

AEI EXPANSION AUTO, PCT, & TACOMA RAIL INTERCHANGE YARD

CONTRACT NO. 998205

PORT COMMISSIONERS:

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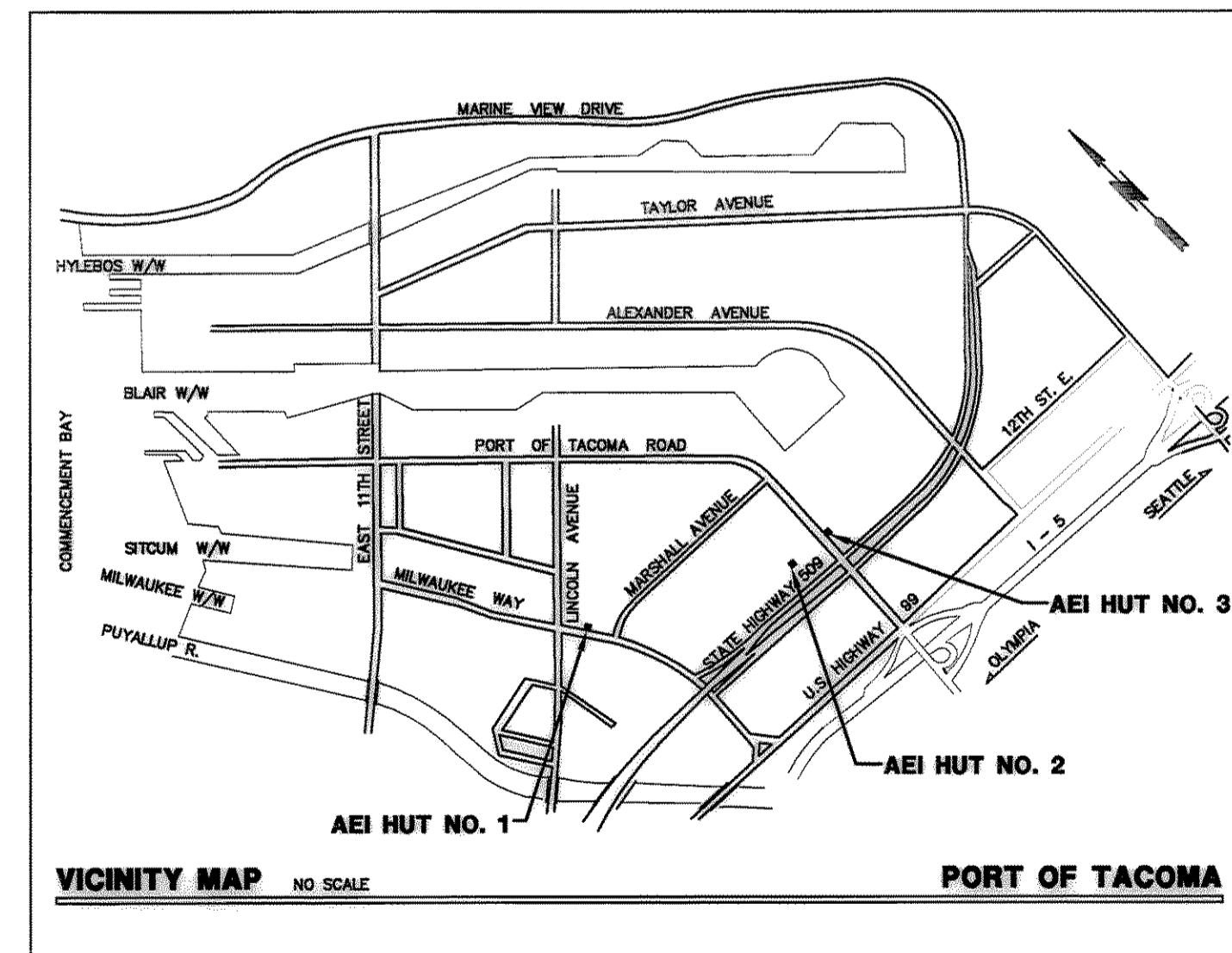
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SHEET NO.	DRAWING TITLE
E1	TITLE SHEET
E2	SITE PLAN
E3	PARTIAL SITE PLAN
E4	PARTIAL SITE PLAN
E5	PARTIAL SITE PLAN
E6	PARTIAL SITE PLAN
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E8	AEI HUT NO. 1
E9	PARTIAL SITE PLAN/AEI HUT NO. 2
E10	AEI DETAILS
E11	AEI DETAILS
E12	VAULT & TRENCH DETAILS

FILE NUMBER:		EP-6257-20		AEI EXPANSION AUTO, PCT & TACOMA RAIL INTERCHANGE YARD TITLE SHEET		PORT OF TACOMA P.O. BOX 1837 TACOMA, WA 98401 263-383-5841	
SHEET 1 OF 12		CONTRACT NUMBER 998205		TOWNSHIP: RANGE: SECTION: DATE: HORIZ: VERT: E NUMBER: 041		CHIEF ENGINEER - DATE DRAWING DATE: 03-18-05 PORT ADDRESS: PORT PARCEL:	
E1		FILE NUMBER:		PROJECT ENGR - DATE DRAWING DATE: 03-18-05 PORT ADDRESS: PORT PARCEL:		APPROVED CHECKED BY - DATE M. R. ADAMS 30 March 2005	
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GENERAL NOTES:

1. THE DRAWINGS ARE NOT COMPLETE WITHOUT THE ACCOMPANYING SPECIFICATIONS. SEE THE SPECIFICATIONS FOR FURTHER DETAILS AND REQUIREMENTS OF THE WORK.

2. THE CONTRACTOR SHALL MEET WITH AND COORDINATE WITH TACOMA RAIL (BELT LINE) ENGINEERING AND OPERATIONS STAFF, AND PORT ENGINEERING STAFF IN A COMMON MEETING BEFORE BEGINNING WORK. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH TACOMA RAIL REQUIREMENTS.

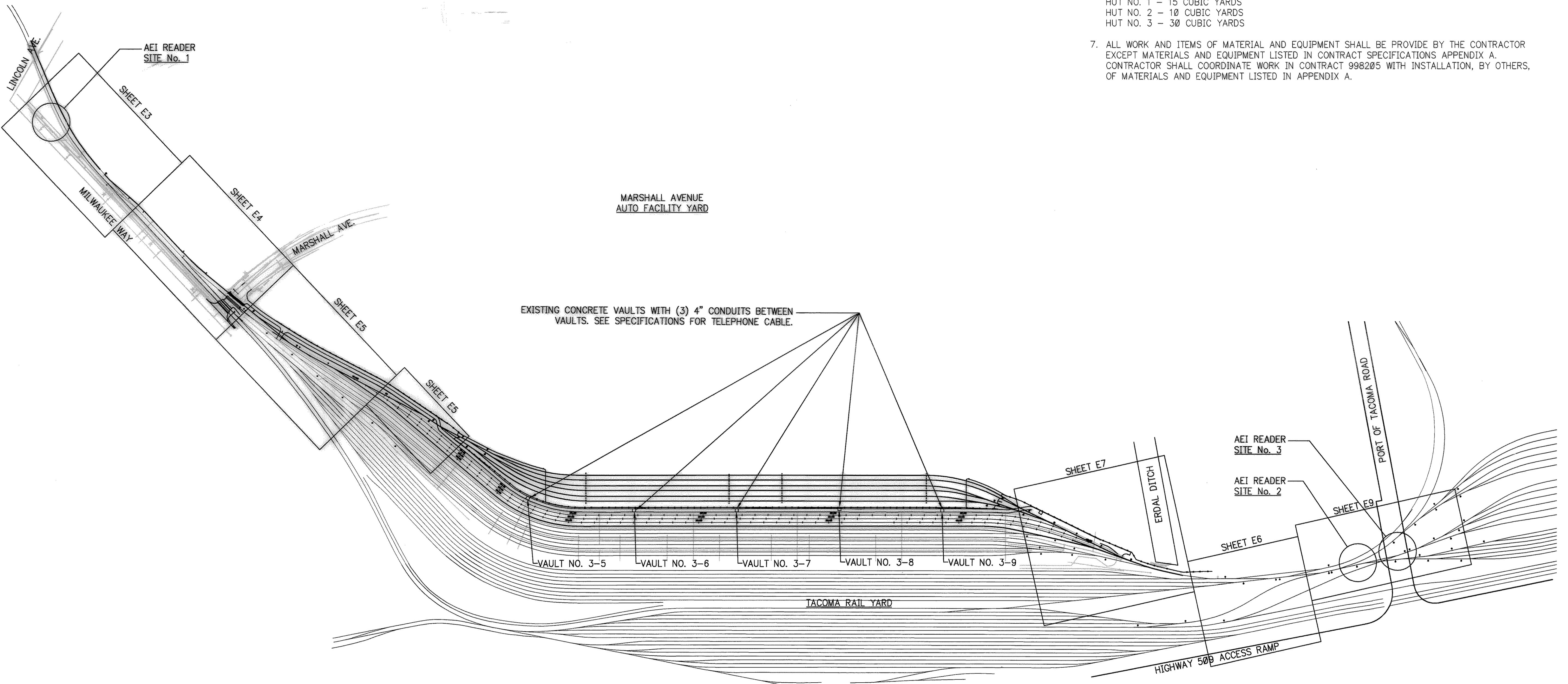
3. TACOMA RAIL WILL BE OPERATING TRAINS ON ALL TRACKS DURING THE CONSTRUCTION PERIOD. CONTRACTOR SHALL INCLUDE IN THE CONSTRUCTION COST ADEQUATE ALLOWANCES TO COVER THE TACOMA RAIL INTERRUPTIONS.

