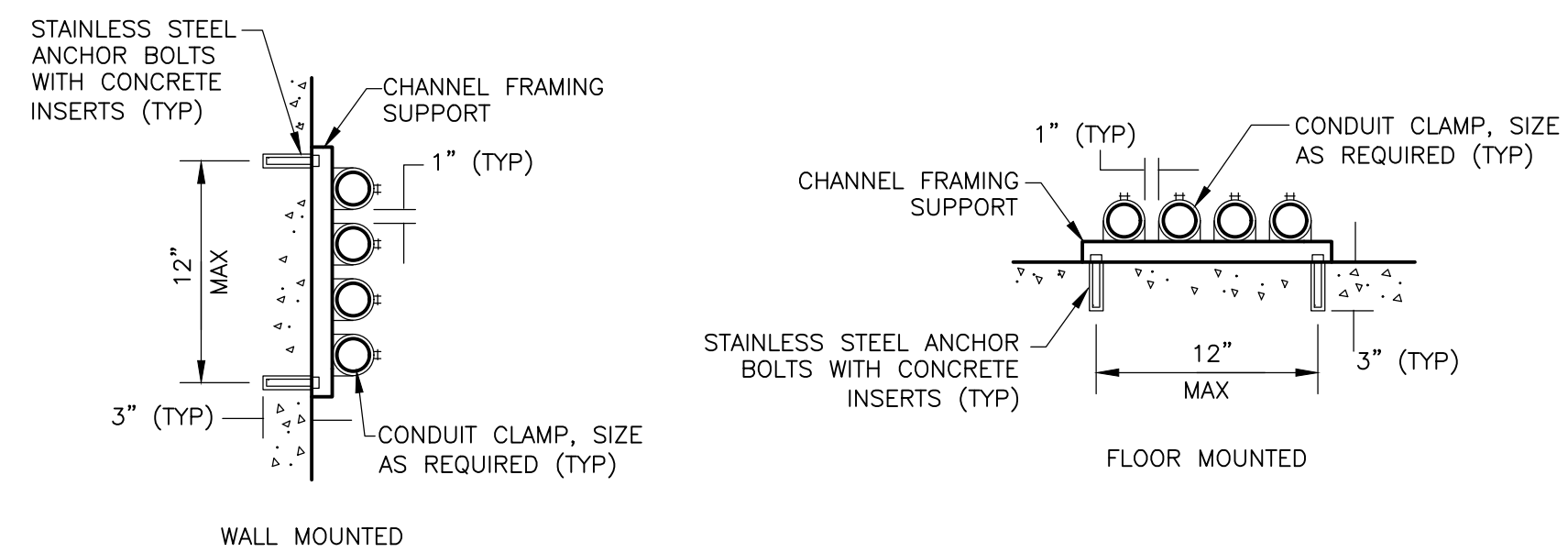


DUPONT PUMP STATION AND
BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
CITY OF CHATTANOOGA, TN
CONSENT DECREE PROGRAM

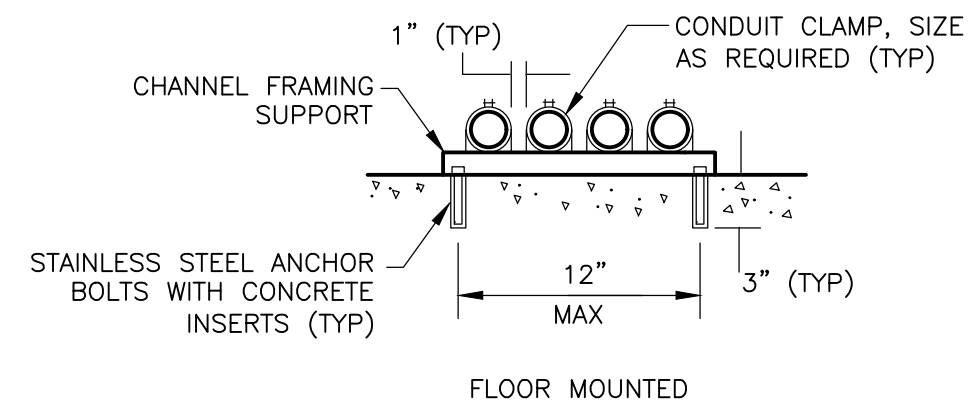
REV	DATE	REVISION DESCRIPTION

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PROJECT NO: 129699-109746
DATE: NOVEMBER 2019
DISC. LEAD: ER DESIGNER: RR CHECKER: SP
SHEET TITLE: ELECTRICAL
ELECTRICAL DETAILS I
SHEET: ED-1
ISSUED FOR BID

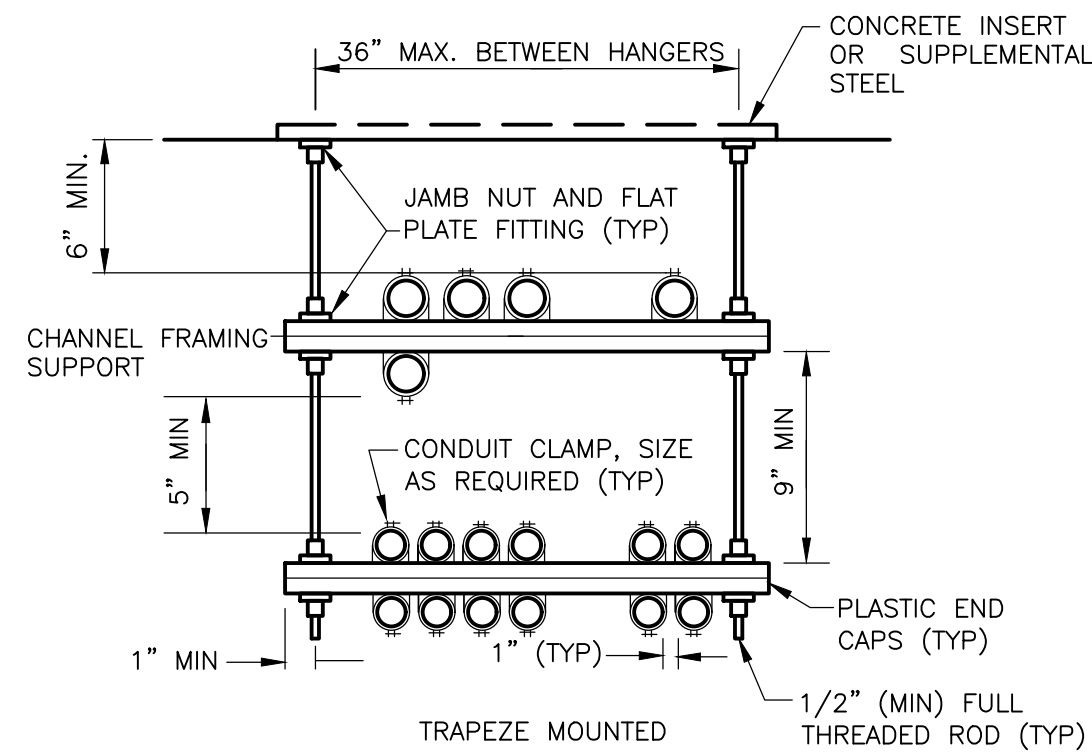
CREATED: 9/30/2019 LAST SAVED: 11/8/2019 BY: CARTERRH PLOT DATE: 11/8/2019 ©2019 CDM SMITH ALL RIGHTS RESERVED. REUSE OF DOCUMENTS, THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



WALL MOUNTED



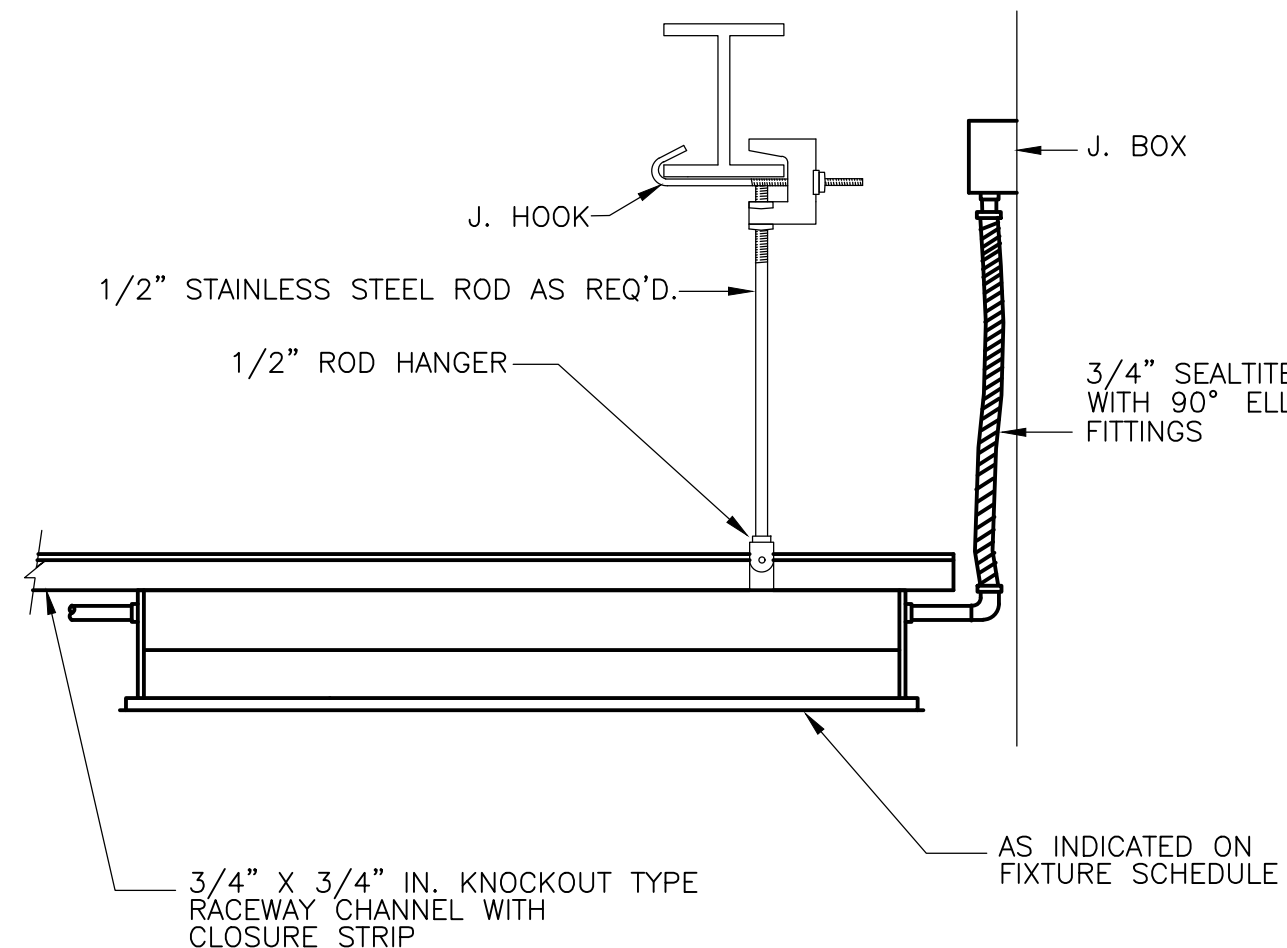
FLOOR MOUNTED



TRAPEZE MOUNTED

NOTE:
1. REFER TO DRAWING S-1 FOR SEISMIC CRITERIA AND WIND LOADS.

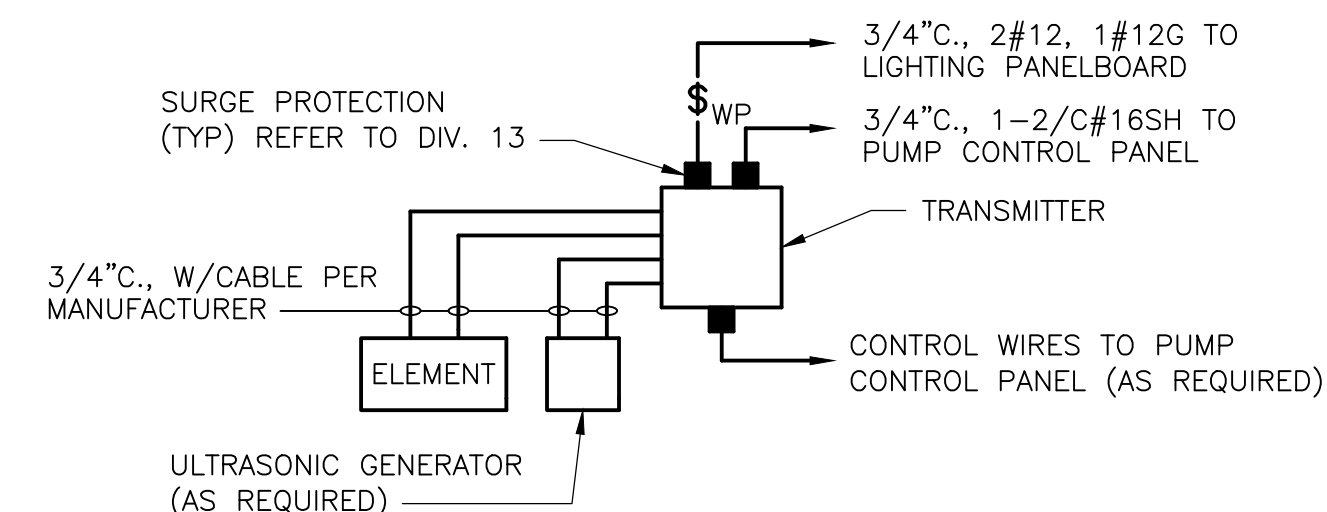
CONDUIT MOUNTING
DETAIL J
N.T.S.



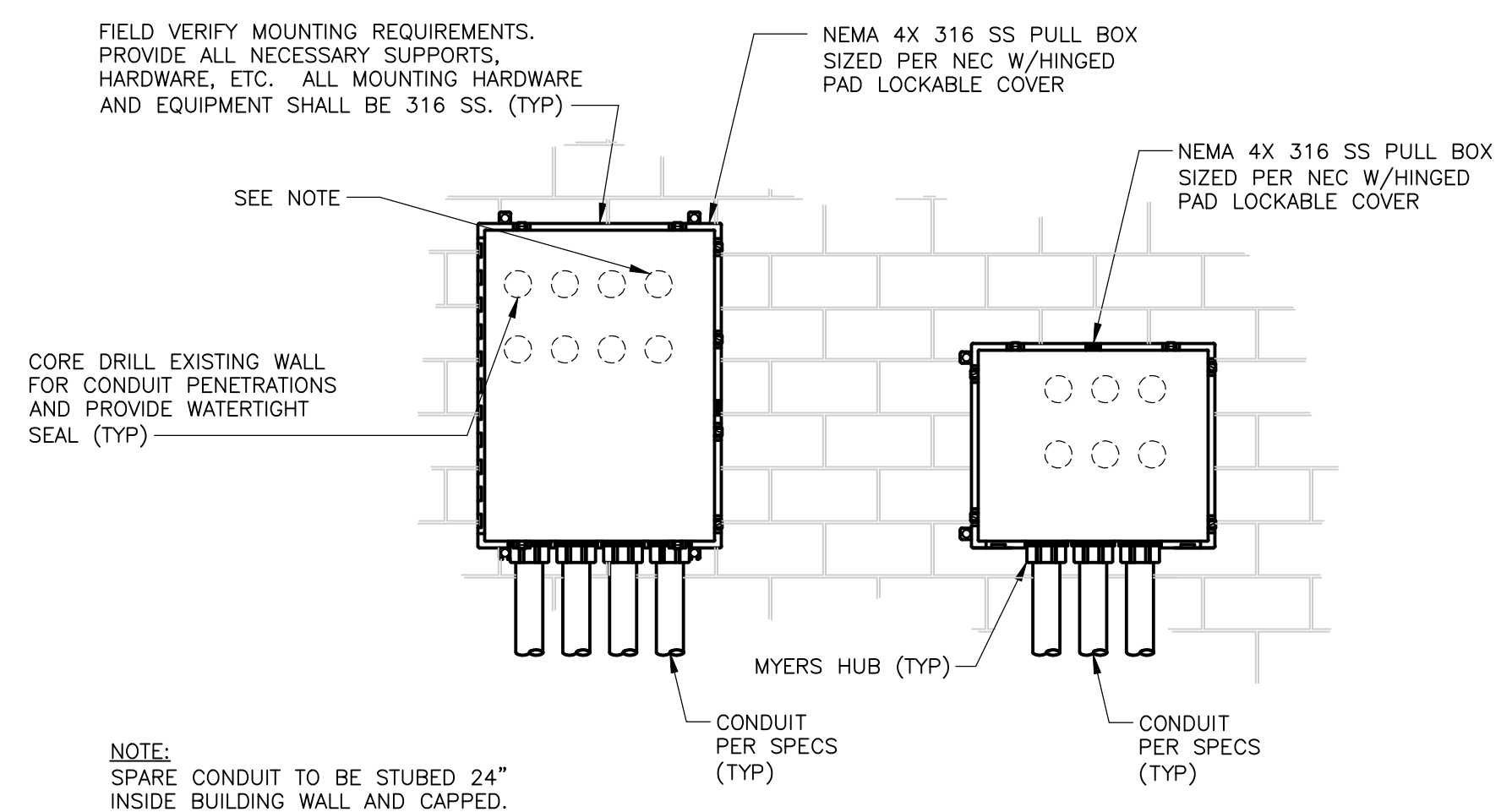
CHANNEL MOUNTED LIGHTING FIXTURE

- NOTES:
- USE THIS DETAIL IN AREAS WHERE THERE IS EXPOSED CEILING AND UNDERNEATH MEZZANINE DECKS OR CANOPIES.
 - LIGHT FIXTURES SHALL BE PROPERLY SUPPORTED TO MINIMIZE MOVEMENT. REFER TO STRUCTURAL DRAWING S-1 FOR SEISMIC CRITERIA AND WIND LOADS.

CHANNEL MOUNTED LIGHTING FIXTURE
DETAIL K
N.T.S.

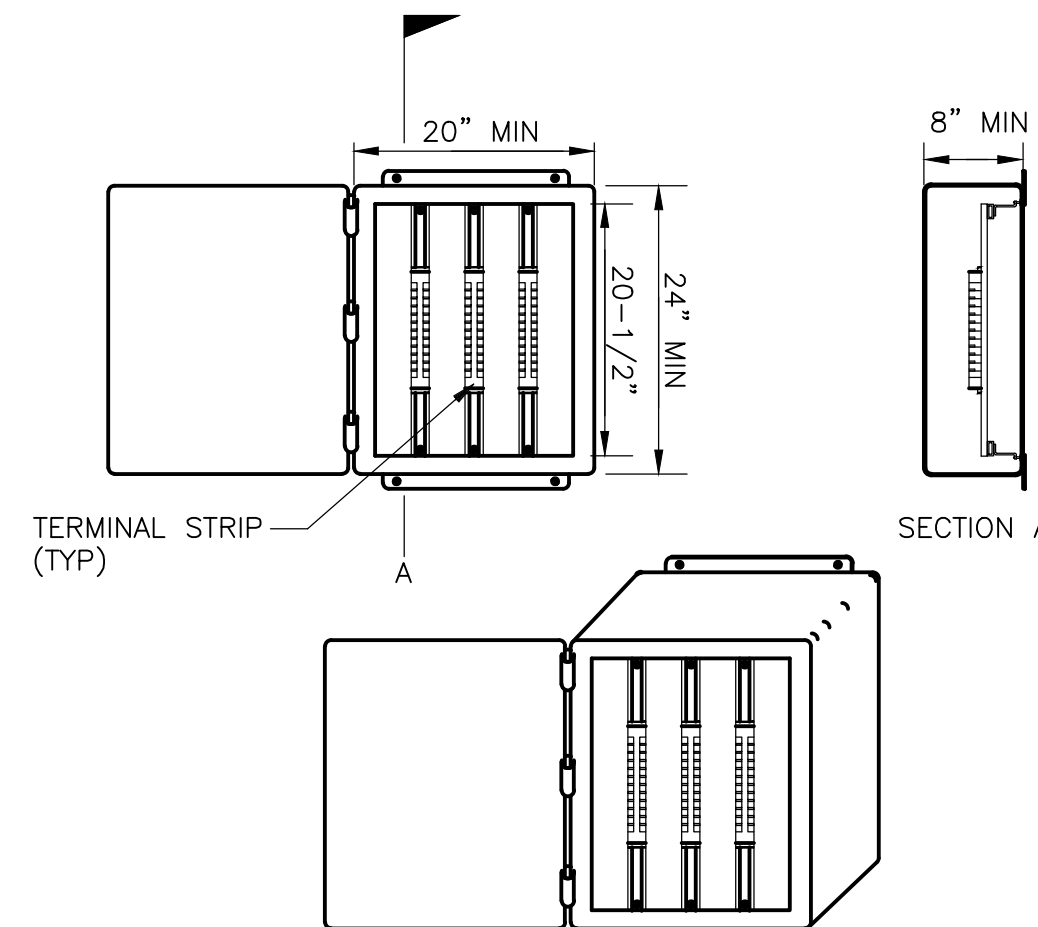


TYPICAL TRANSMITTER
DETAIL L
N.T.S.



ABOVE GRADE CONDUIT PENETRATION THROUGH EXISTING BUILDING
DETAIL M
N.T.S.

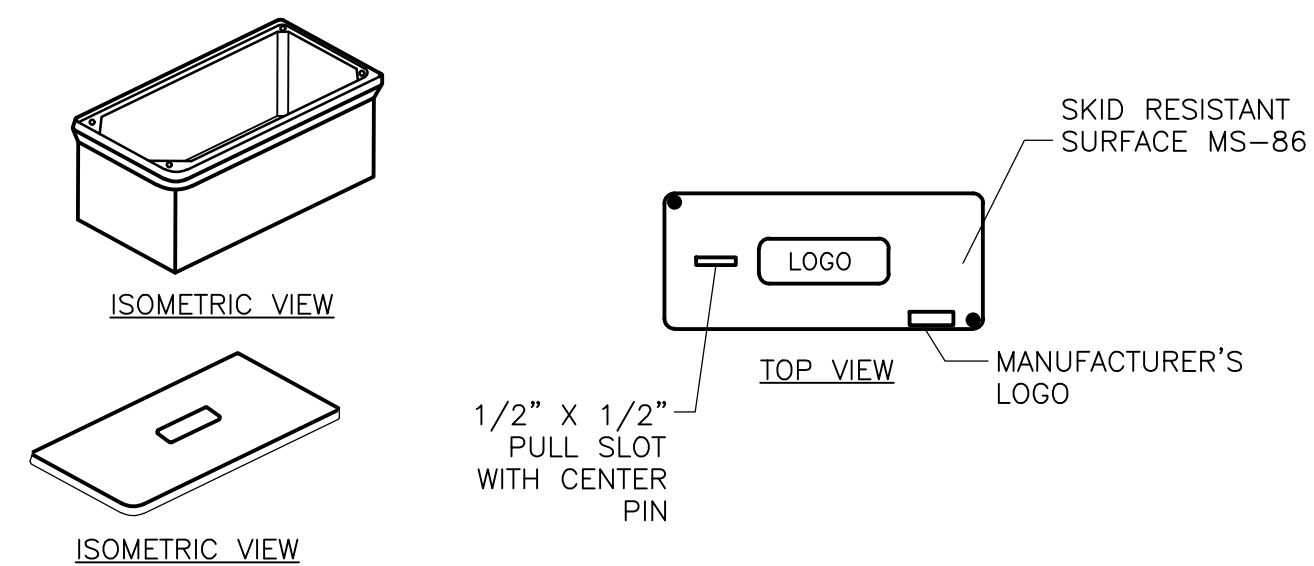
DIMENSIONS ARE MINIMUM AND SHALL BE INCREASED WHERE REQUIRED PER NEC.



TYPICAL TERMINAL CABINET

- NOTES:
- PROVIDE AND INSTALL NEMA 4X 316SS ENCLOSURE UNLESS NOTED OTHERWISE (UNO).
 - PROVIDE AND INSTALL ENOUGH TERMINALS TO SUPPORT DEVICES SHOWN ON CORRESPONDING SHEETS. PROVIDE SPARE TERMINALS PER DIV 26 SPECIFICATIONS.
 - UNIQUELY LABEL AND TERMINATE ALL CONDUCTORS.
 - DIMENSIONS GIVEN ARE MINIMUM. SIZE ENCLOSURE PER NEC WHERE APPLICABLE.

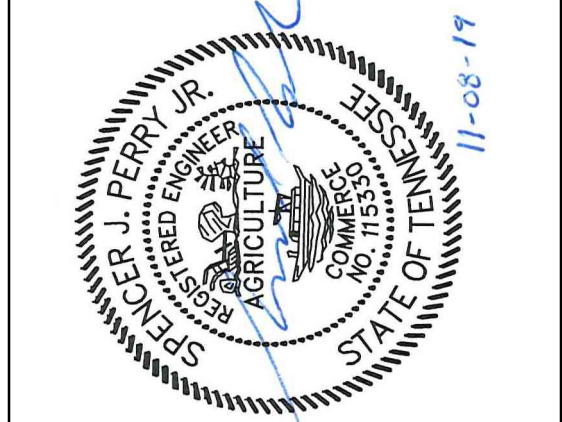
TYPICAL TERMINAL CABINET
DETAIL N
N.T.S.



LIGHTING HANDHOLE
DETAIL P
N.T.S.

NOTES:

- LOGO TO READ ELECTRICAL.
- FURNISHED WITH (2) 3/18"-16 UNC X 1-1/2" LG. S.S. HEX HD. BOLTS AND 3/8 FLAT WASHERS.
- COVER RATED PER SPECIFICATION DESIGN LOAD.
- PROVIDE WATERPROOF SPLICES AND CONNECTIONS.



DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

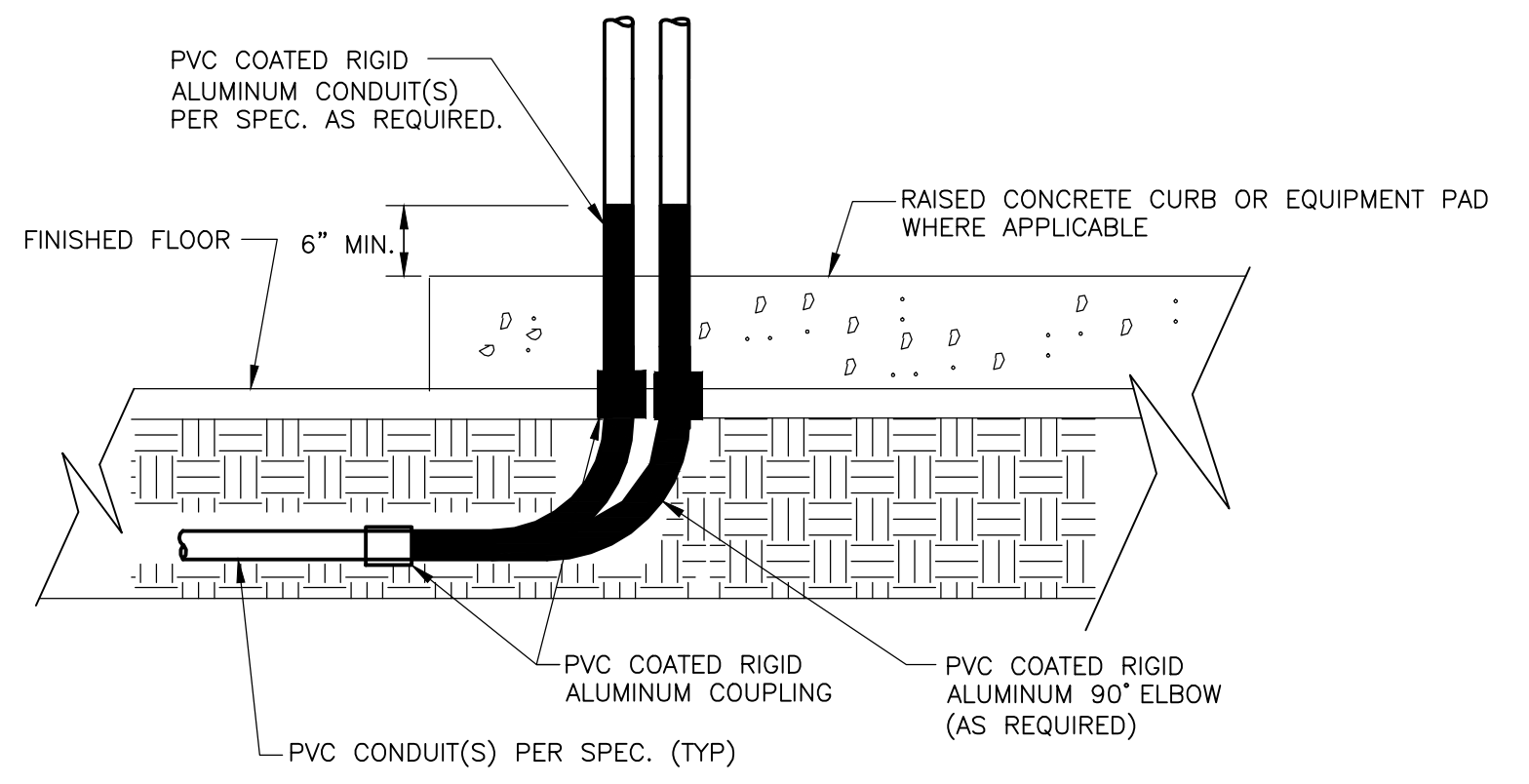


REV	DATE	REVISION DESCRIPTION

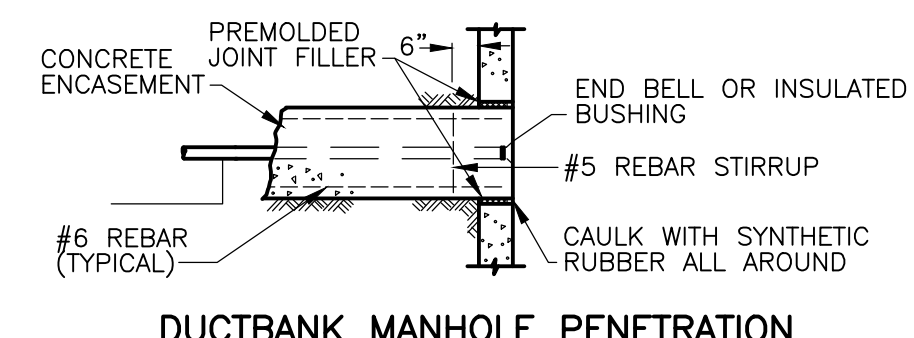
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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: ER DESIGNER: RR CHECKER: SP

SHEET TITLE: ELECTRICAL
 SHEET: ED-2
 ISSUED FOR BID

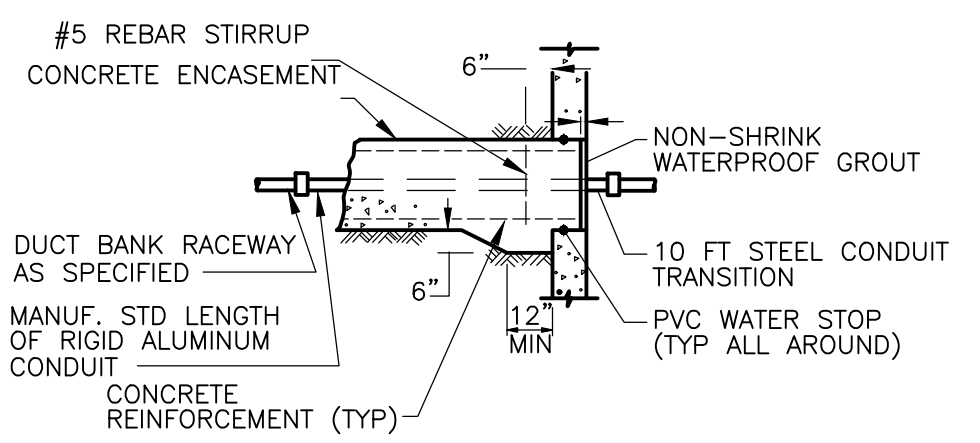
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BELOW GRADE CONDUIT STUB-UP