4. AT ALL LOCATIONS IN THE RAILROAD YARD, ALL MATERIAL EXCAVATED FOR INSTALLATION OF VAULTS, PULLBOXES, EQUIPMENT FOUNDATIONS AND CONDUIT TRENCHES SHALL NOT BE MIXED WITH EXISTING BALLAST OR GRAVEL SURFACE, BUT SHALL INSTEAD BE LOADED INTO A TRUCK AND STOCKPILED OUTSIDE THE YARD FOR USE AS BACKFILL. MATERIAL SHALL BE BROUGHT BACK FOR BACKFILL OR NEW $1\frac{1}{2}$ " MINUS GRAVEL SHALL BE PROVIDED. ALL BACKFILL SHALL BE FINISHED WITH A 6" LAYER OF RAILROAD BALLAST OR 5/8" MINUS CRUSHED ROCK TO MATCH THE EXISTING SURROUNDING AREA. ALL IMPORT/EXPORT MATERIAL IS TO BE TESTED AND DOCUMENTED PER THE CONTRACT SPECIFICATIONS.

5. MAXIMUM TRENCH WIDTH SHALL BE 24" UNLESS OTHERWISE APPROVED. TRENCH DEPTH SHALL BE AS REQUIRED TO PROVIDE SPECIFIED COVER. SEE DRAWING E12 FOR TRENCH, BACKFILL, AND CONDUIT INSTALLATION REQUIREMENTS.

6. AT EACH AEI HUT GRADE THE AREA AROUND THE HUT TO PRODUCE A SMOOTH, DRAINED SURFACE AND THEN PROVIDE A MINIMUM 3" THICK FILL OF 5/8" MINUS CRUSHED ROCK. PROVIDE QUANTITY OF 5/8" MINUS CRUSHED ROCK AS FOLLOWS.
HUT NO. 1 – 15 CUBIC YARDS
HUT NO. 2 – 10 CUBIC YARDS
HUT NO. 3 – 30 CUBIC YARDS

7. ALL WORK AND ITEMS OF MATERIAL AND EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR EXCEPT MATERIALS AND EQUIPMENT LISTED IN CONTRACT SPECIFICATIONS APPENDIX A. CONTRACTOR SHALL COORDINATE WORK IN CONTRACT 998205 WITH INSTALLATION, BY OTHERS, OF MATERIALS AND EQUIPMENT LISTED IN APPENDIX A.



EP-6257-20

AEI EXPANSION AUTO, PCT & TACOMA IL INTERCHANGE YARD SITE PLAN

DRAWING DATE:	03-18-05	MARK	REVISION	BY:	APPROVED:	DATE:
PORT ADDRESS:						
PORT PARCEL:						

CONTRACT NUMBER: 998205
E. NUMBER: E2041
PHASE: 1
TOWNSHIP: RANGE: SECTION:
DATUM: HORIZ: VERT:
DRAWING SCALE: 1" = 200'

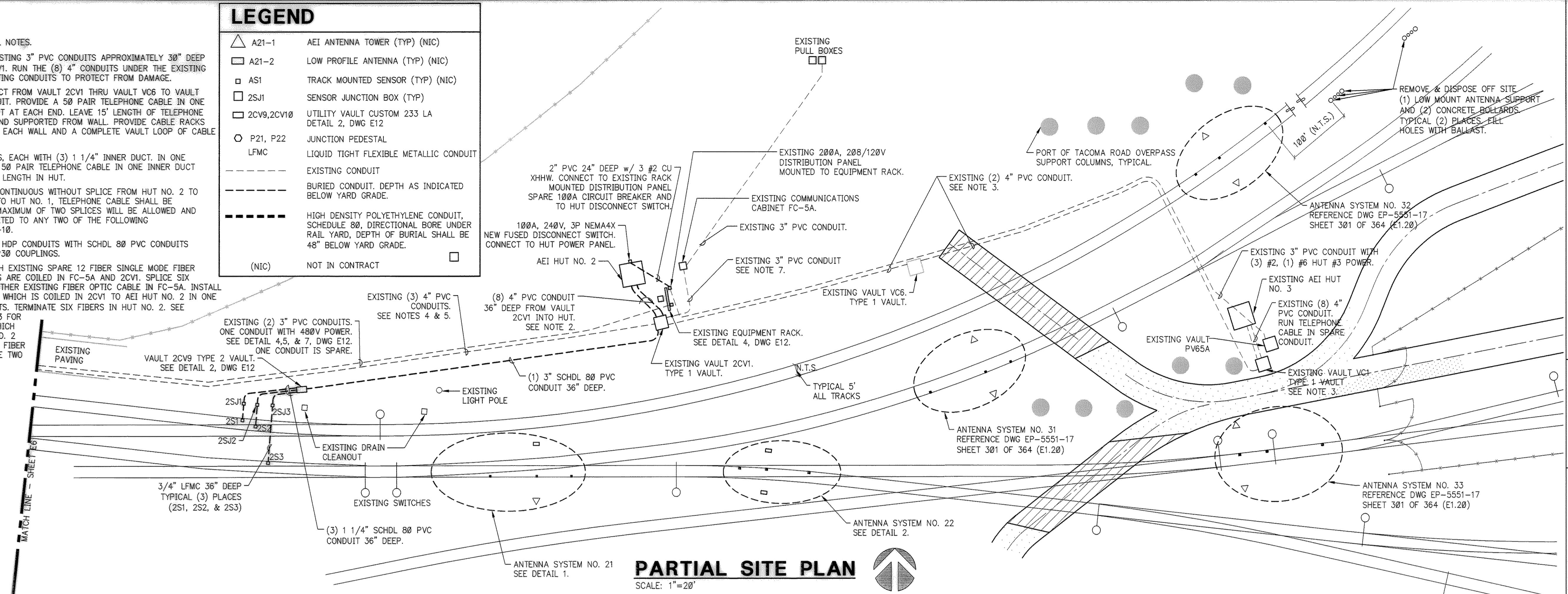
LE NUMBER:

NOTES:

1. SEE DRAWING E2 FOR GENERAL NOTES.
2. HAND DIG TO LOCATE TWO EXISTING 3" PVC CONDUITS APPROXIMATELY 30" DEEP AT NORTH FACE OF VAULT 2CV1. RUN THE (8) 4" CONDUITS UNDER THE EXISTING CONDUITS. SUPPORT THE EXISTING CONDUITS TO PROTECT FROM DAMAGE.
3. PROVIDE (3) 1 1/4" INNER DUCT FROM VAULT 2CV1 THRU VAULT VC6 TO VAULT VC1 IN EXISTING SPARE CONDUIT. PROVIDE A 50 PAIR TELEPHONE CABLE IN ONE INNER DUCT AND INTO THE HUT AT EACH END. LEAVE 15' LENGTH OF TELEPHONE CABLE IN EACH HUT COILED AND SUPPORTED FROM WALL. PROVIDE CABLE RACKS AND ARMS IN EACH VAULT ON EACH WALL AND A COMPLETE VAULT LOOP OF CABLE SUPPORTED ON THE ARMS.
4. EXISTING (3) 4" PVC CONDUITS, EACH WITH (3) 1 1/4" INNER DUCT. IN ONE OF THE CONDUITS, PROVIDE A 50 PAIR TELEPHONE CABLE IN ONE INNER DUCT AND INTO THE HUT. LEAVE 15' LENGTH IN HUT.
5. TELEPHONE CABLE SHALL BE CONTINUOUS WITHOUT SPLICE FROM HUT NO. 2 TO HUT NO. 3. FROM HUT NO. 2 TO HUT NO. 1, TELEPHONE CABLE SHALL BE CONTINUOUS EXCEPT THAT A MAXIMUM OF TWO SPLICES WILL BE ALLOWED AND SPLICE LOCATION WILL BE LIMITED TO ANY TWO OF THE FOLLOWING VAULTS: 3-1, 3-2, 3-3, & 3-10.
6. CONNECT TO AND EXTEND THE HDP CONDUITS WITH SCHDL 80 PVC CONDUITS USING KRALOY NO. 078008 CP30 COUPLINGS.
7. EXISTING 3" PVC CONDUIT WITH EXISTING SPARE 12 FIBER SINGLE MODE FIBER OPTIC CABLE. THE CABLE ENDS ARE COILED IN FC-5A AND 2CV1. SPLICE SIX FIBERS TO SIX FIBERS OF ANOTHER EXISTING FIBER OPTIC CABLE IN FC-5A. INSTALL THE EXISTING 12 FIBER CABLE WHICH IS COILED IN 2CV1 TO AEI HUT NO. 2 IN ONE OF THE EIGHT NEW 4" CONDUITS. TERMINATE SIX FIBERS IN HUT NO. 2. SEE SPECIFICATIONS SECTION 16123 FOR MATERIALS AND EQUIPMENT WHICH SHALL BE PROVIDED IN HUT NO. 2 AND HUT NO. 3 TO TERMINATE FIBER OPTIC CABLES IN EACH OF THE TWO HUTS.