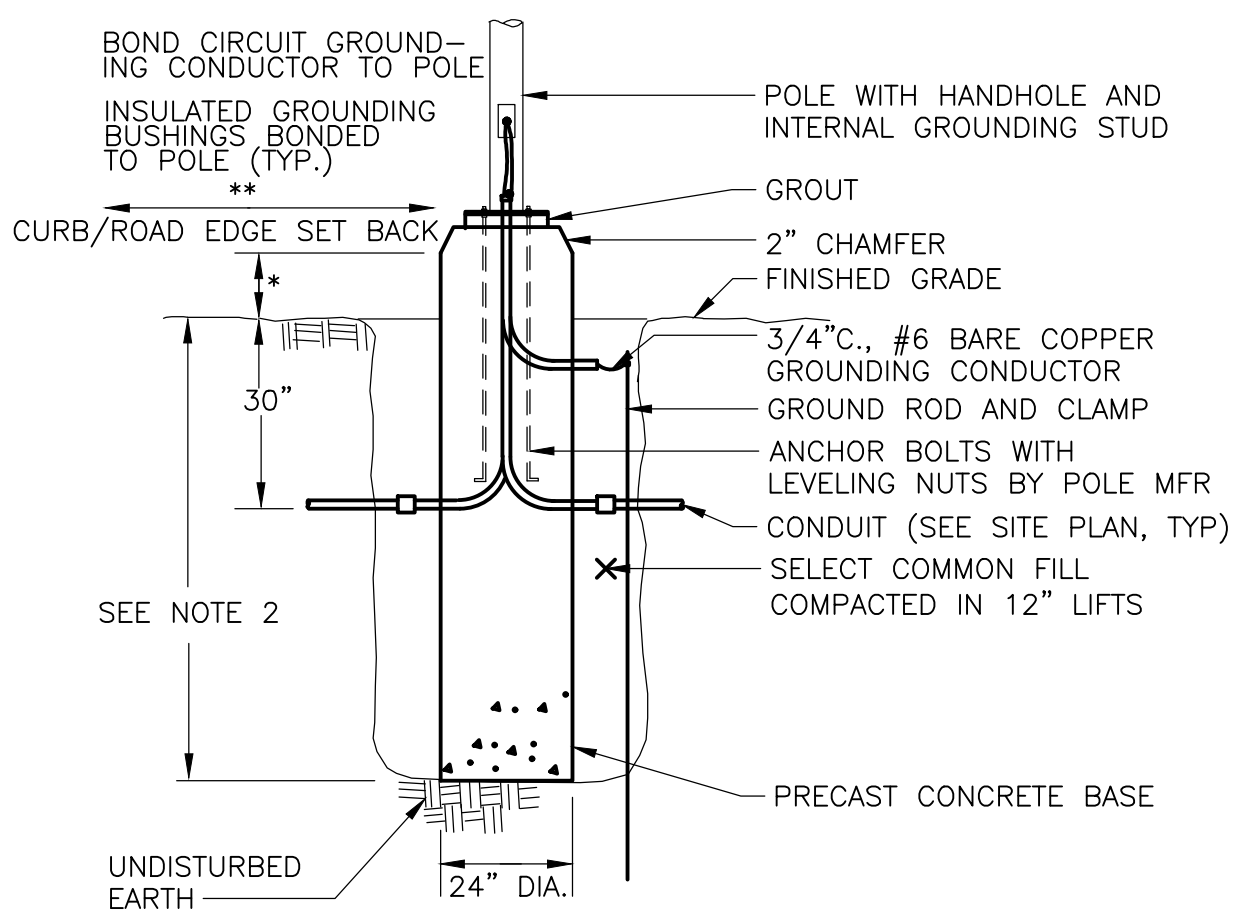
DUCTBANK MANHOLE PENETRATION



DUCTBANK STRUCTURE PENETRATION

TYPICAL CONDUIT TRANSITIONS

DETAIL R
N.T.S.



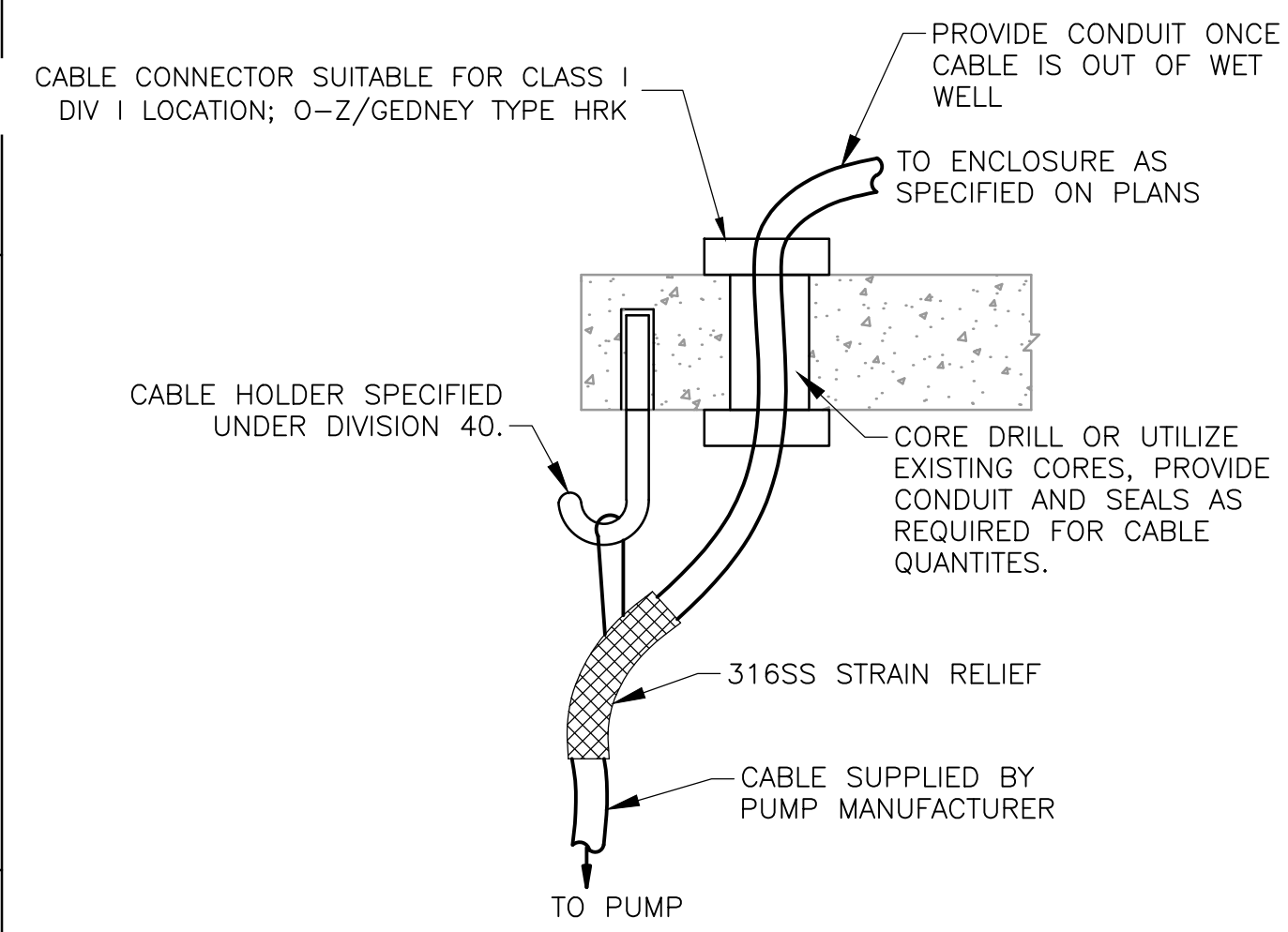
- * =2" AT WALKWAYS;
18" AT ROADWAYS
& PARKING AREAS
- ** =48" AT WALKWAYS;
24" AT ROADWAYS

NOTES:

1. LIGHT POLE FOUNDATION SHALL BE A PRECAST CONCRETE FOUNDATION DESIGNED BY A TENNESSEE REGISTERED PROFESSIONAL ENGINEER ENGAGED AT THE EXPENSE OF THE CONTRACTOR. DESIGN SPEED SHALL BE IN ACCORDANCE WITH ASCE 7-10 FOR THE PROJECT SPECIFIC SITE. CONTRACTOR SHALL CONFIRM SOIL CONDITIONS WITH A TENNESSEE REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER. DESIGN SHALL BE SIGNED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF TENNESSEE.
2. EMBEDMENT DEPTH AS REQUIRED PER DELEGATE ENGINEER. MIN. EMBEDMENT IN CLAYEY SOILS 6'-6", MIN EMBEDMENT IN SANDY SOILS 4'-6".
3. REFER TO SPECIFICATIONS FOR MATERIALS.

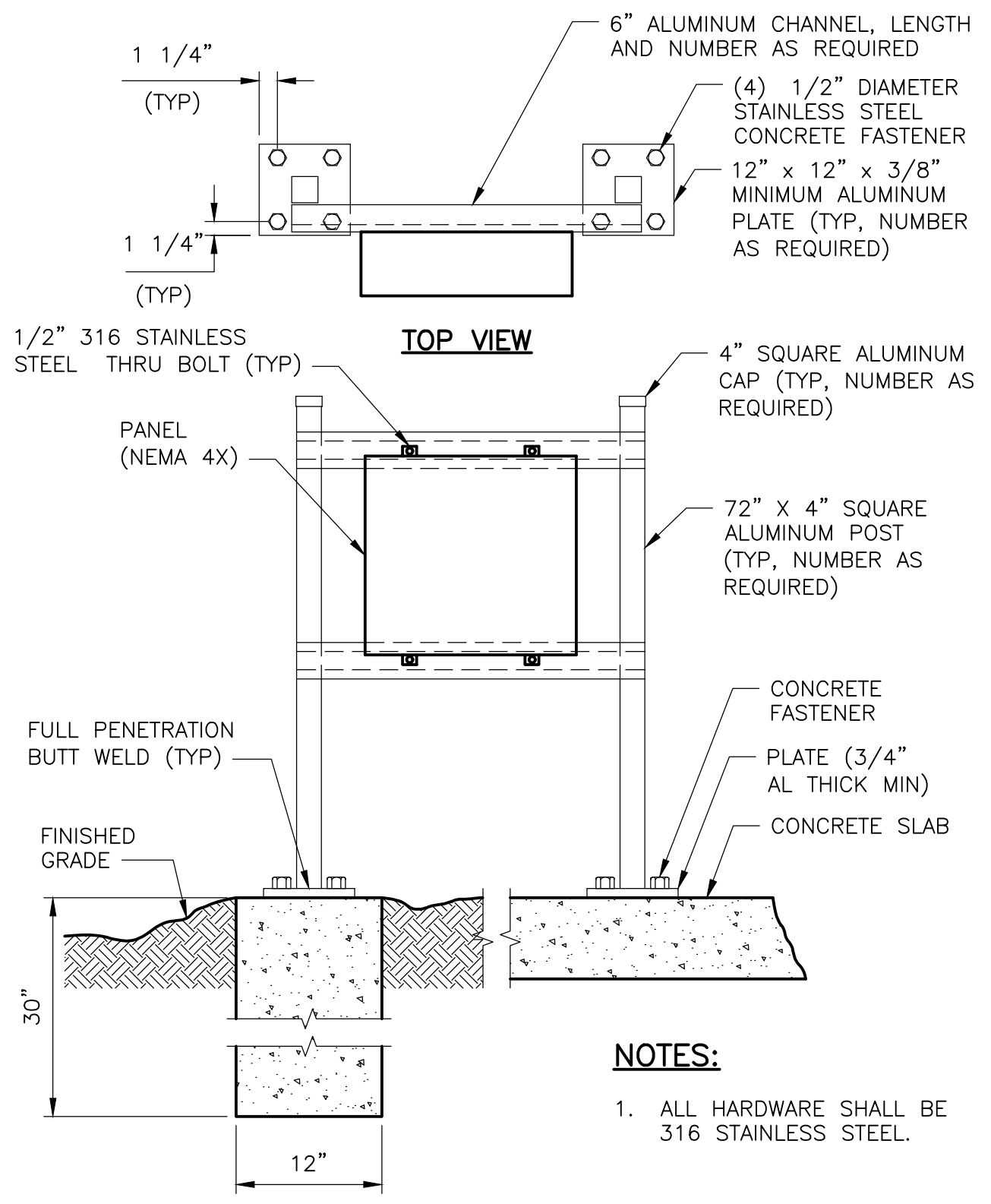
STANDARD LIGHTING BASE

DETAIL T
N.T.S.



SUBMERSIBLE CABLE APPLICATION

DETAIL U
N.T.S.



NOTES:

1. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.

PANEL MOUNTING

DETAIL W
N.T.S.

CDM Smith
 CDM Smith Inc.
 651 East 4th Street Suite 100
 Chattanooga, TN 37403
 Tel: (423) 771-4495

**DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM**

REV	DATE	REVISION DESCRIPTION

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 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: ER DESIGNER: RR CHECKER: SP

SHEET TITLE
ELECTRICAL

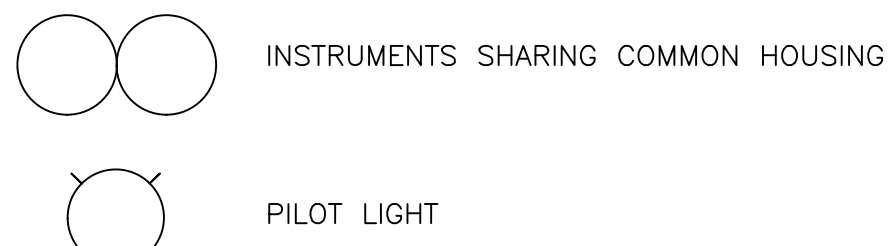
ELECTRICAL DETAILS III

SHEET **ED-3**

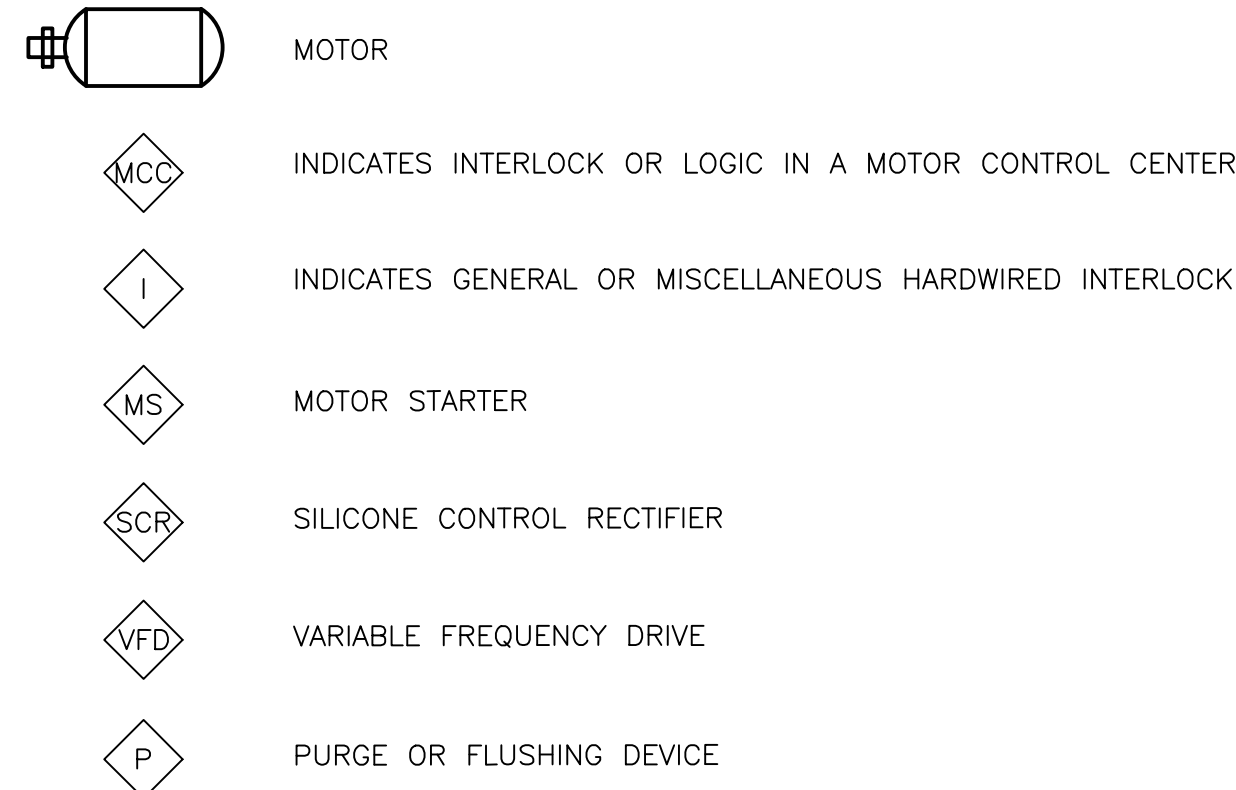
CREATED: 11/6/2019 LAST SAVED: 11/6/2019 PLOT DATE: 11/12/2019 BY: CHARITYRW
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GENERAL INSTRUMENT OR FUNCTION SYMBOLS

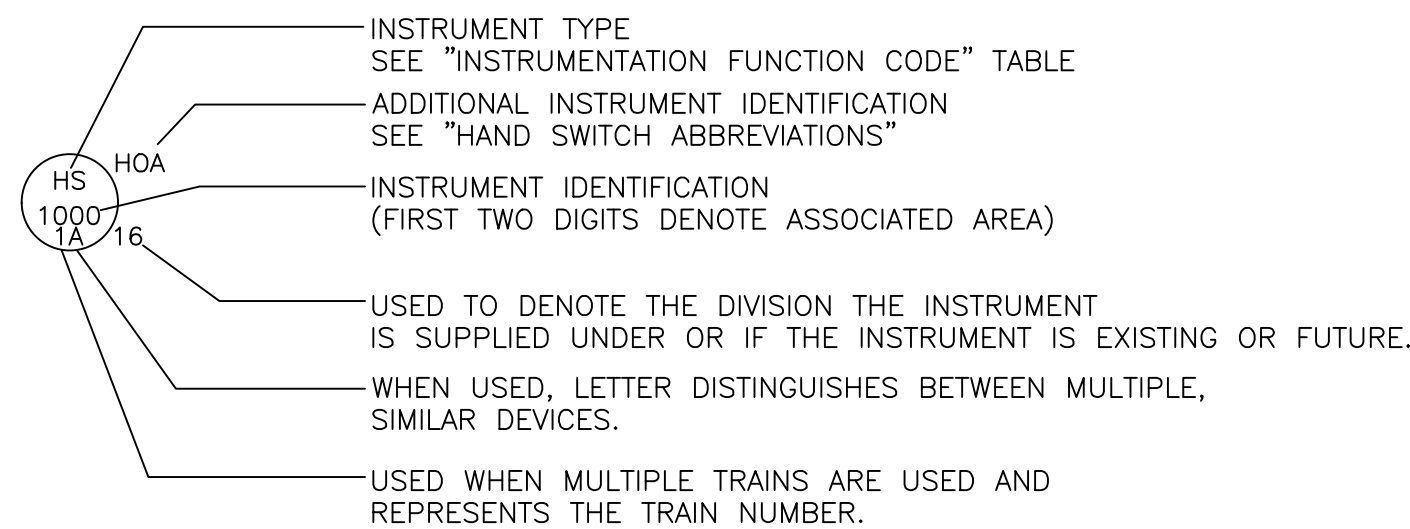
SHARED DISPLAY/SHARED CONTROL					
PRIMARY CHOICE	SECONDARY CHOICE	COMPUTER SOFTWARE	DISCRETE	LOCATION AND ACCESSIBILITY	
				FIELD MOUNTED AND NORMALLY OPERATOR ACCESSIBLE	
				PRIMARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE	
				PRIMARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE	
				SECONDARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE	
				SECONDARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE	



MISCELLANEOUS SYMBOLS



TYPICAL TAG NUMBERS & DESIGNATION



HAND SWITCH ABBREVIATIONS

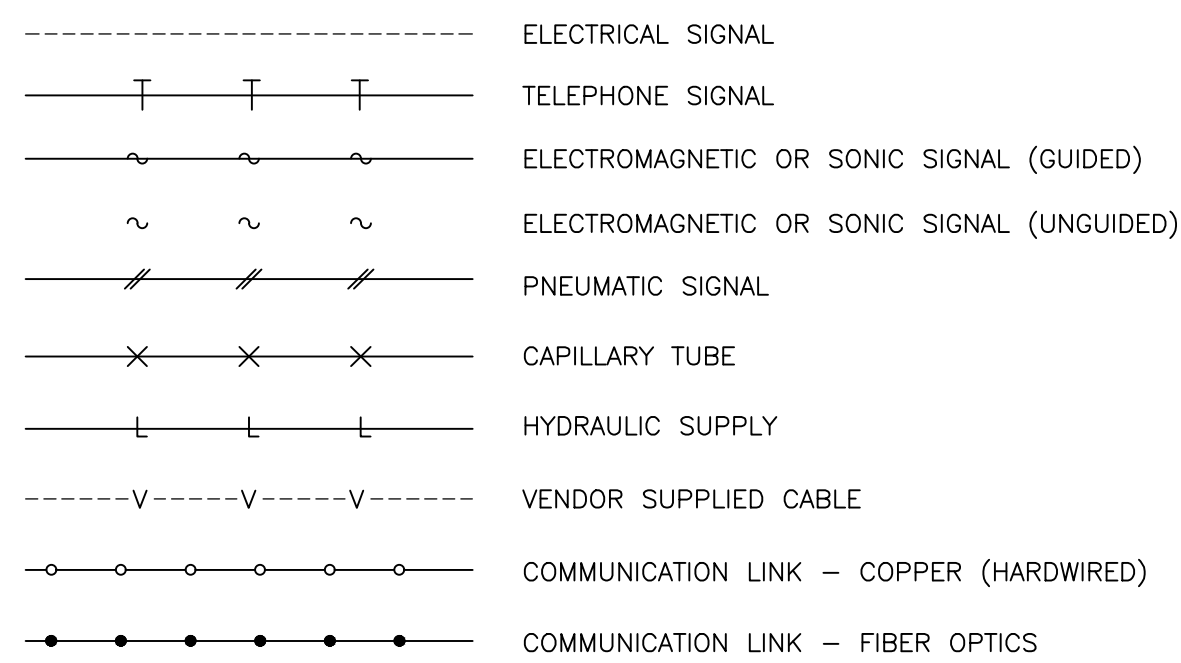
AO = AUTO/OFF	LOR = LOCAL/OFF/REMOTE
AM = AUTO/MANUAL	LOS = LOCKOUT/STOP
CM = COMPUTER/MANUAL	LA = LOCAL/AUTO
CL = COMPUTER/LOCAL	LR = LOCAL/REMOTE
E-STOP = EMERGENCY STOP	OC = OPEN/CLOSE
FR = FORWARD/REVERSE	OCA = OPEN/CLOSE/AUTO
FOR = FORWARD/OFF/REVERSE	OO = ON/OFF
FS = FAST SLOW	OOA = ON/OFF/AUTO
FOS = FAST/OFF/SLOW	OSC = OPEN/STOP/CLOSE
HOA = HAND/OFF/AUTO	RSL = RAISE/STOP/LOWER
LLS = LEAD/LAG/STANDBY	SS = START/STOP
LOC = LOCAL/OFF/COMPUTER	SOR = START/OFF/RESET

INSTRUMENTATION FUNCTION CODE

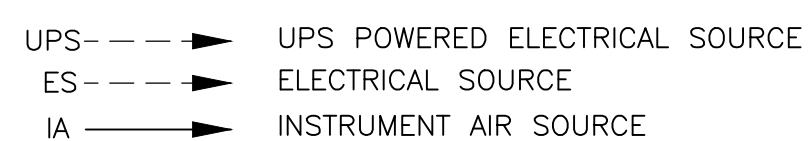
FIRST LETTERS		SUCCEEDING LETTERS		
COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
MEASURED/INITIATING VARIABLE	VARIABLE MODIFIER	READOUT/PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A ANALYSIS		ALARM		
B BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C USER'S CHOICE			CONTROL	CLOSED
D USER'S CHOICE	DIFFERENCE, DIFFERENTIAL			DEVIATION
E VOLTAGE		SENSOR, PRIMARY ELEMENT		
F FLOW, FLOW RATE	RATIO			
G USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE		
H HAND				HIGH
I CURRENT		INDICATE		
J POWER		SCAN		
K TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L LEVEL		LIGHT		LOW
M MOISTURE				MIDDLE, INTERMEDIATE
N USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P PRESSURE		POINT (TEST CONNECTION)		
Q QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R RADIATION		RECORD		RUN
S SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T TEMPERATURE			TRANSMIT	
U MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	
V VIBRATION, MECHANICAL, ANALYSIS			VALVE, DAMPER, LOUVER	
W WEIGHT, FORCE		WELL, PROBE		
X UNCLASSIFIED (1)	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED (1)	UNCLASSIFIED (1)	UNCLASSIFIED (1)
Y EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENT SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED, FINAL CONTROL ELEMENT	

TABLE NOTES:
(1) WHEN USED SYMBOL OR SIGNAL LINE IS ANNOTATED.

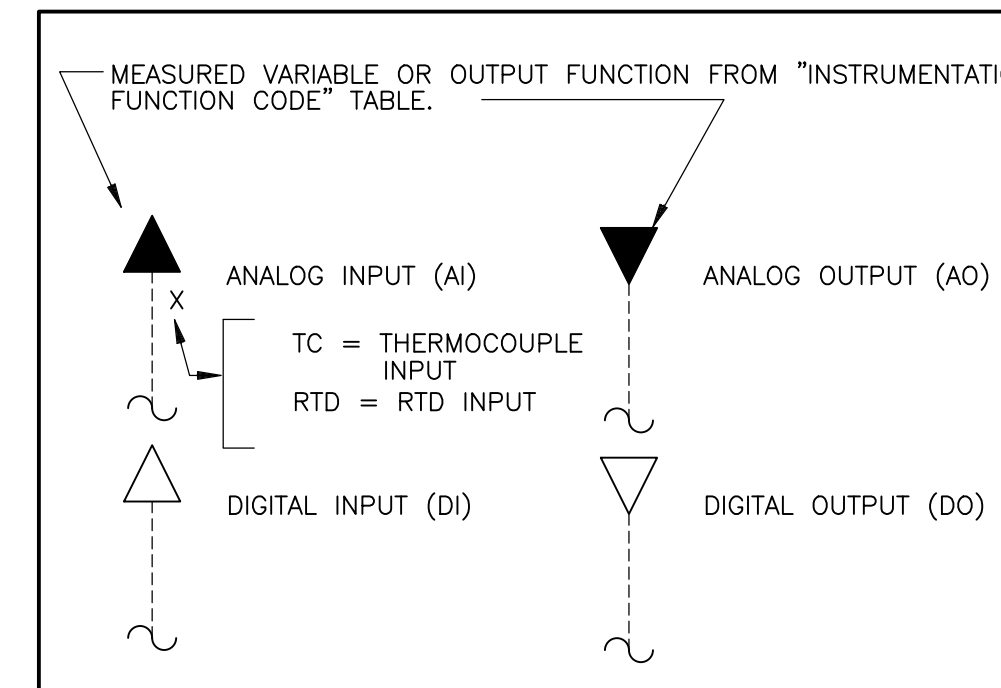
INSTRUMENT LINE SYMBOLS



ELECTRICAL / AIR SOURCES



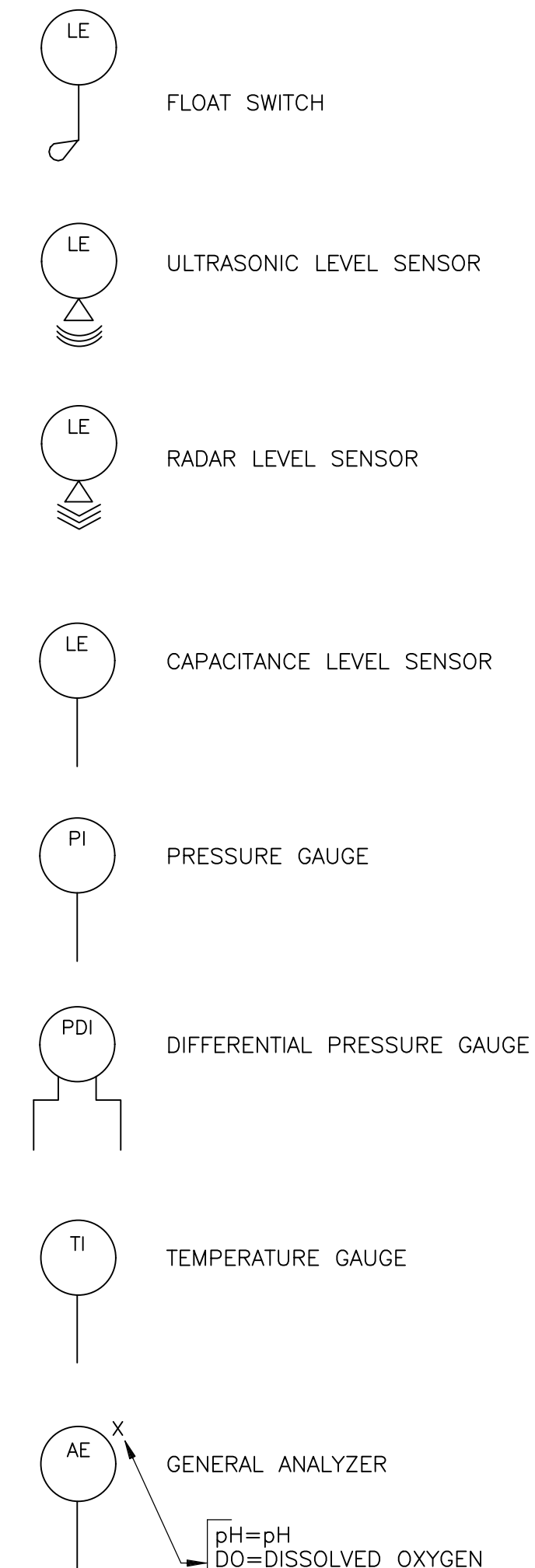
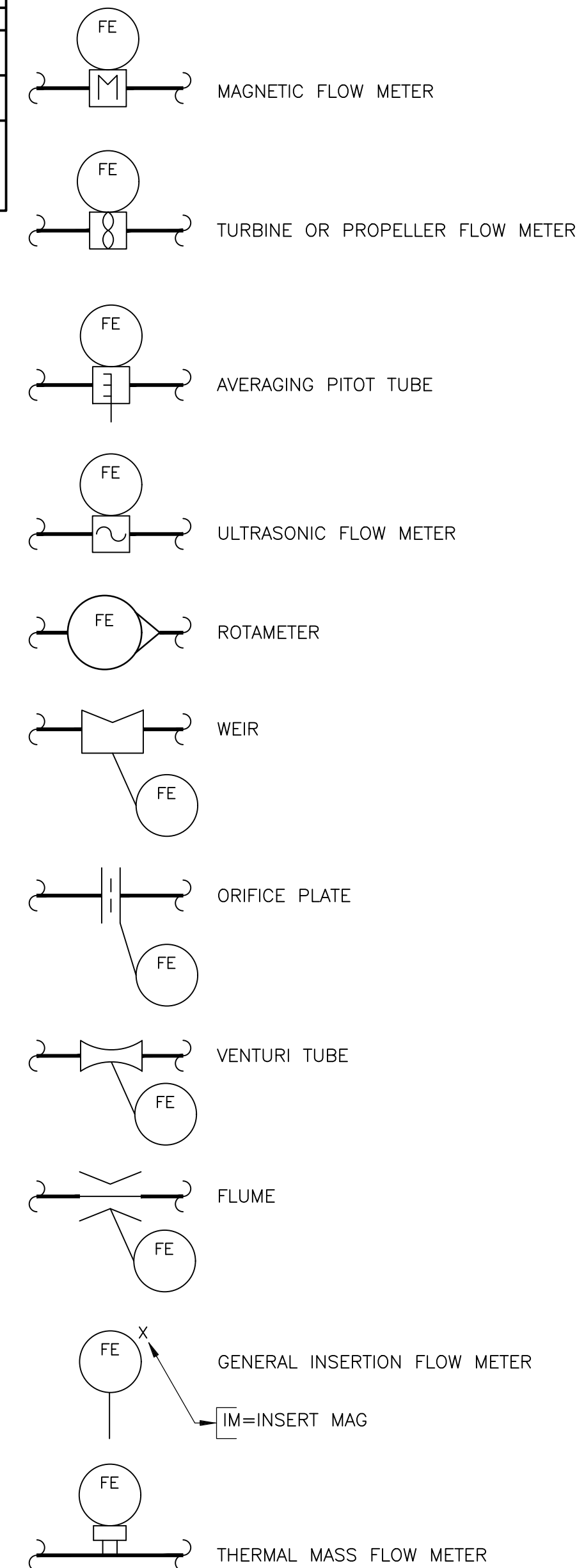
I/O SIGNALS



GENERAL NOTES

- THIS LEGEND APPLIES TO P&IDS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.
- IN GENERAL THIS LEGEND SHEET AND THE P&IDS ARE BASED ON THE INTERNATIONAL SOCIETY OF AUTOMATION (ISA) STANDARDS AND RECOMMENDED PRACTICES FOR INSTRUMENTATION AND CONTROL. SOME MODIFICATIONS, ADDITIONS AND ALTERATIONS HAVE BEEN MADE AS REQUIRED TO ACCOMMODATE PROJECT REQUIREMENTS.
- SOME PROCESS ITEMS SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS ARE NOT SHOWN ON THE P&IDS.
- SEE ELECTRICAL AND MECHANICAL SHEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS.
- LIGHTER WEIGHT LINES, SHOWN AS _____, INDICATE EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE EXISTING. WEIGHTED LINES, SHOWN AS _____ OR HEAVIER _____, INDICATE EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE NEW. DASHED WEIGHTED LINES, SHOWN AS _____, INDICATED EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE GROUPED AS A PACKAGE.