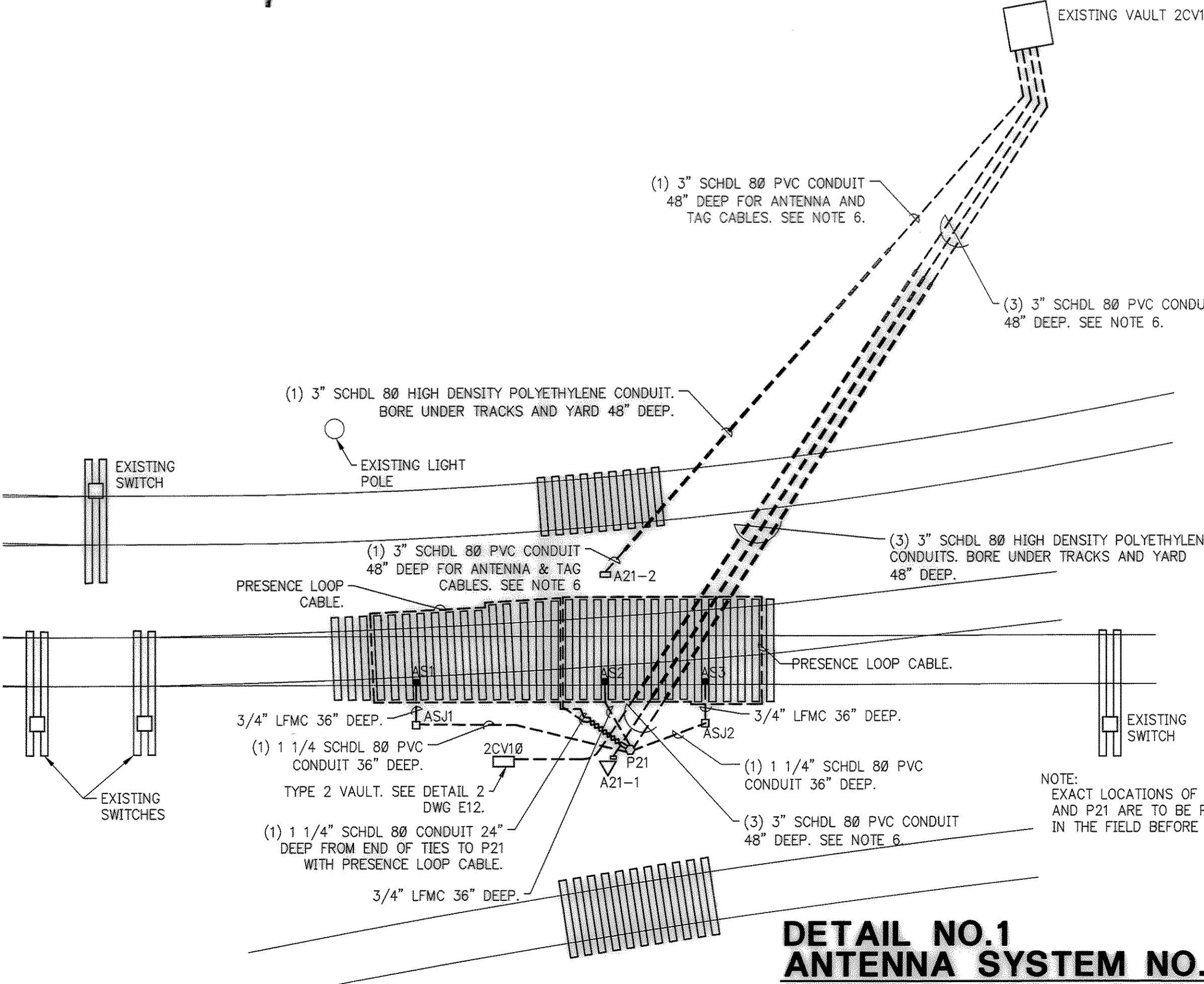
LEGEND

	A21-1	AEI ANTENNA TOWER (TYP) (NIC)
	A21-2	LOW PROFILE ANTENNA (TYP) (NIC)
	AS1	TRACK MOUNTED SENSOR (TYP) (NIC)
	2SJ1	SENSOR JUNCTION BOX (TYP)
	2CV9,2CV10	UTILITY VAULT CUSTOM 233 LA DETAIL 2, DWG E12
	P21, P22	JUNCTION PEDESTAL
LFMC		LIQUID TIGHT FLEXIBLE METALLIC CONDUIT
-----		EXISTING CONDUIT
-----		BURIED CONDUIT. DEPTH AS INDICATED BELOW YARD GRADE.
-----		HIGH DENSITY POLYETHYLENE CONDUIT, SCHEDULE 80, DIRECTIONAL BORE UNDER RAIL YARD, DEPTH OF BURIAL SHALL BE 48" BELOW YARD GRADE.
(NIC)		NOT IN CONTRACT



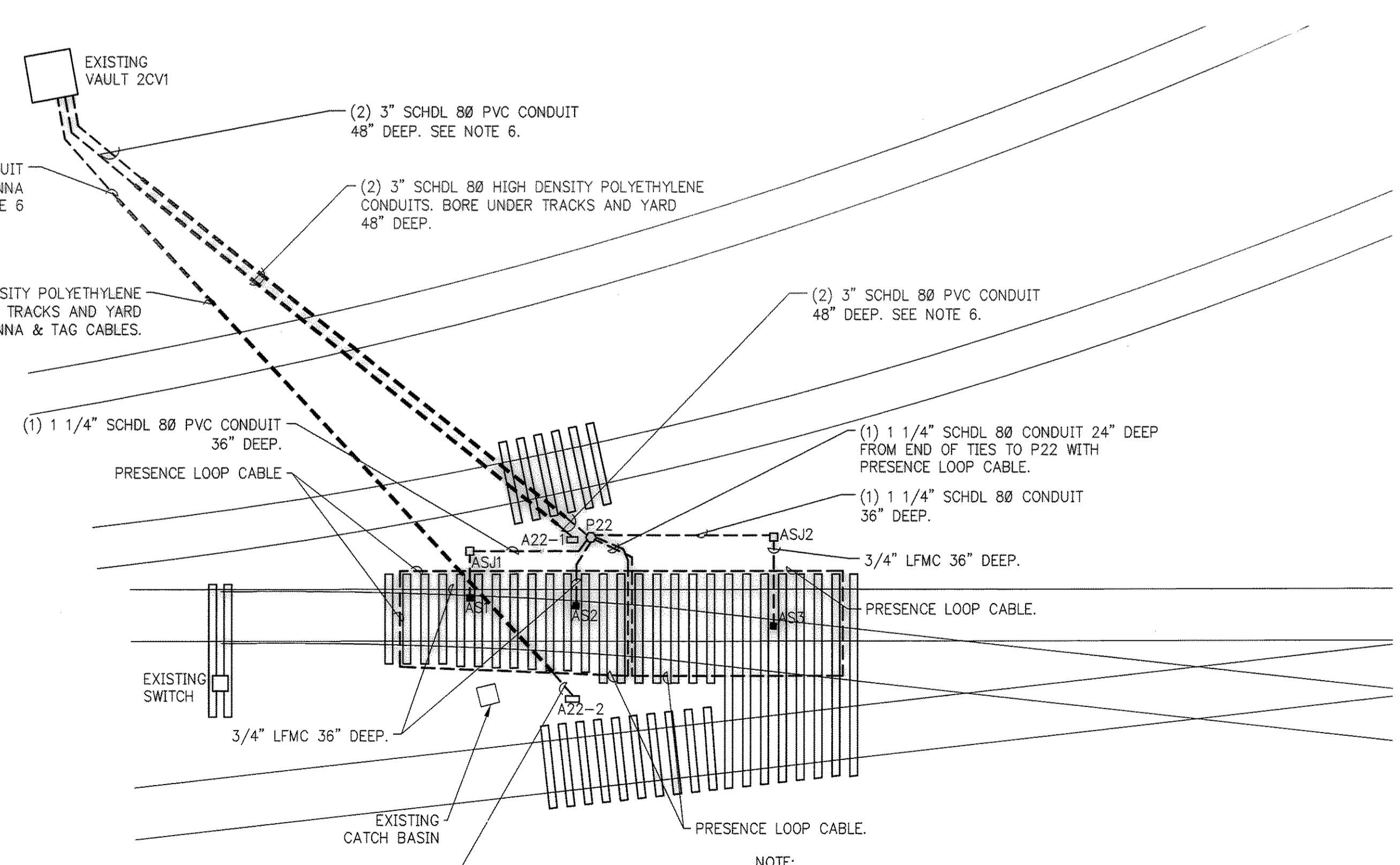
PARTIAL SITE PLAN

SCALE: 1" = 2'



DETAIL NO.1 ANTENNA SYSTEM NO. 21

SCALE: 1" =

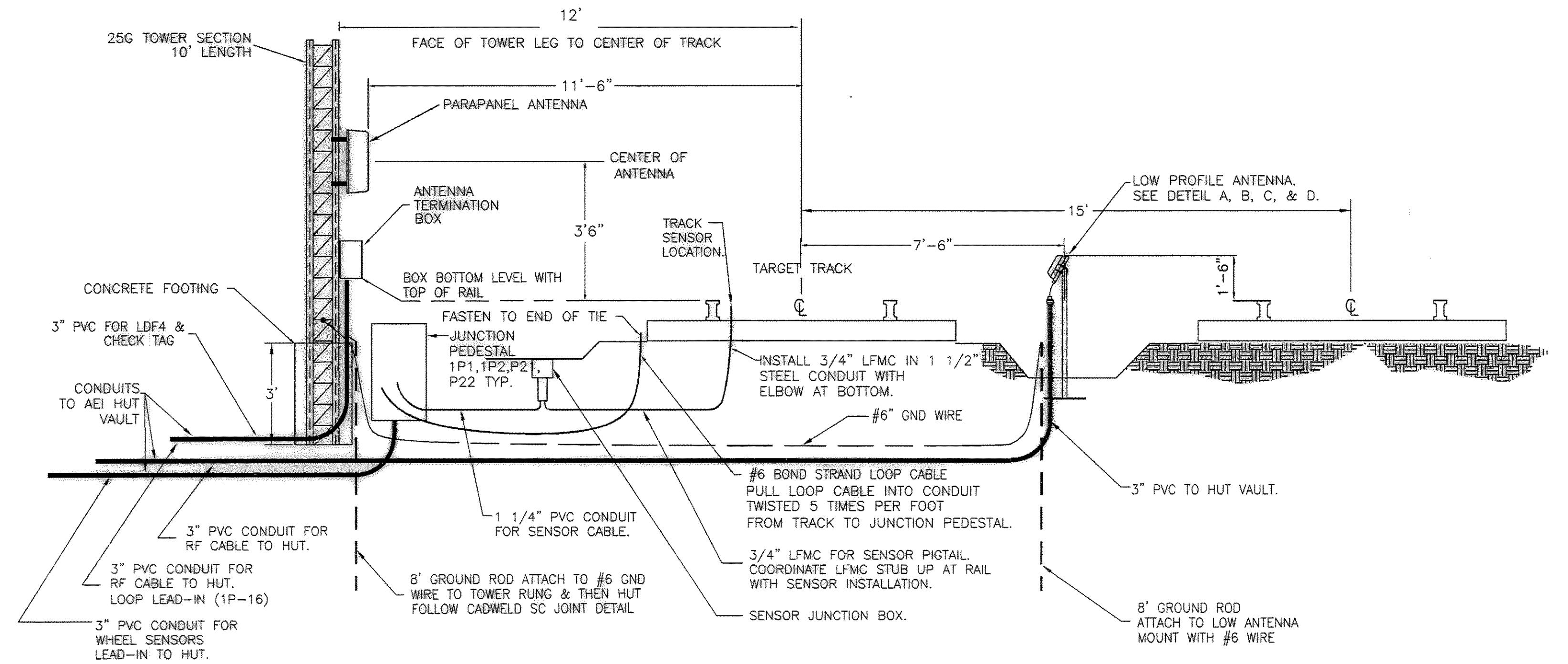


BEFORE BEGINNING DIRECTIONAL BORING

DETAIL NO.2
ANTENNA SYSTEM NO. 22

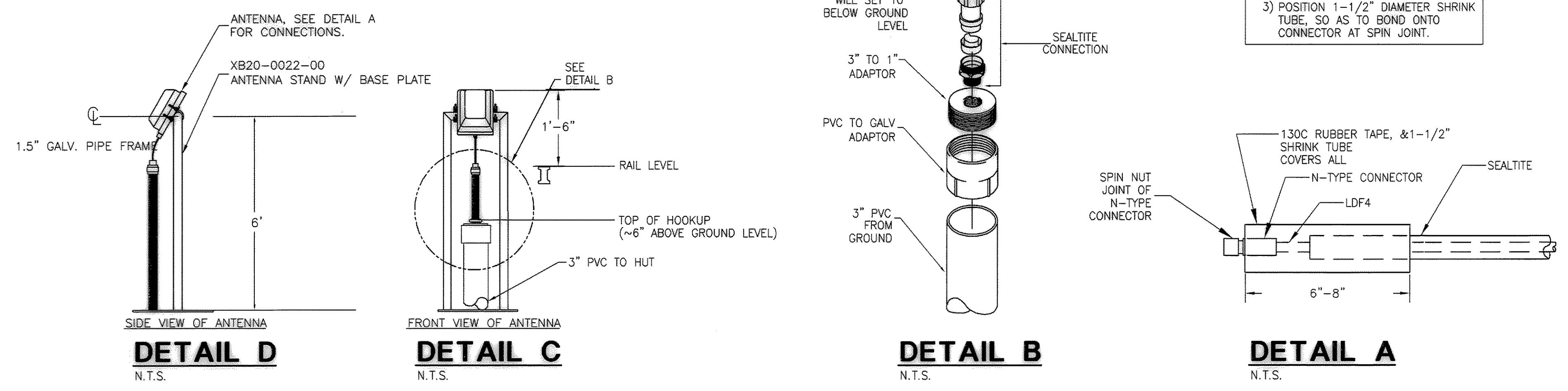
SCALE: 1" = 1

EP-62257-20		AEI EXPANSION AUTO, PCT & TACOMA RAIL INTERCHANGE YARD PARTIAL SITE PLAN		TOWNSHIP: RANGE: SECTION: DATUM: HORIZ: VERT: DRAWING SCALE: NOTED	
E 9		SHEET 9 OF 12		CONTRACT NUMBER: 998205 E NUMBER: 20041 DRAWING DATE: 03-18-06	
APPROVED 		JEF CHECKED BY - DATE 		MARK REVISION PROJECT ENGR. - DATE CHIEF ENGINEER - DATE 30 min Q5	
				DRAWING DATE: 03-18-05 PORT ADDRESS: PORT PARCEL:	
				APPROVED: DATE: APPROVED: DATE: APPROVED: DATE:	



TYPICAL TRACK ELEVATION

N.T.



DETAIL D

DETAIL C

DETAIL B

DETAIL A

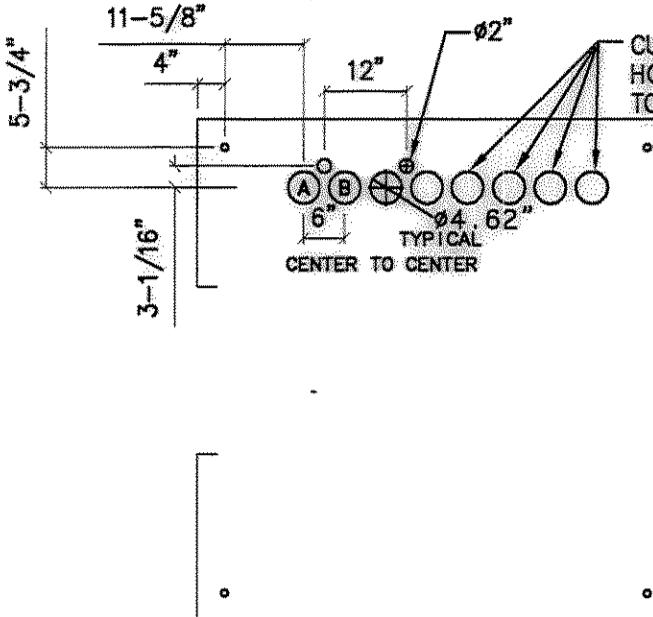
APPROVED		P.O. BOX 1837 TACOMA, WA 98401 253-383-5841	
			
CHIEF ENGINEER - DATE <i>M. J. H.</i> 30 May 05	PROJECT ENGR. - DATE	CHECKED BY - DATE	BY: APPROVED: DATE:
DRAWING DATE: 03-18-05	MARK	REVISION	
PORT ADDRESS:			
PORT PARCEL:			