PRIMARY ELEMENTS



GENERAL ABBREVIATIONS

AI	ANALOG IN
AO	ANALOG OUT
CPU	CENTRAL PROCESSOR UNIT
DI	DIGITAL OR DISCRETE INPUT
DO	DIGITAL OUTPUT
FC	FAIL CLOSED
FO	FAIL OPEN OR FIBER OPTIC
HMI	HUMAN MACHINE INTERFACE
MCC	MOTOR CONTROL CENTER
NC	NORMALLY CLOSED
NPW	NON-POTABLE WATER
NO	NORMALLY OPEN
PLC	PROGRAMMABLE LOGIC CONTROLLER
PW	PLANT WATER
RIO	REMOTE INPUT/OUTPUT
UPS	UNINTERRUPTIBLE POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE

DUPONT PUMP STATION AND
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 CITY OF CHATTANOOGA, TN
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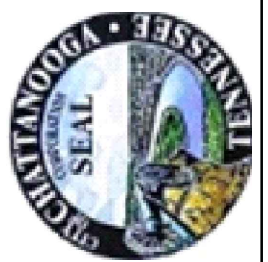
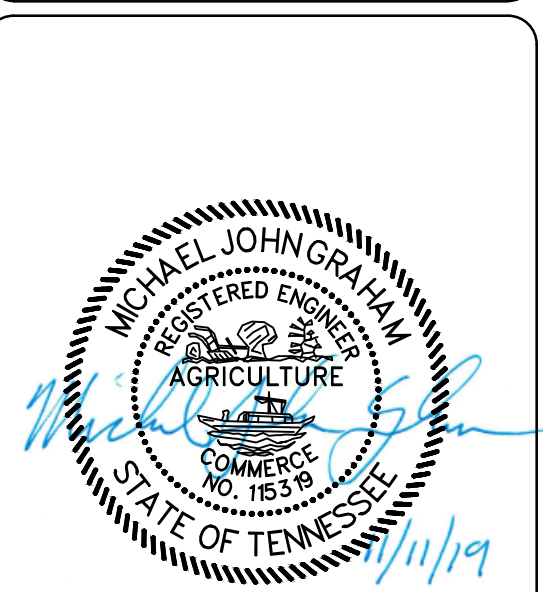
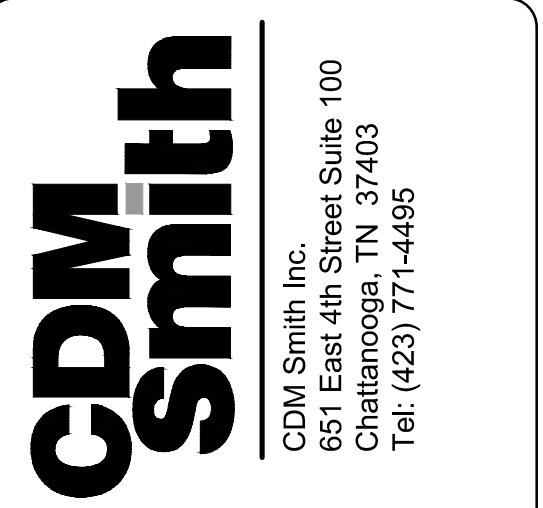
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PROJECT NO: 129699-109746

DATE: NOVEMBER 2019

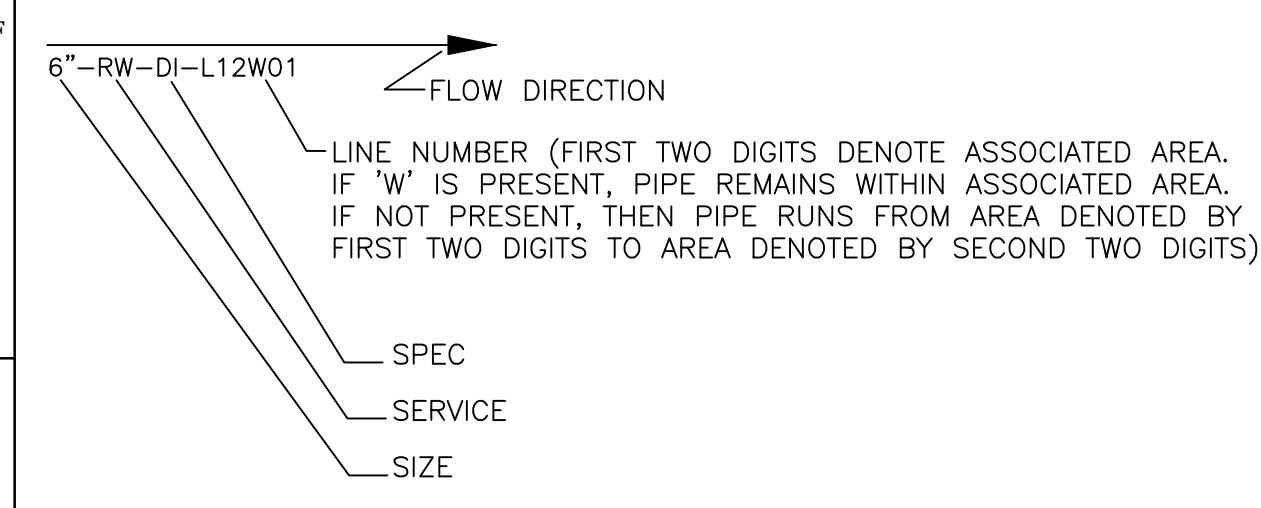
DISC. LEAD: M/JG DESIGNER: M/JG CHECKER: DLU

SHEET TITLE
INSTRUMENTATION
INSTRUMENTATION
LEGEND (1 OF 2)

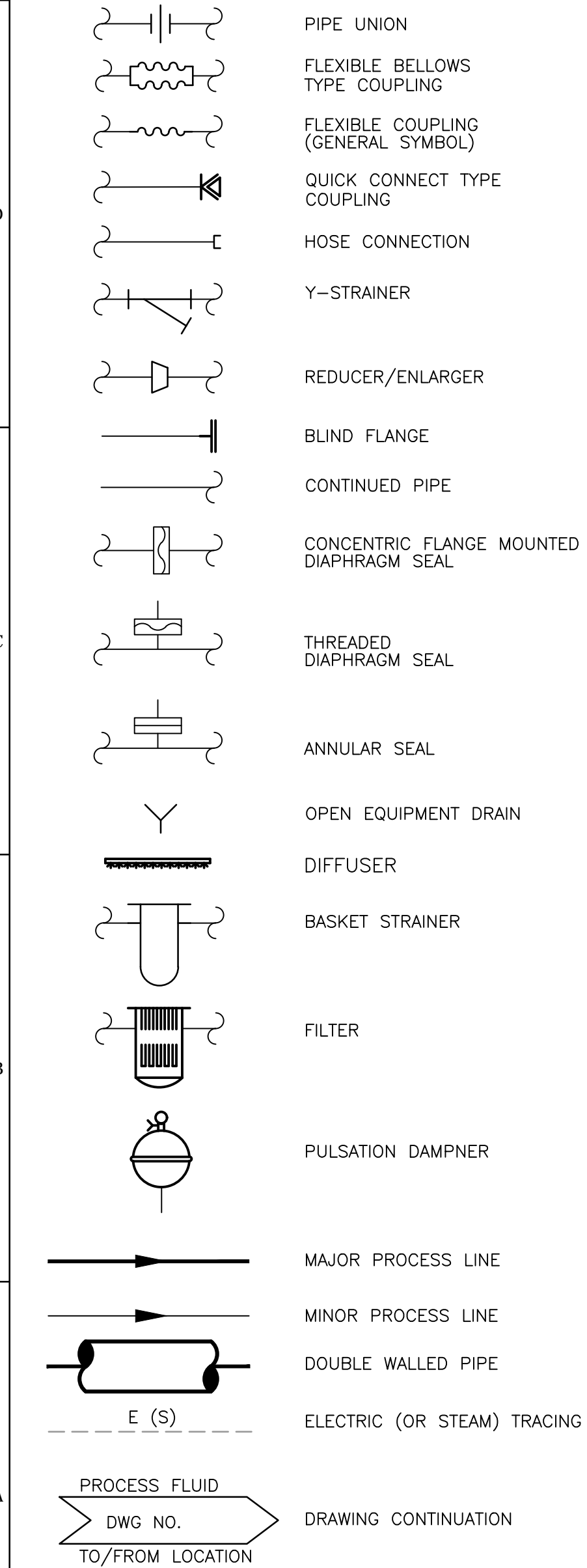


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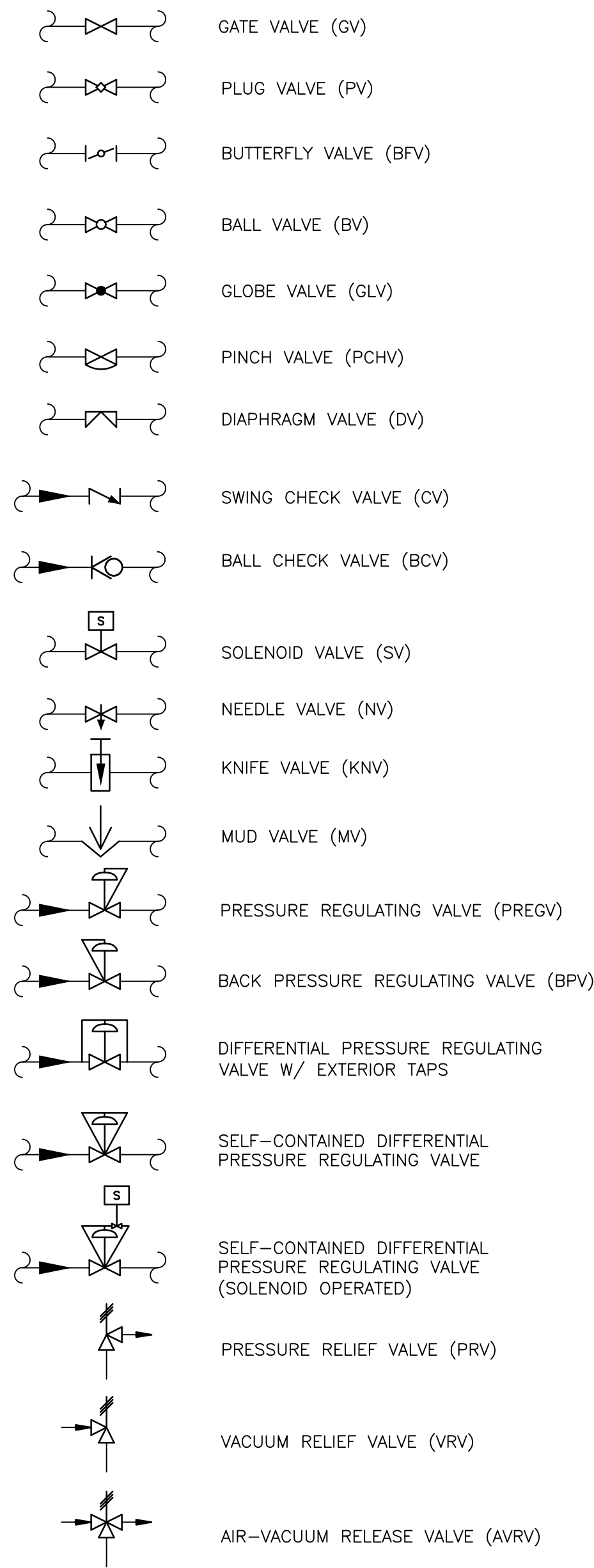
TYPICAL PIPE TAG NUMBERS & DESIGNATION