EP-6257-20

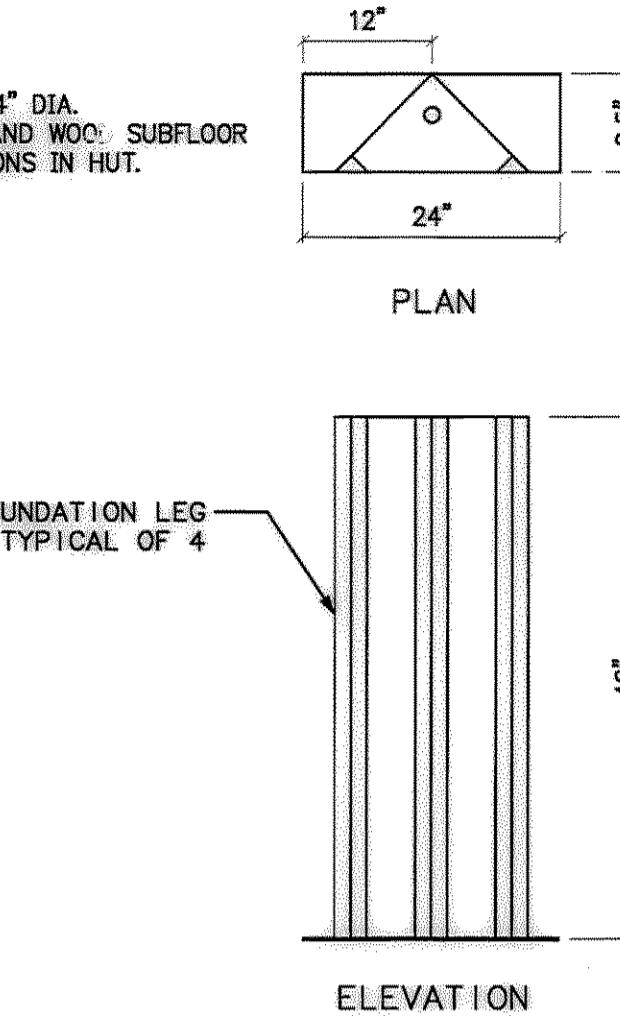
E 10

SHEET 10 OF 12

AEI EXPANSION
AUTO, PCT & TACOMA
RAIL INTERCHANGE YARD
DETAILS



8' x 8' AEI HUT
AEI HUT MOUNTING HOLE AND CONDUIT ENTRY HOLE
LOCATION DETAILS

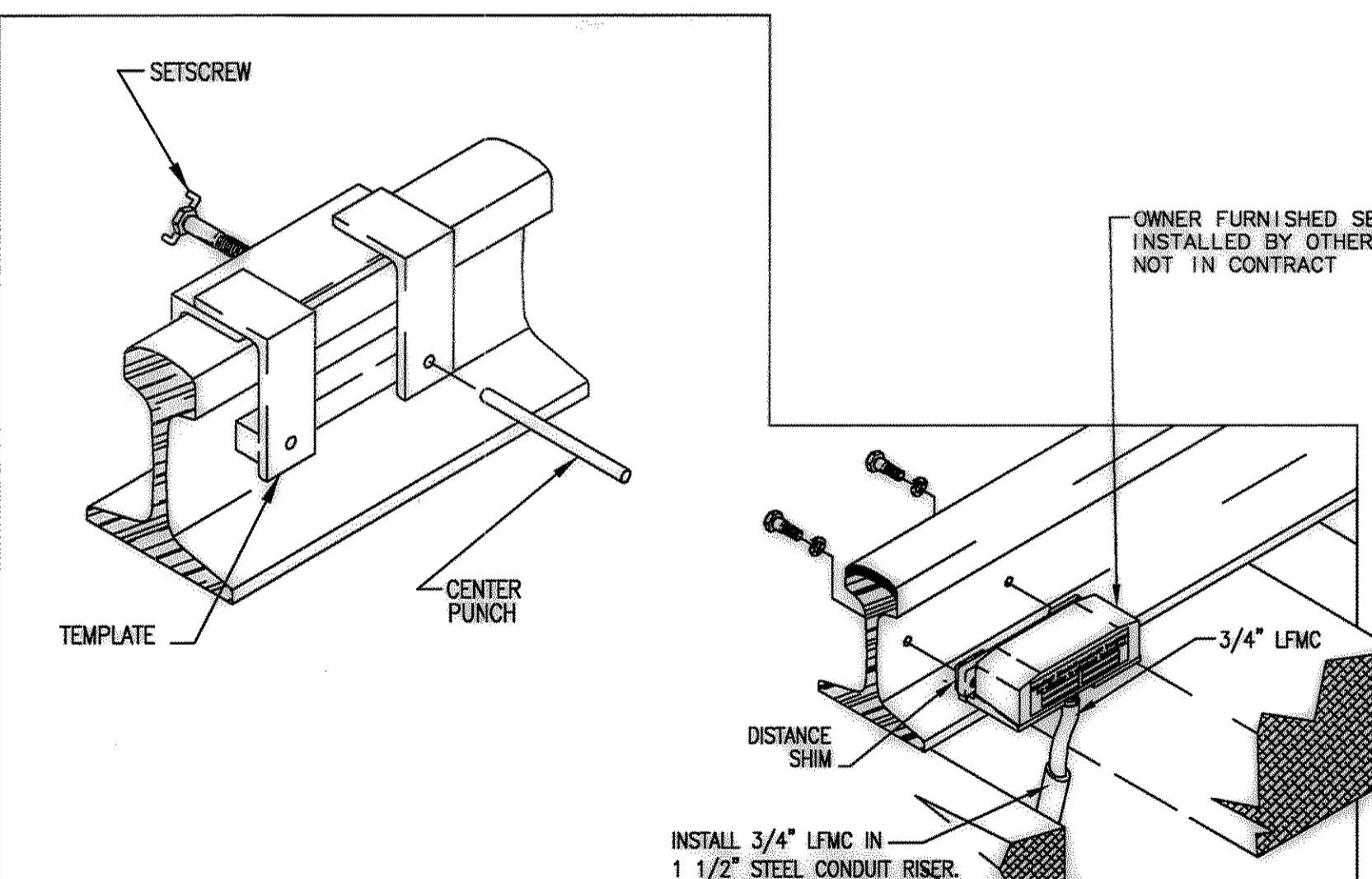


DETAIL NO. 10 - HUT PLAN

NOT TO SCALE

DETAIL NO. 11 - HUT FOUNDATION

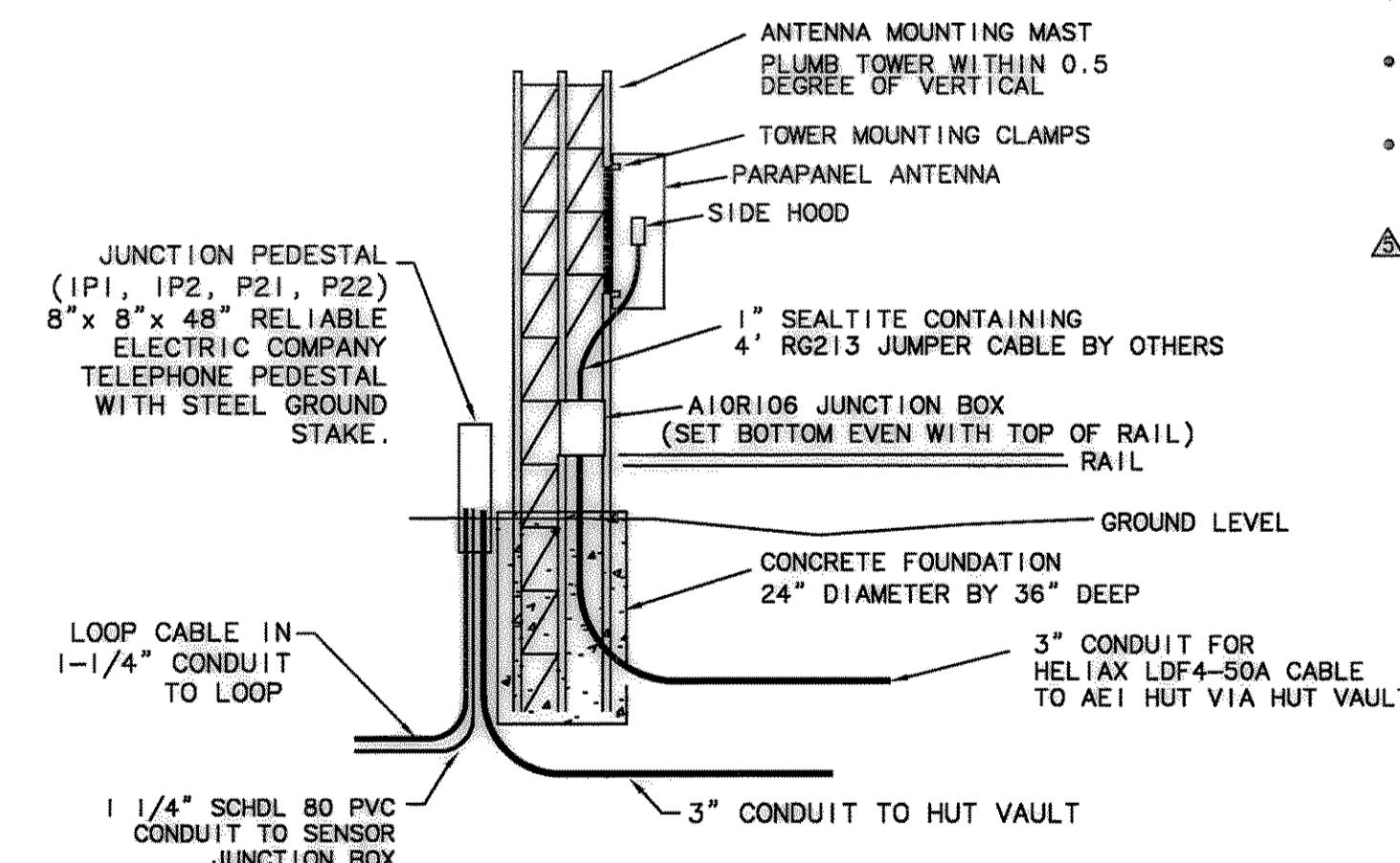
NOT TO SCALE



NOTE: PROVIDE 1-1/2" IMC CONDUIT
PROTECTIVE SLEEVE WITH ELBOW
AT BOTTOM. INSTALL 3/4" CONDUIT
IN SLEEVE. PROVIDE BUSHINGS
BOTH ENDS OF IMC.

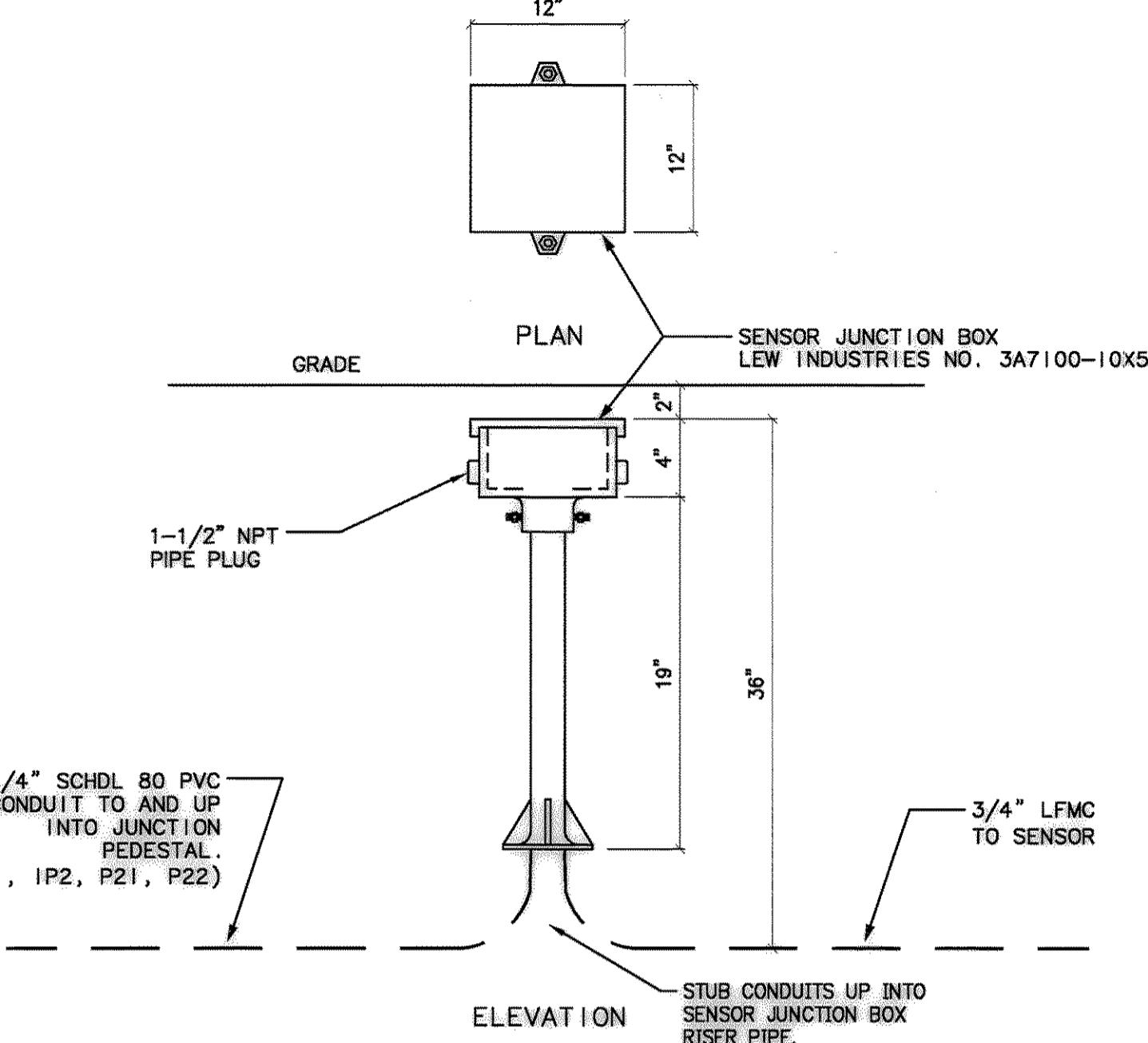
DETAIL NO. 14 - TIEFENBACH SENSOR INSTALLATION