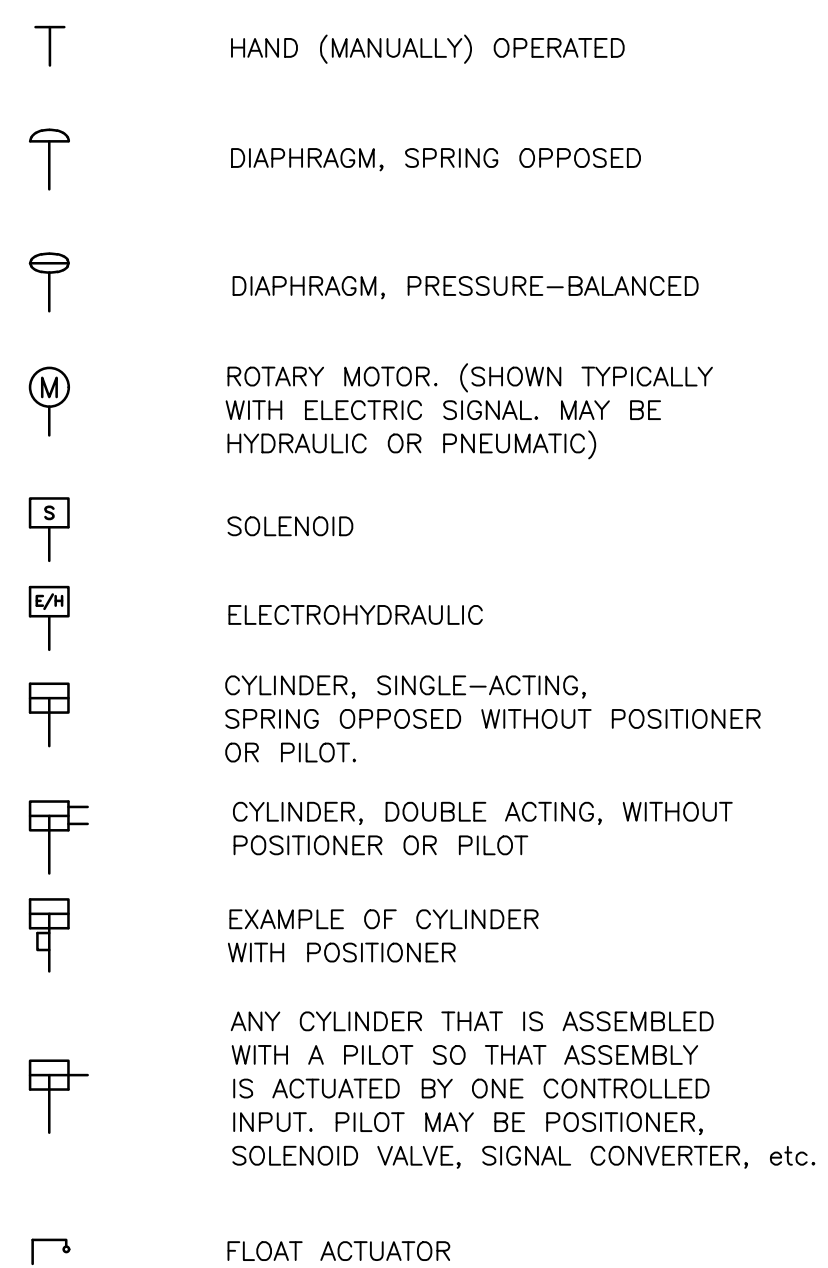
PIPE LINE SYMBOLS



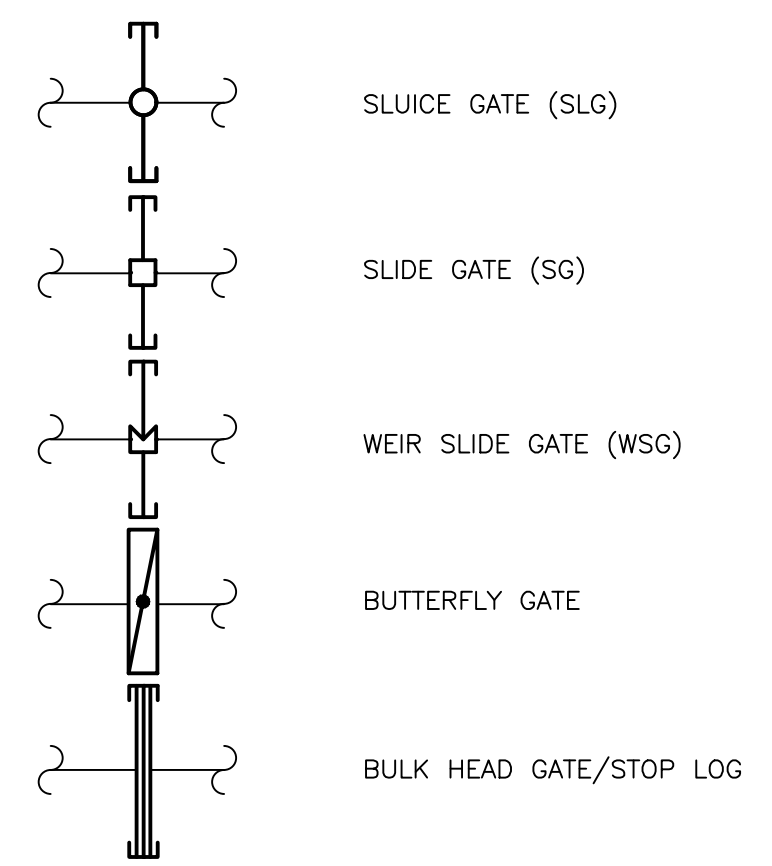
VALVE SYMBOLS



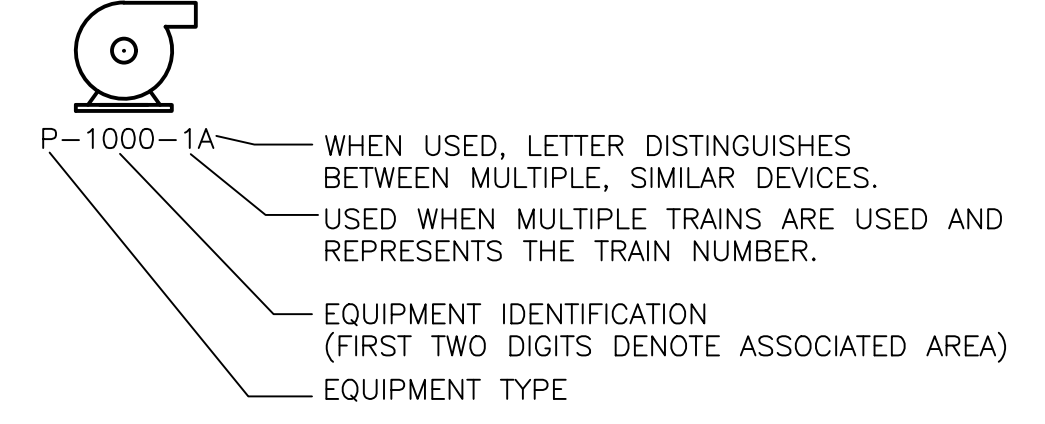
VALVE ACTUATORS



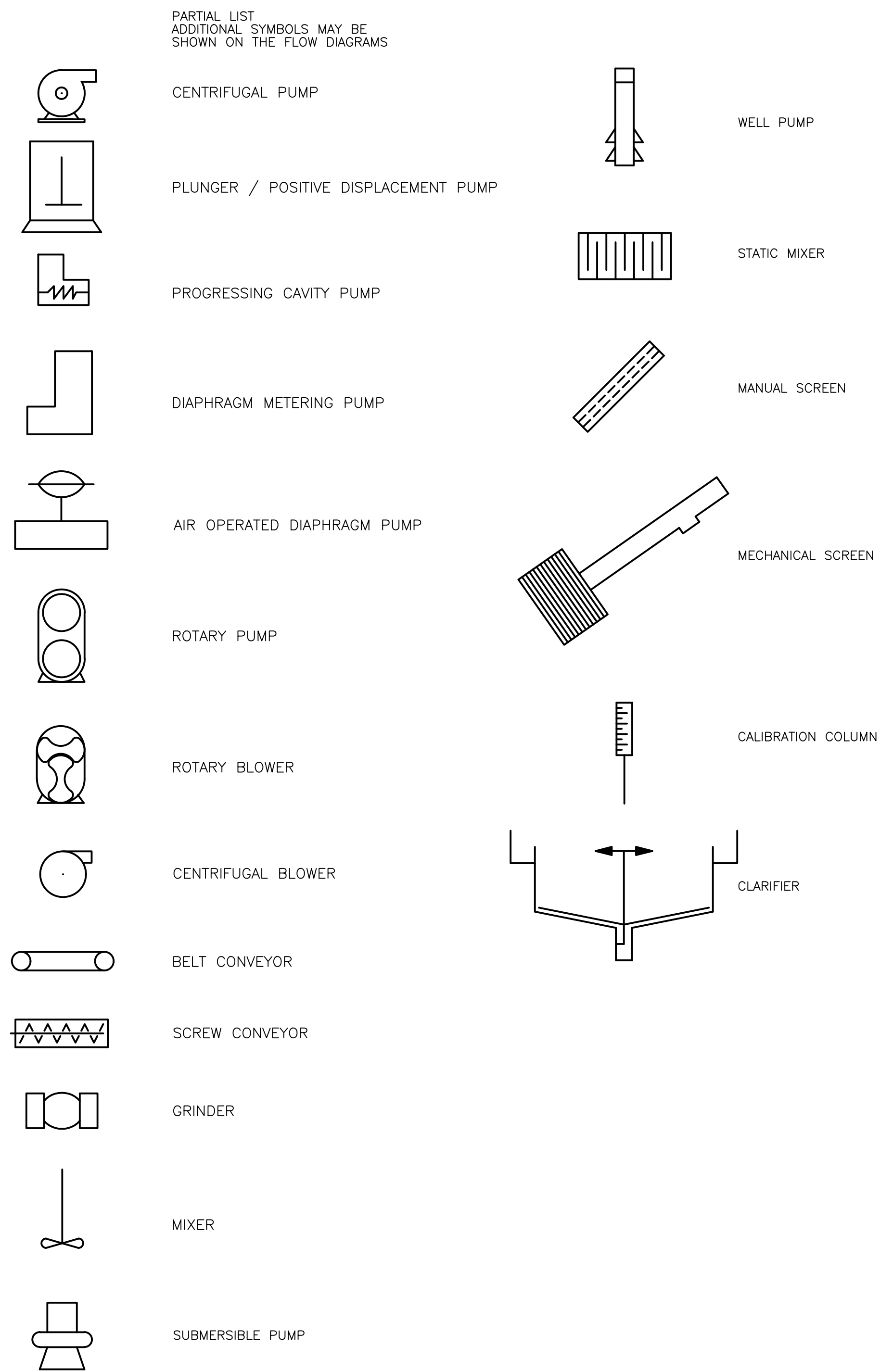
GATE SYMBOLS



TYPICAL EQUIPMENT TAG NUMBERS & DESIGNATION



PROCESS EQUIPMENT



GENERAL NOTES

1. REFER TO SHEET I-1 FOR ADDITIONAL NOTES

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DATE: NOVEMBER 2019

DISC. LEAD:	DESIGNER:	CHECKER:
MJG	MJG	DLU

SHEET TITLE
INSTRUMENTATION

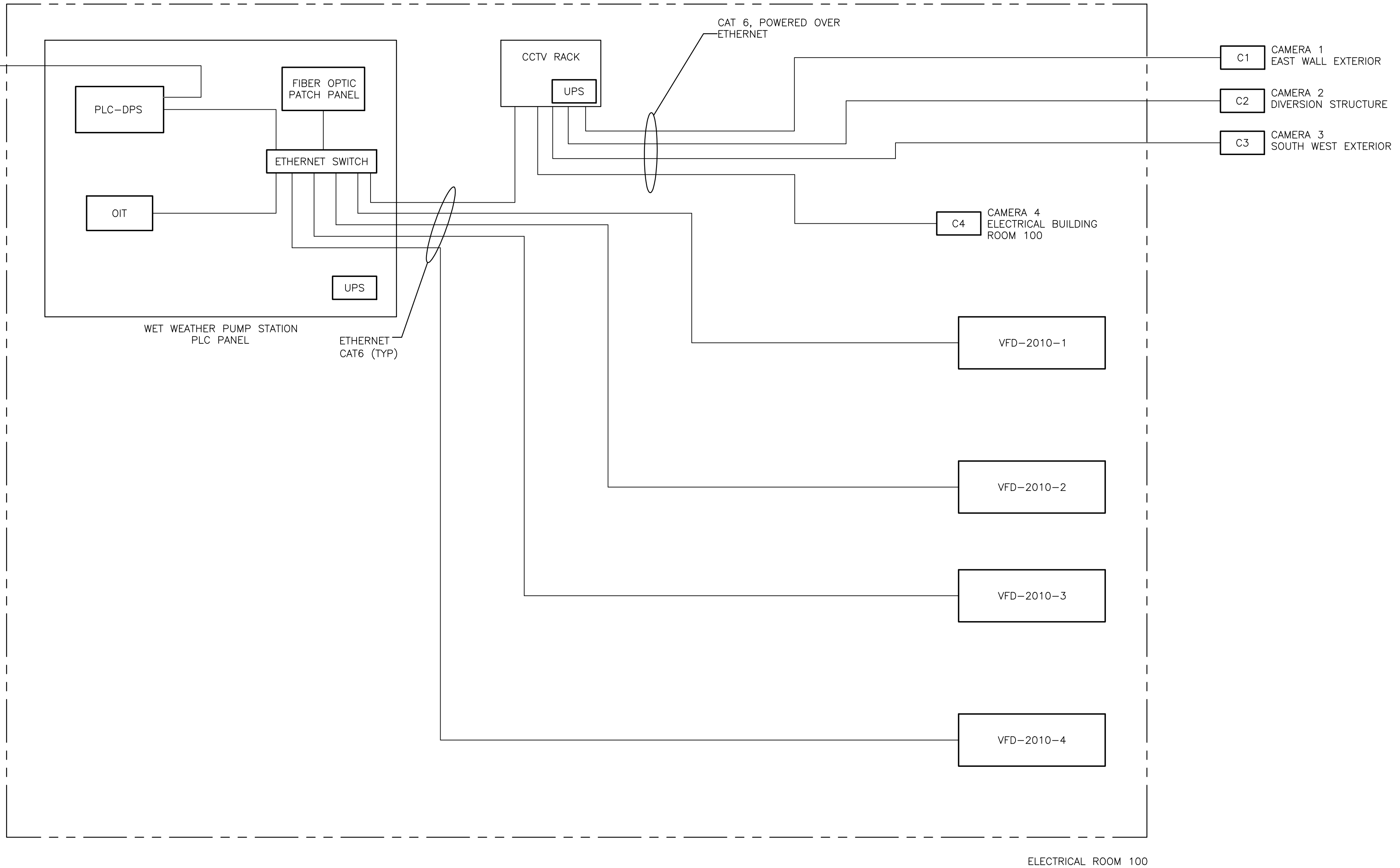
**INSTRUMENTATION
LEGEND (2 OF 2)**

SHEET I-2

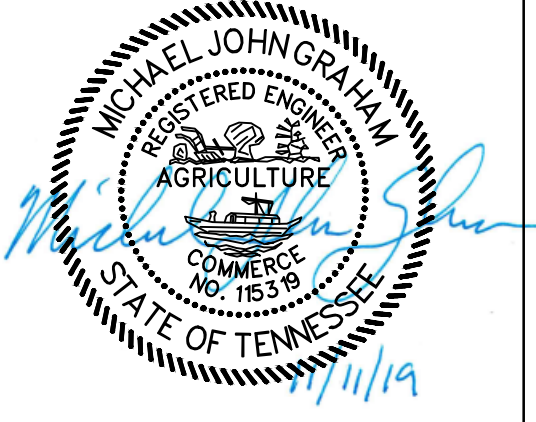
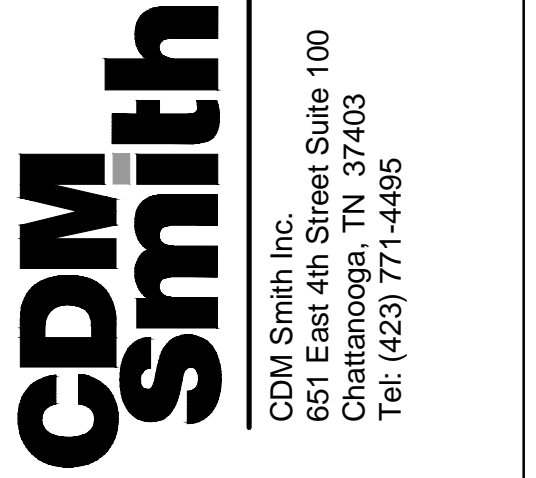
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YAGI ANTENNA AND MAST.
SEE DETAIL F ON
DRAWING 1-8

ANTENNA
CABLE



ELECTRICAL ROOM 100



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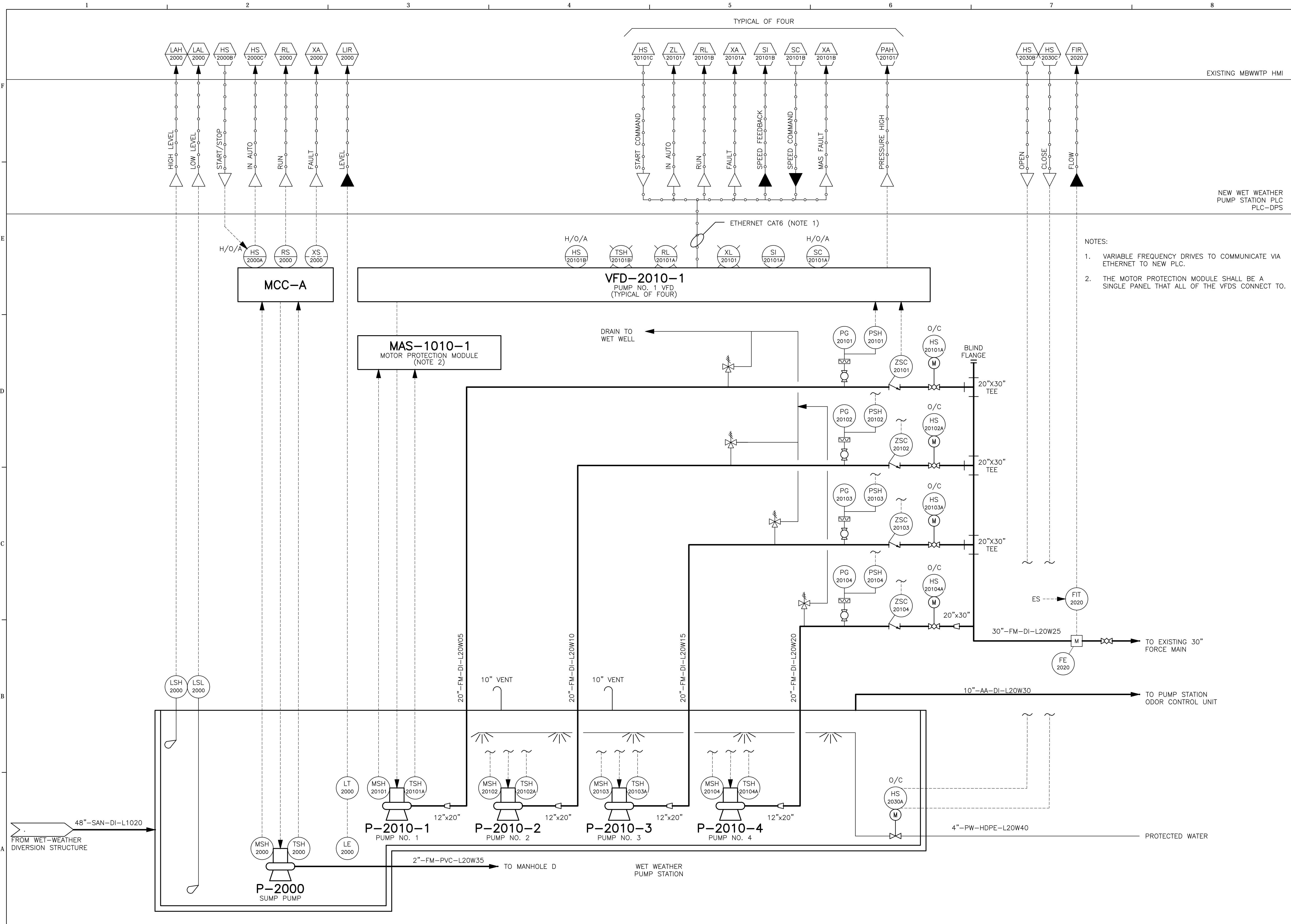
DISC. LEAD: MJG	DESIGNER: MJG	CHECKER: DLU
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SHEET TITLE
INSTRUMENTATION

CONTROL BLOCK DIAGRAM

SHEET
I-3

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 Tel: (423) 771-4495

MICHAEL JOHN GRAHAM
 REGISTERED ENGINEER
 AGRICULTURE
 No. 1153
 COMMERCIAL
 STATE OF TENNESSEE
 11/19

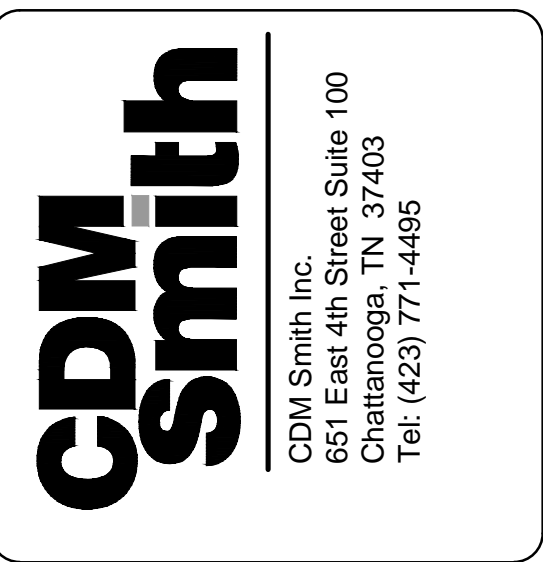
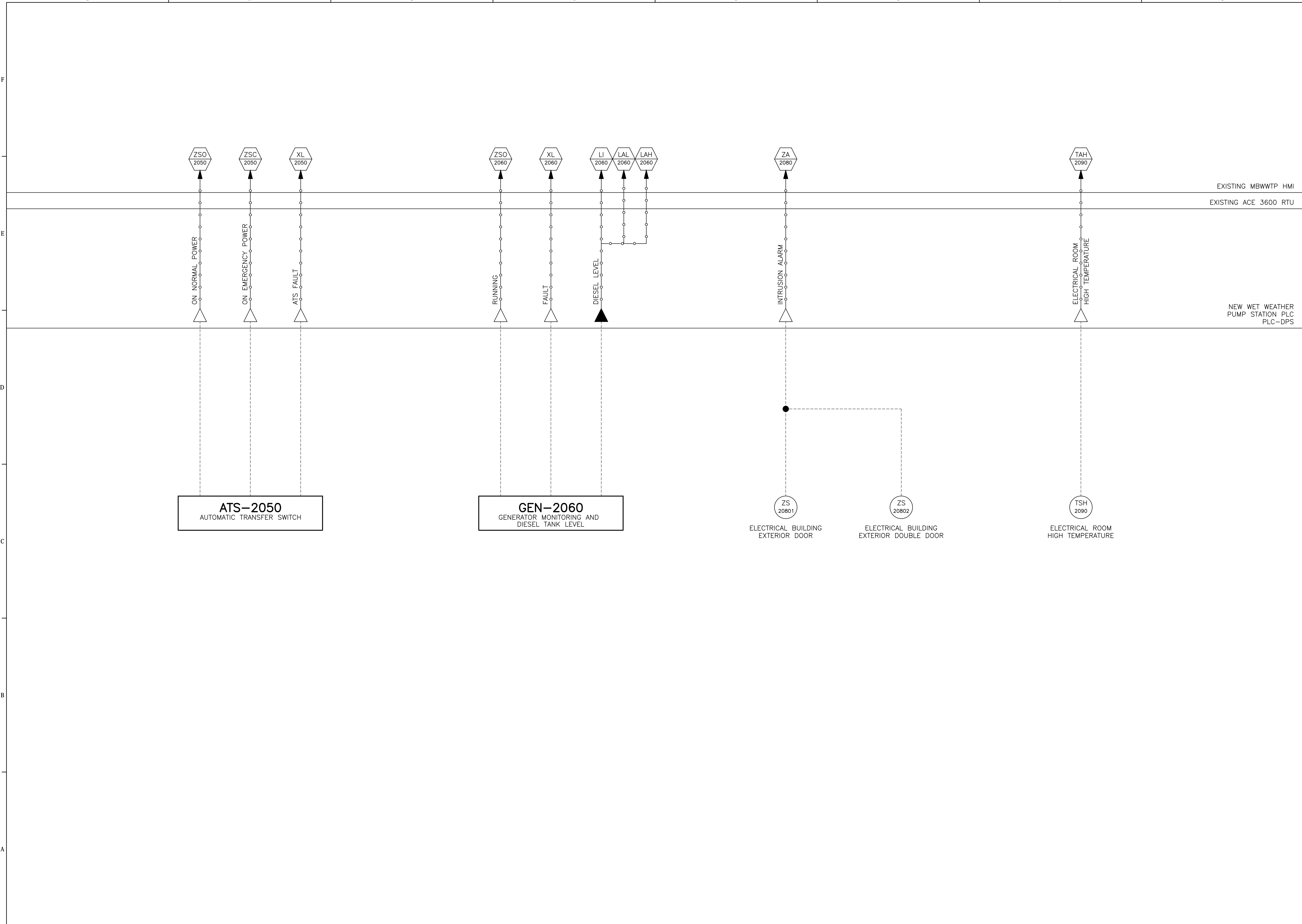
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 DATE: NOVEMBER 2019
 DISC. LEAD: MJG DESIGNER: MJG CHECKER: DLU
 SHEET TITLE: INSTRUMENTATION
WET WEATHER PUMP STATION P&ID
 SHEET 1-5
 ISSUED FOR BID

- NOTES:
- VARIABLE FREQUENCY DRIVES TO COMMUNICATE VIA ETHERNET TO NEW PLC.
 - THE MOTOR PROTECTION MODULE SHALL BE A SINGLE PANEL THAT ALL OF THE VFDS CONNECT TO.

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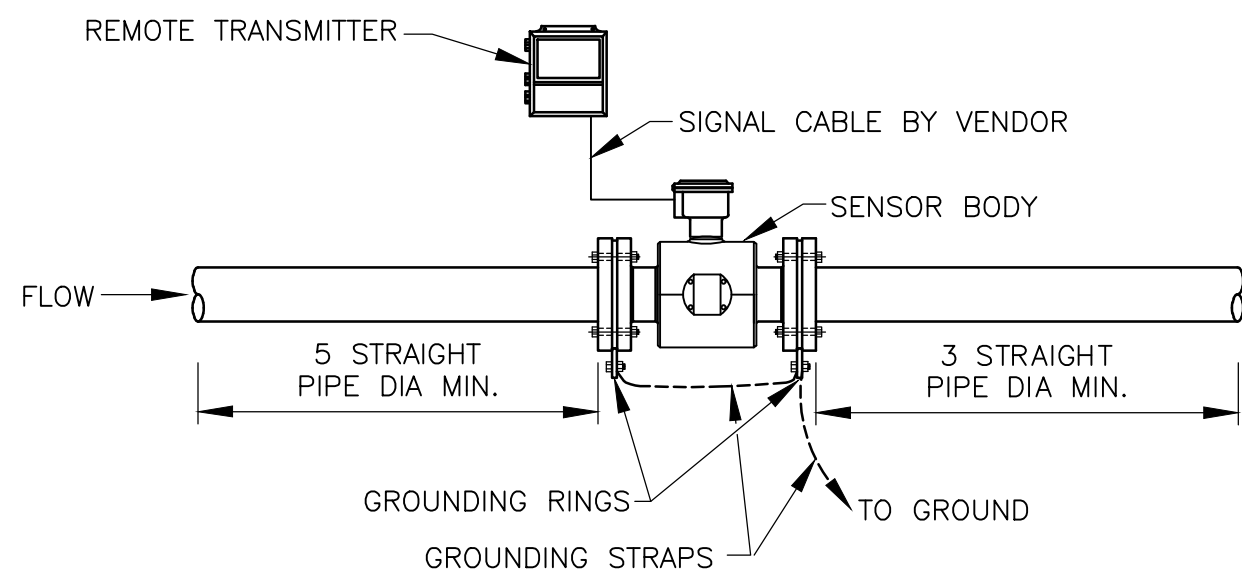
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MJG	MJG	DLU

SHEET TITLE
INSTRUMENTATION

**ELECTRICAL
DETAILS**

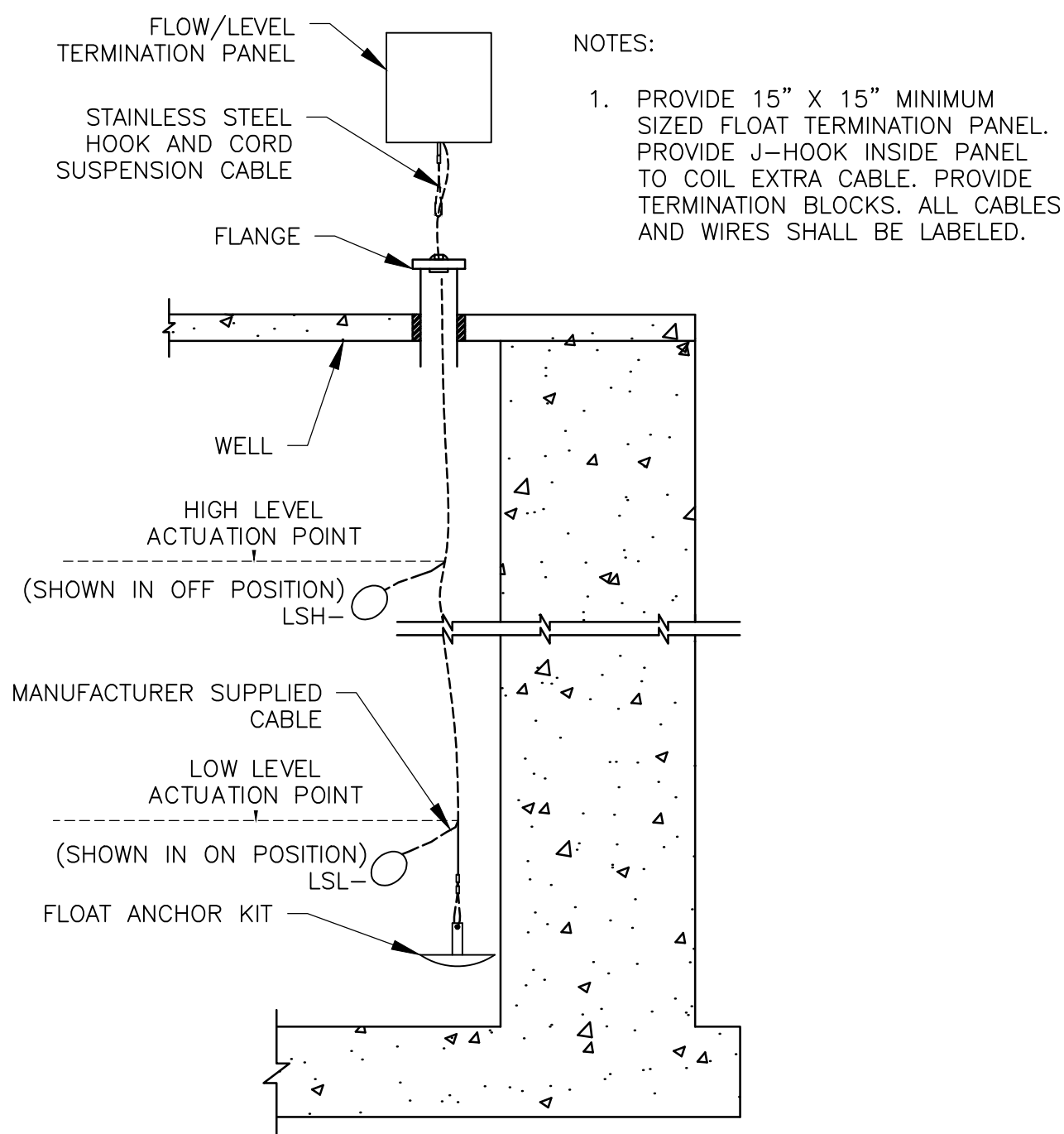
SHEET I-6

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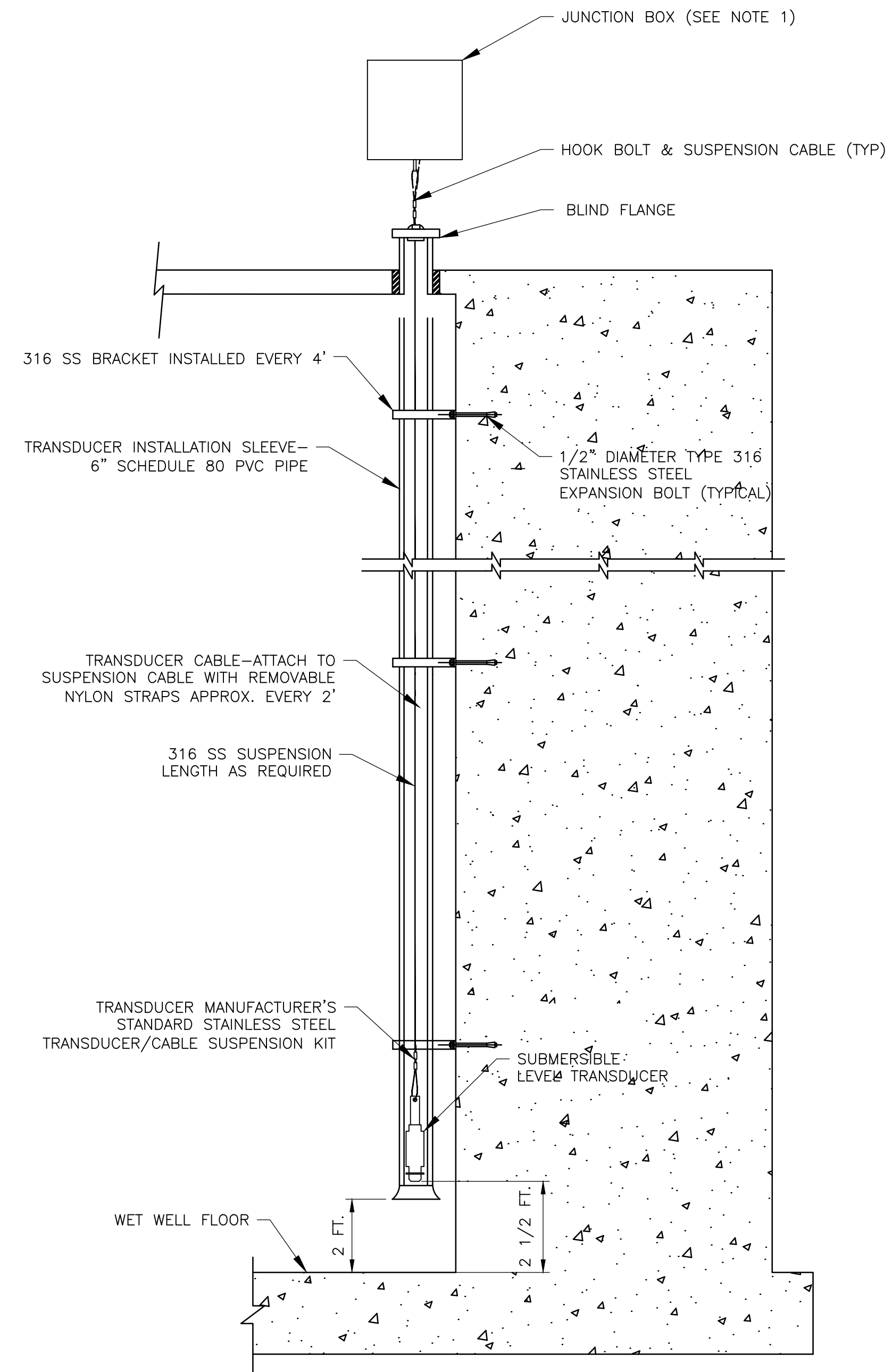
- NOTES:
1. PROVIDE GROUNDING RING(S) AS RECOMMENDED BY MANUFACTURER.
 2. PROVIDE SENSOR LINING TO PREVENT BUILDUP ON METER.