NOT TO SCALE



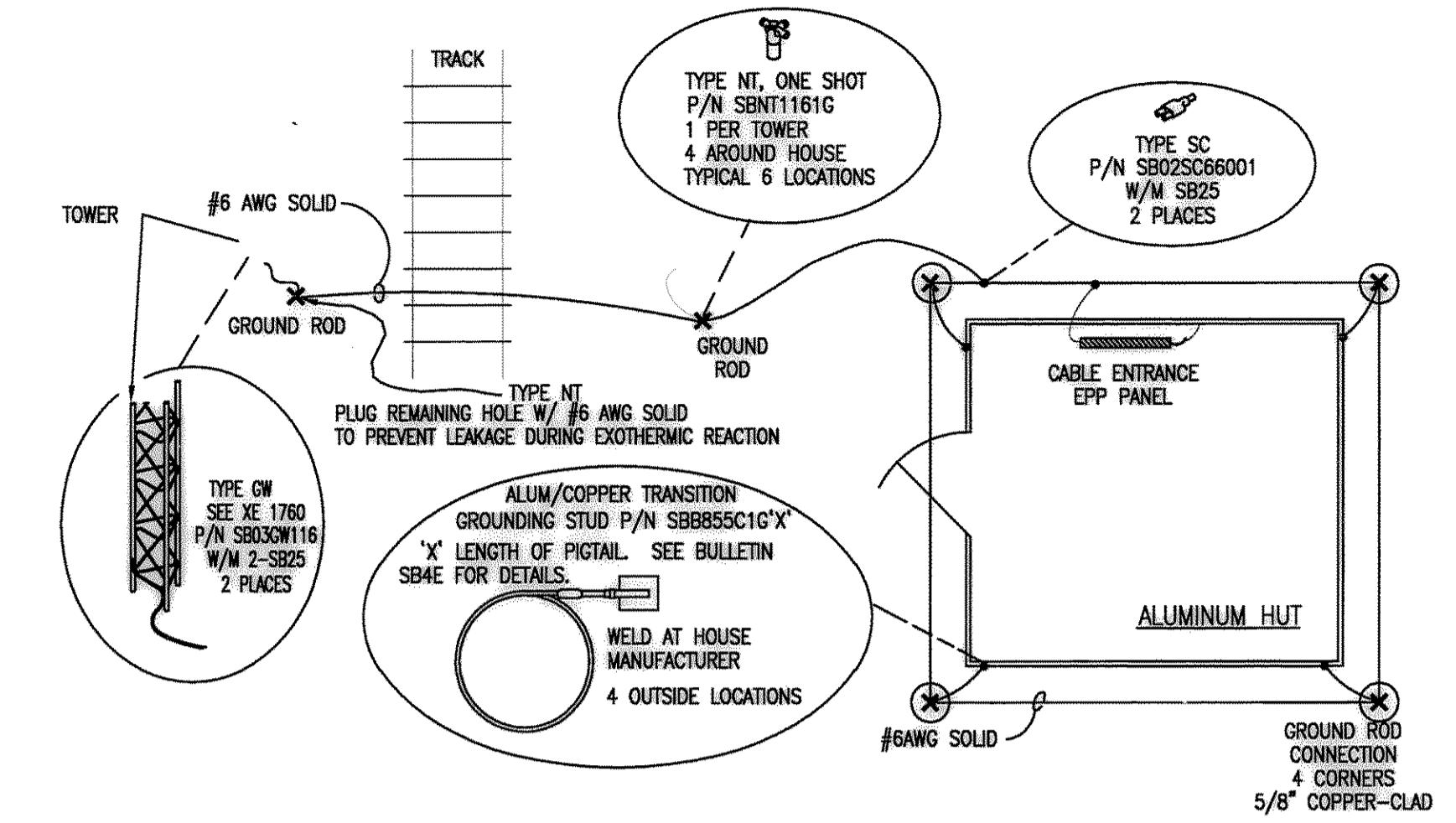
DETAIL NO. 15 - ANTENNA MOUNTING

NOT TO SCALE



DETAIL NO. 12 - SENSOR JUNCTION BOX

NOT TO SCALE

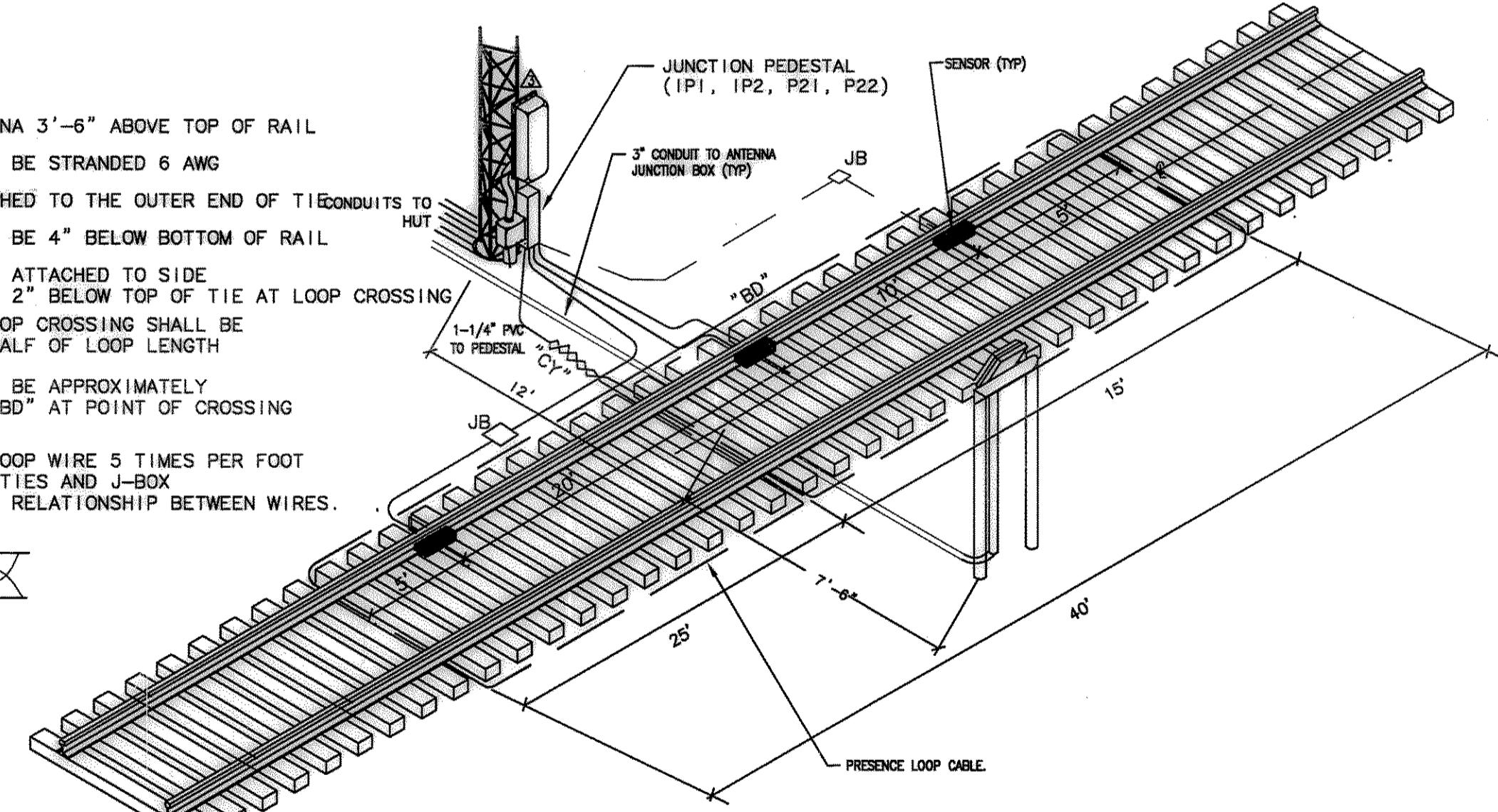


DETAIL NO. 13 - HUT GROUNDING AND BONDING

NOT TO SCALE

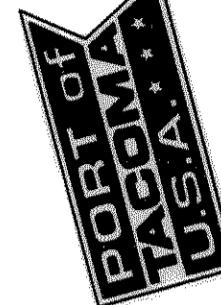
NOTES:

- ⚠ 3" CONDUIT
- ⚠ CENTER OF ANTENNA 3'-6" ABOVE TOP OF RAIL
- LOOP WIRE SHALL BE STRANDED 6 AWG
- LOOP WIRE ATTACHED TO THE OUTER END OF TIE CONDUITS TO HUT
- LOOP WIRE SHALL BE 4" BELOW BOTTOM OF RAIL
- LOOP WIRE SHALL BE ATTACHED TO SIDE OF TIE AT LEAST 2" BELOW TOP OF TIE AT LOOP CROSSING
- MID POINT OF LOOP CROSSING SHALL BE WITHIN 18" OF HALF OF LOOP LENGTH
- WIRE "CY" SHALL BE APPROXIMATELY 4" BELOW WIRE "BD" AT POINT OF CROSSING
- ⚠ TWIST ENDS OF LOOP WIRE 5 TIMES PER FOOT BETWEEN END OF TIES AND J-BOX TO INSURE FIXED RELATIONSHIP BETWEEN WIRES.