MAGNETIC FLOW METER
DETAIL A
 NTS



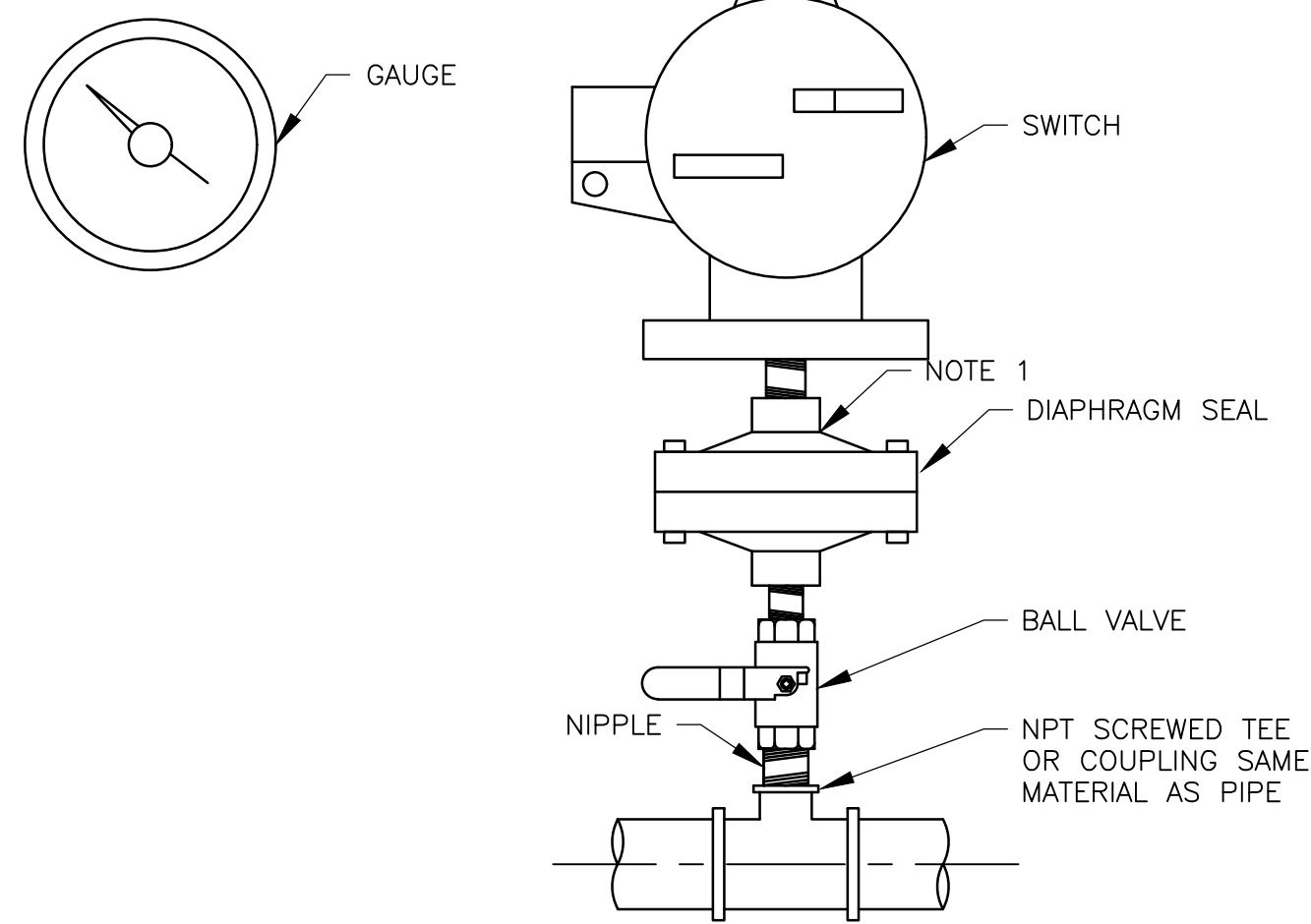
- NOTES:
1. PROVIDE 15" X 15" MINIMUM SIZED FLOAT TERMINATION PANEL. PROVIDE J-HOOK INSIDE PANEL TO COIL EXTRA CABLE. PROVIDE TERMINATION BLOCKS. ALL CABLES AND WIRES SHALL BE LABELED.

FLOAT SWITCH (CABLE SUSPENSION)
DETAIL B
 NTS



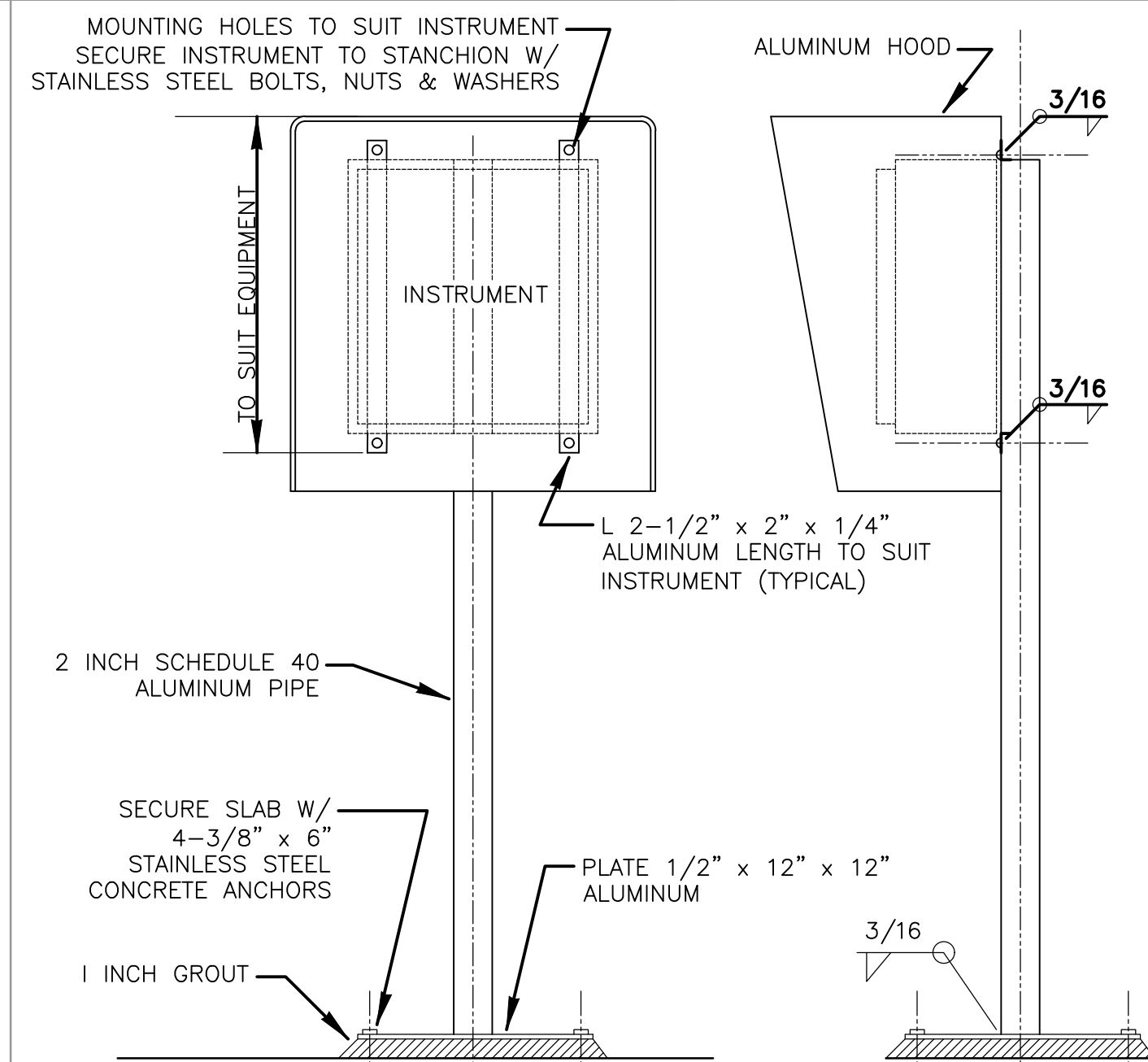
- NOTES:
1. PROVIDE 15" X 15" MINIMUM TERMINATION PANEL. PROVIDE J-HOOK INSIDE PANEL TO COIL EXTRA CABLE. PROVIDE TERMINATION BLOCKS. INSTALL ANEROID BELLOW WITHIN THE JUNCTION BOX. ALL CABLES AND WIRES SHALL BE LABELED.

SUBMERSIBLE LEVEL SENSOR
DETAIL E
 NTS



- NOTES:
1. FOR PROPER OPERATION, EVACUATE SECTION BETWEEN DIAPHRAGM AND PRESSURE DEVICE OF AIR AND SEAL WITH OIL.

PRESSURE SWITCH/GAUGE (WITH DIAPHRAGM SEAL)
DETAIL C
 NTS



- NOTES:
1. ALL EXPOSED EDGES TO BE GRIND SMOOTH AND BURR FREE.
 2. PAINT ALL ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.

STANCHION MOUNTING FOR CASE MOUNTED INSTRUMENTS
DETAIL D
 NTS



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 DISC. LEAD: M/G DESIGNER: M/G CHECKER: DLU

SHEET TITLE
 INSTRUMENTATION
INSTRUMENTATION DETAILS

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*****DETAIL MODIFICATION NOTES TO ENGINEER*****

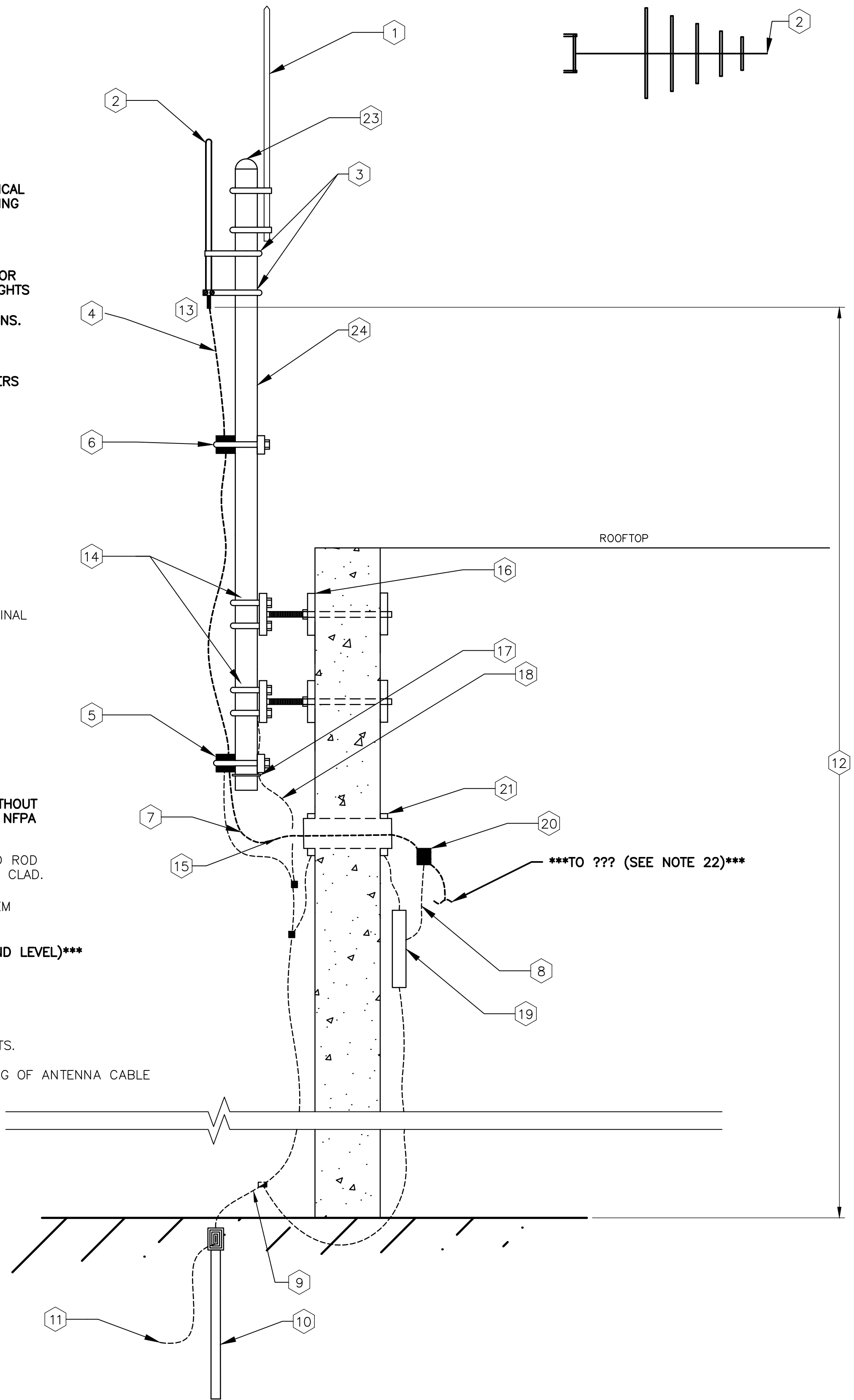
1. MODIFY STARRED NOTES BELOW, PER APPLICATION.

DESIGN NOTES TO ENGINEER

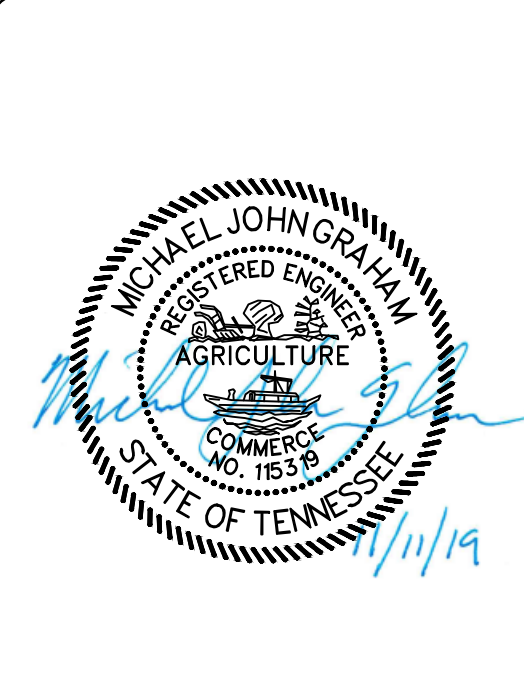
1. COORDINATE WITH STRUCTURAL ENGINEERS, ELECTRICAL ENGINEERS, AND ARCHITECTS FOR ANTENNA MOUNTING LOCATION AND SUITABILITY.
2. AT A MINIMUM, PERFORM A DESKTOP RADIO PATH STUDY TO DETERMINE FEASIBLE RADIO PATHS. IF POSSIBLE, PERFORM A FIELD RADIO PATH STUDY FOR BEST POSSIBLE FEASIBILITY RESULTS. ANTENNA HEIGHTS DETERMINED IN ACCORDANCE WITH THE DESKTOP AND/OR FIELD RADIO PATH STUDY RECOMMENDATIONS.
3. DETAIL SHOWS THE MAJOR COMPONENTS OF THIS RADIO/ANTENNA INSTALLATION. COORDINATE INSTALLATION DETAIL WITH RADIO/ANTENNA INSTALLERS AND MANUFACTURERS.
4. MAY REQUIRE OBSTRUCTION LIGHTS, VERIFY FAA REQUIREMENTS.

NOTES:

- ① LIGHTNING ROD PER NFPA 780
- ② *****[YAGI/OMNI] ANTENNA*****
- ③ ANTENNA PIPE MOUNTS
- ④ PROVIDE SUPERFLEX COAXIAL CABLE JUMPER FOR FINAL CONNECTION
- ⑤ ANTENNA CABLE GROUNDING KIT
- ⑥ SECURE CABLE TO MAST PIPE WITH CLAMPS, MAXIMUM 3 FEET BETWEEN CLAMPS.
- ⑦ DRIP LOOP
- ⑧ JUMPER #10 AWG COPPER MINIMUM PER NEC
- ⑨ *****GROUND WIRE: 6 AWG PER NEC ARTICLE 820 WITHOUT LIGHTNING ROD, OTHERWISE, 2 AWG STRANDED PER NFPA 780 FOR LIGHTNING ROD.*****
- ⑩ IF LIGHTNING ROD IS USED, SUPPLY TOWER GROUND ROD PER NFPA 780 AND NEC. 8 FOOT MINIMUM COPPER CLAD.
- ⑪ BOND TO ELECTRICAL GROUNDING ELECTRODE SYSTEM WITH #6 AWG MINIMUM PER NEC ARTICLE 820.
- ⑫ *****RADIO ANTENNA HEIGHT (MEASURED FROM GROUND LEVEL)*****
- ⑬ PROTECT CONNECTION WITH SEALING TAPE.
- ⑭ WALL MOUNT CLAMPS WITH HARDWARE. MINIMUM 20 INCHES SPACING BETWEEN WALL MOUNTS.
- ⑮ PROVIDE ENOUGH BENDING SPACE TO ALLOW FLEXING OF ANTENNA CABLE
- ⑯ PLATE WITH ANCHOR BOLTS
- ⑰ LISTED GROUND CLAMP FOR PIPE
- ⑱ BOND ANTENNA POLE TO BUILDING GROUND SYSTEM PER NEC AND NFPA 780.
- ⑲ COPPER GROUND BAR
- ⑳ SURGE PROTECTOR
- ㉑ ANTENNA CABLE FEED THROUGH PANEL
- ㉒ *****SPECIFY RADIO/LOCATION THAT ANTENNA CABLE IS BEING ROUTED TO***. RF CABLE MUST BE LISTED FOR INDOOR USE IF OVER 50 FEET.**
- ㉓ PIPE CAP
- ㉔ 2 INCHES MINIMUM SCHEDULE 40 PIPE



BUILDING MOUNTED ANTENNA MAST
 DETAIL F
 NTS



DUPONT PUMP STATION AND
 BASIN IMPROVEMENTS - PHASE 2 - CONTRACT A
 CITY OF CHATTANOOGA, TN
 CONSENT DECREE PROGRAM

REV	DATE	REVISION DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE
 THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
 PROJECT NO: 129699-109746
 DATE: NOVEMBER 2019
 DISC. LEAD: MJC DESIGNER: MJC CHECKER: DLU
 SHEET TITLE: INSTRUMENTATION
INSTRUMENTATION DETAILS
 SHEET: I-8