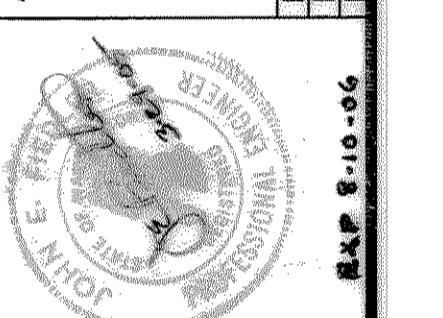


DETAIL NO. 16 - TYPICAL SYSTEM LAYOUT ISOMETRIC

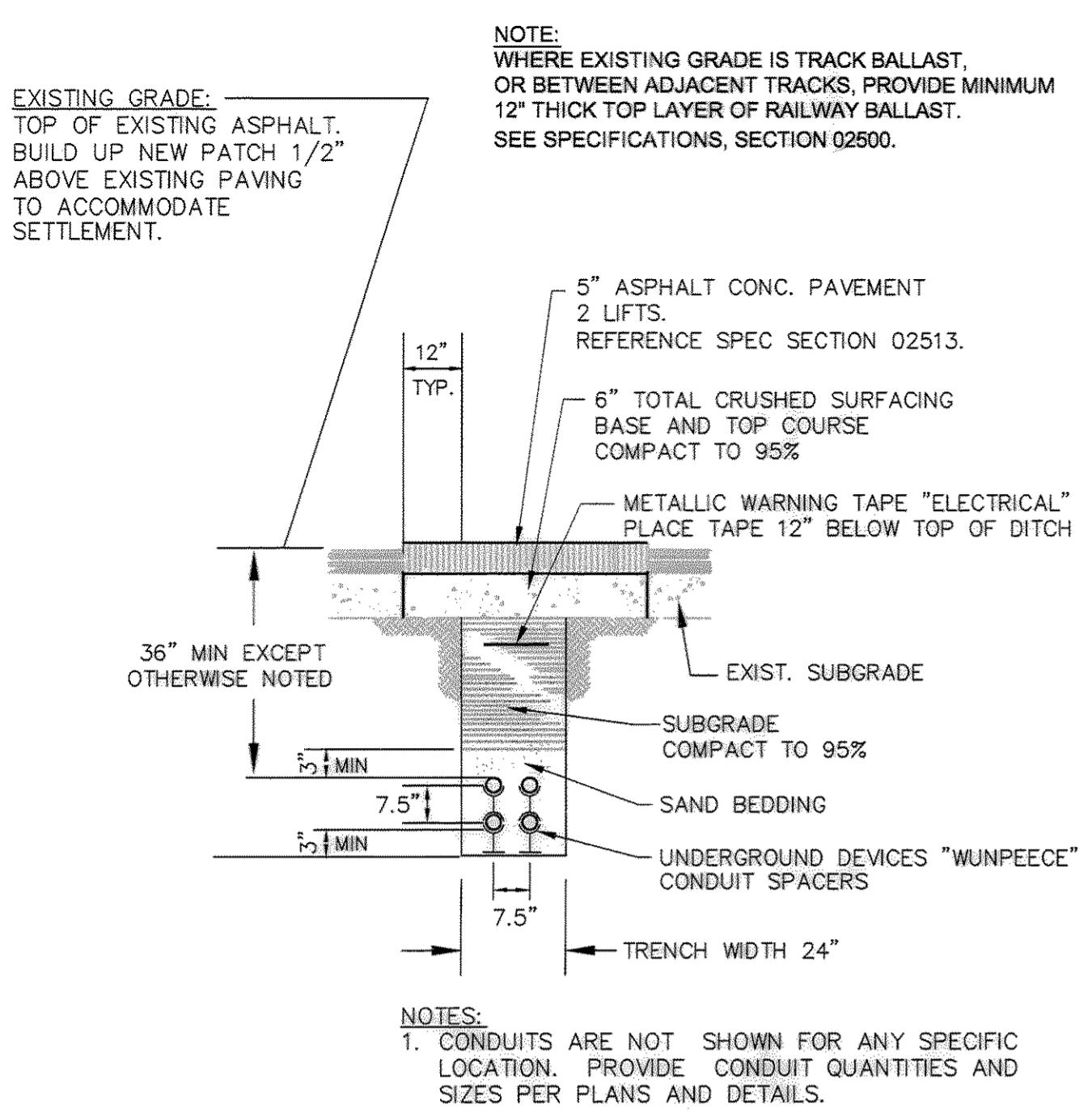
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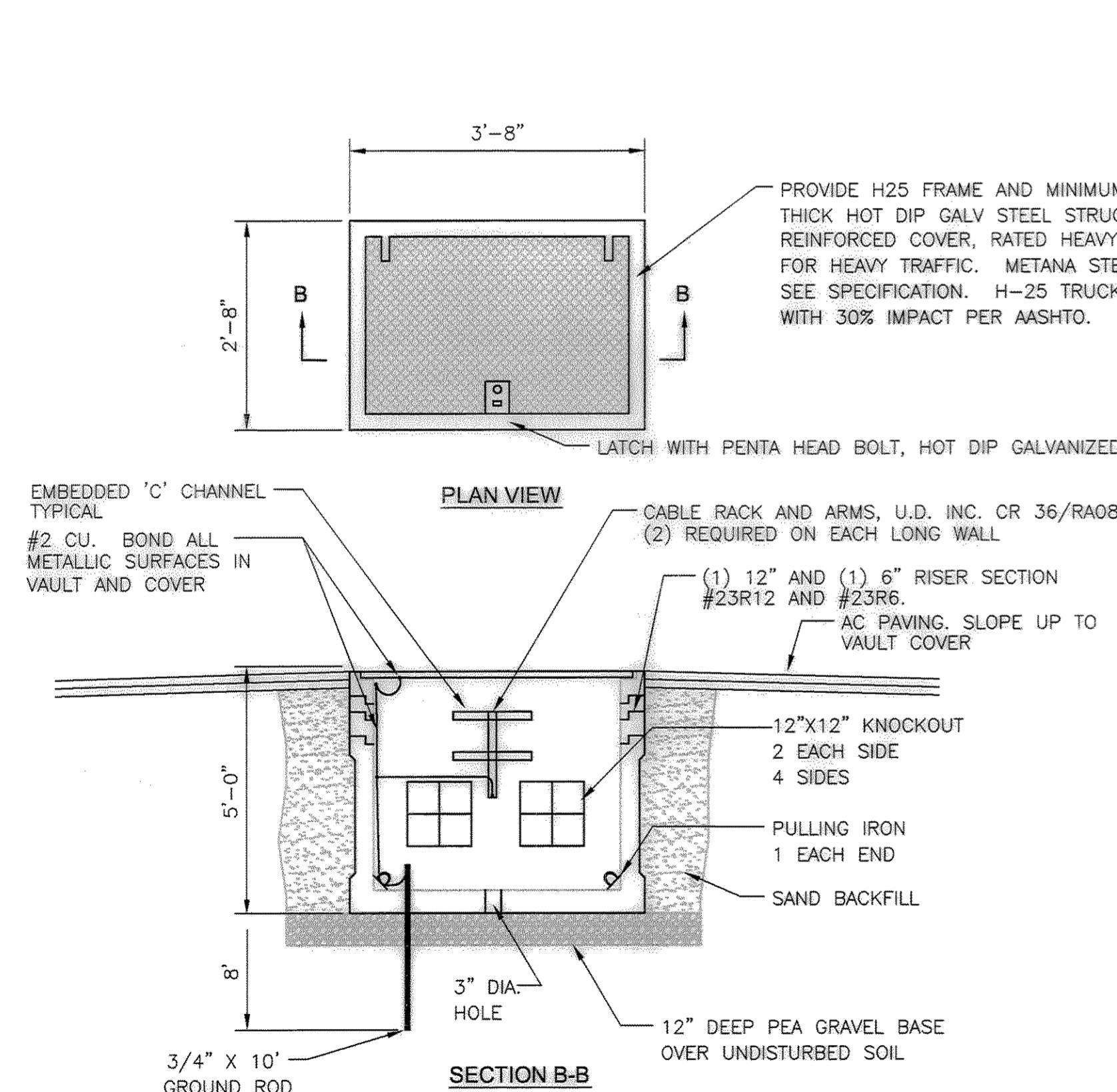
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CHIEF ENGINEER - DATE 20 Mar 05	REVISION MARK	



FILE NUMBER: EP-6257-20	TOWNSHIP: RANGE: SECTION: CONTRACT NUMBER: 992025	PHASE: E NUMBER: 2041
DETAIL 12 OF 12 AUTO, PCT & TACOMA RAIL INTERCHANGE YARD DETAILS		

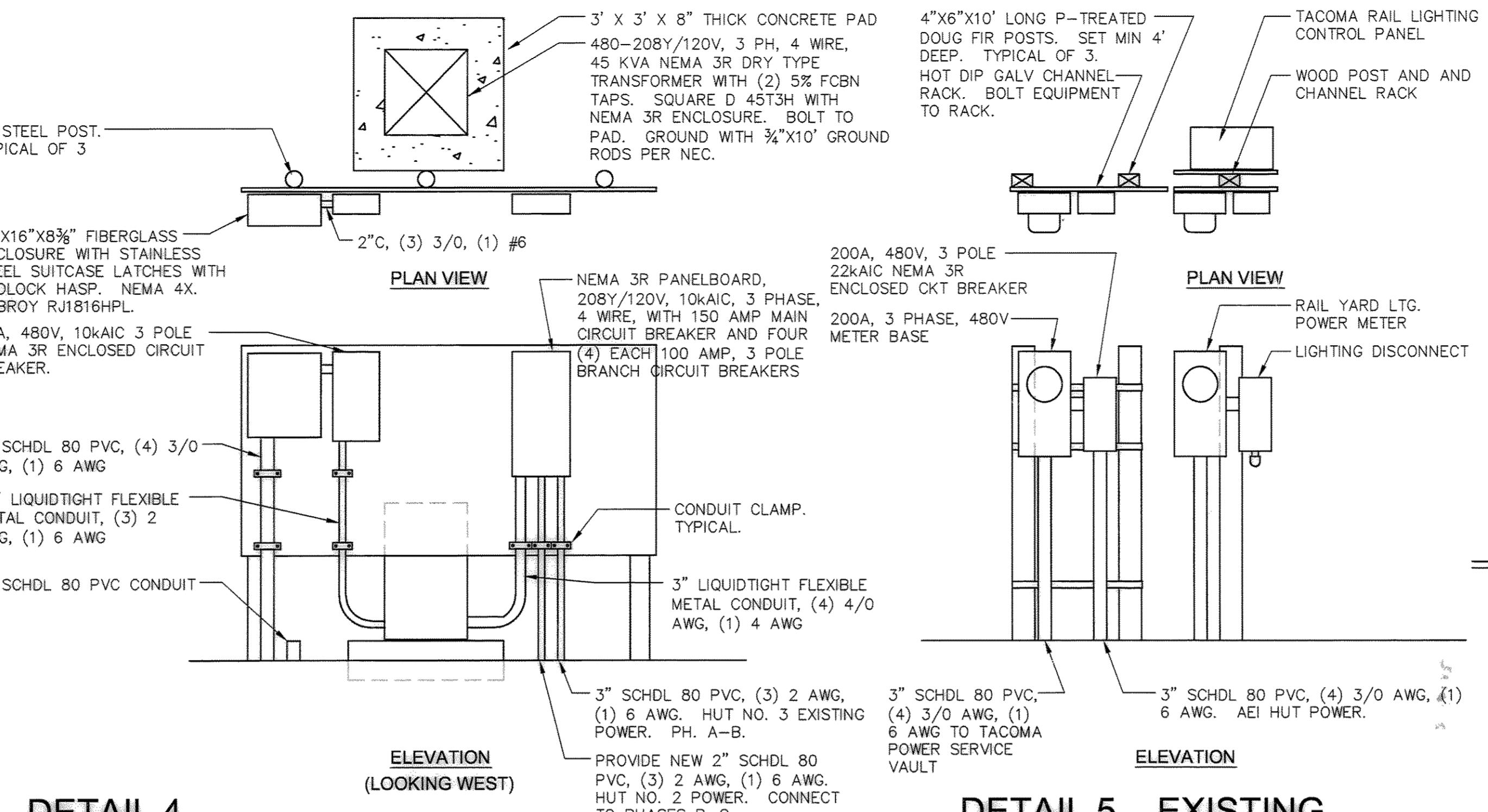


DETAIL 3
TYPICAL TRENCH SECTION
NO SCALE

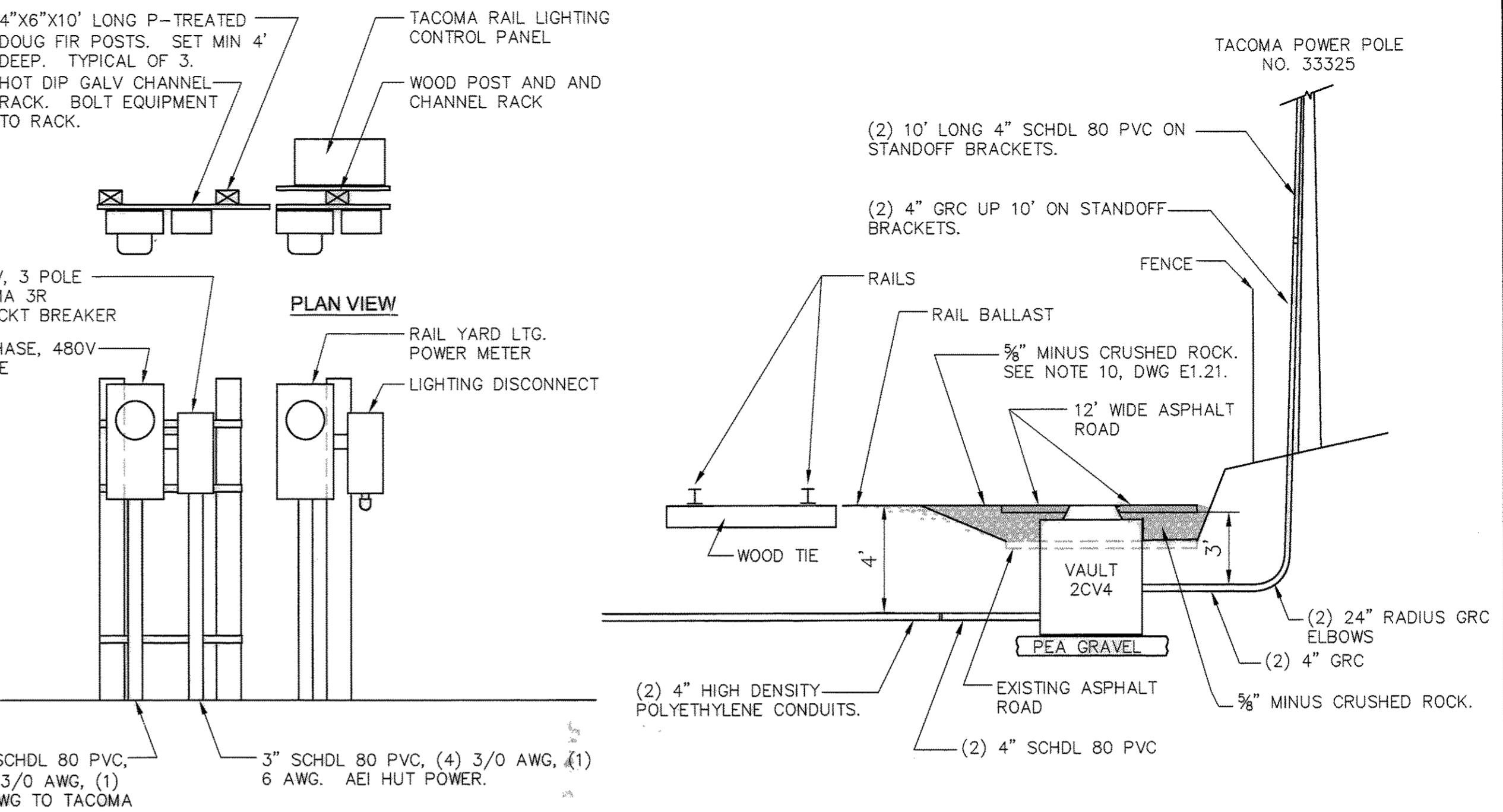


DETAIL 2 - VAULT TYPE 2
UTILITY VAULT CUSTOM 233-LA WITH RISER SECTIONS
NO SCALE

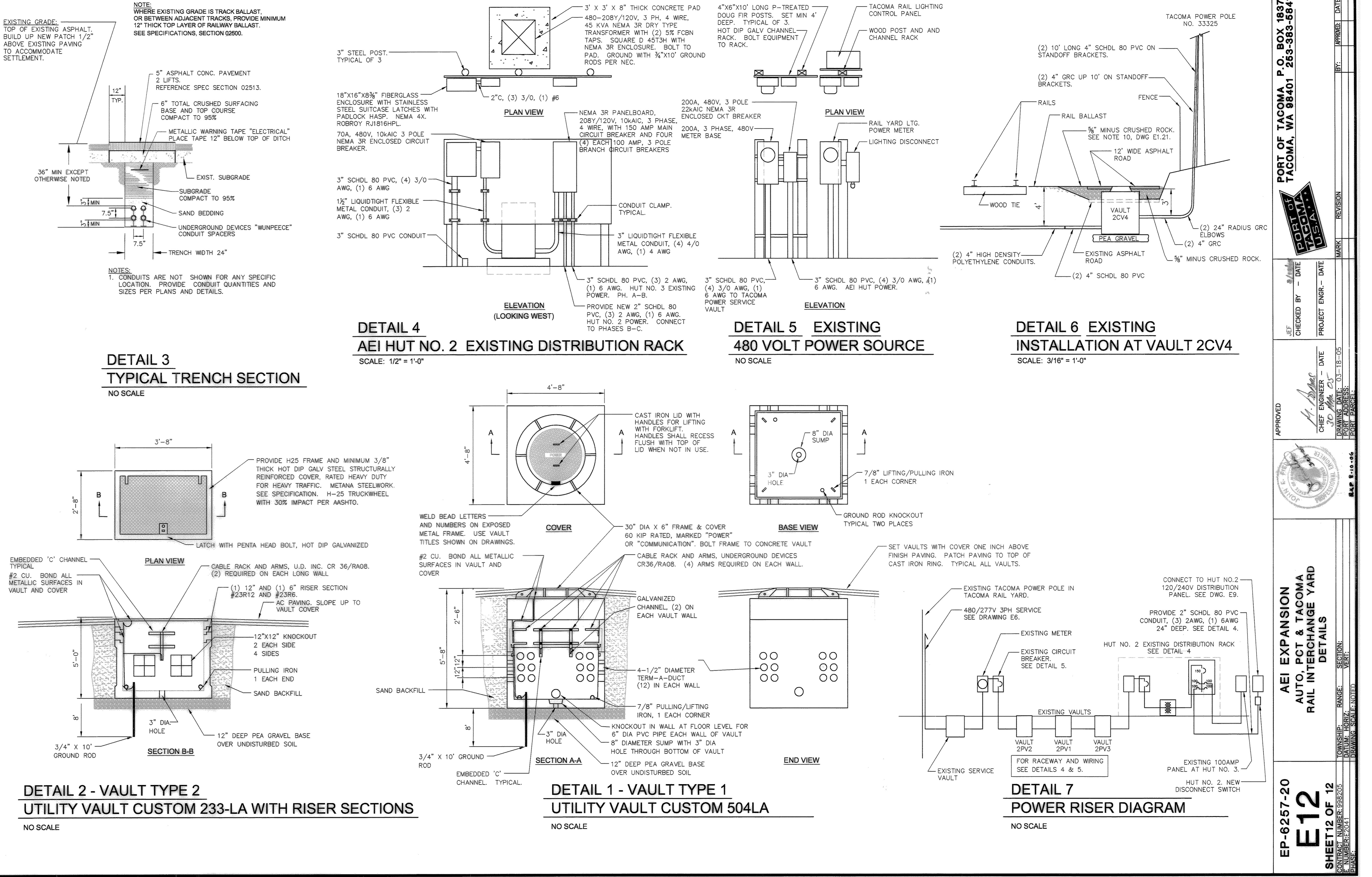
DETAIL 4
AEI HUT NO. 2 EXISTING DISTRIBUTION RACK
SCALE: 1/2" = 1'-0"



DETAIL 5 EXISTING
480 VOLT POWER SOURCE
NO SCALE



DETAIL 6 EXISTING
INSTALLATION AT VAULT 2CV4
SCALE: 3/16" = 1'-0"



DETAIL 1 - VAULT TYPE 1
UTILITY VAULT CUSTOM 504LA
NO SCALE

DETAIL 7
POWER RISER DIAGRAM
NO SCALE