

August 26, 2011

To: Regional Managers/Regional Engineers

Fr: Richard Schmedes, EMT - Systems Manager  
Ken Jong, EMT - Engineering Manager

Re: Notice to Designers (NTD) No. 4- System Facility Guidance Memo – Traction Power Supply System (TPS), Communication System (COM), and Train Control (TC) related Drawings to be developed by the Regional Consultants at 30% Design Submission Level

Purpose:

This memorandum provides guidance for the types of drawings and level of detail required on the Systems related drawings to be produced by the Regional Consultants at the 30% level.

The submittals by each regional consultant should include site specific drawings for each wayside system facility. The drawings will be needed for sites identified for Traction Power Facilities (traction power substation and associated power utility switching stations, switching stations, and paralleling stations), Communications Standalone Radio facilities, and Train Control facilities including wayside power control cubicles planned in the section under their jurisdiction. These drawings are required to show details including:

- site plan
- grading and paving plan and retaining wall details as applicable
- road access and parking
- composite utility relocation plan
- ductbank and/or overhead feeder connections (where applicable) from the power supply utility network to the utility switching station and the traction power substation
- ductbank and/or overhead feeder connections from the System facilities to the railroad ROW for track located on ground, on aerial structures, in trenches, and in tunnels.

Reference Set of Drawings:

A set of six reference drawings has been prepared to provide guidance to the regional consultants about the level of detail to be presented in their drawings and also for maintaining uniformity in the design submissions amongst different regional consultants.

This set includes:

- A typical system key plan,
- A typical site plan for system facilities,
- A typical grading and paving plan,
- Retaining wall – elevation,
- A typical utility relocation plan,
- An extract from a typical utility assessment summary for a site,

Please note the attached drawings are only intended for 30% guidance purposes, refer to TM 3.1.1.3, TM 3.1.5.3, TM 3.3.2, and TM 3.4.2 respective for specific design criteria.

The typical key plan, showing exclusively systems facility sites, has been included as a drawing. The provisioning of a similar key plan in the regional consultants' submission will facilitate understanding of the design and expeditious review of the facility spacing. This key plan should be produced at an appropriate scale that clearly shows the details within combined system facilities. If multiple alignments are being considered the RC should provide a different key plan for each alternative.

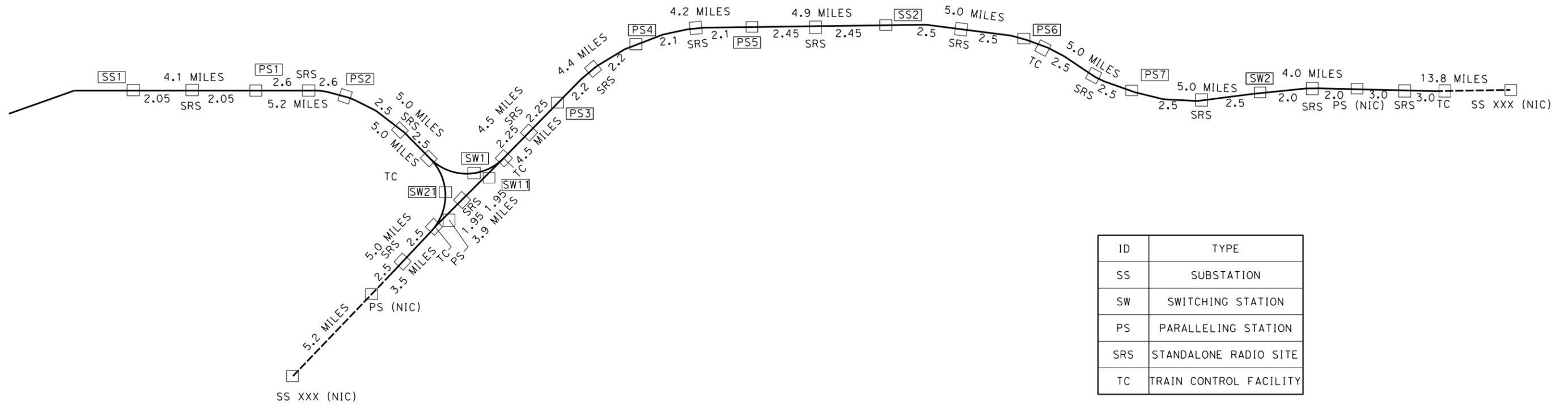
Direction to Regional Teams:

The set of these six reference drawings is attached for forwarding to the regional consultants for their guidance. These drawings do not pertain to one particular system facility; rather, these pertain to all systems facilities. They are representative of the types of drawings and not the design of a single site, and hence do not contain all the possible design drawings for the site preparation for a system facility. The requirement of each site will may be different and the Regional Consultant shall provide the appropriate drawings and level of details for the 30% design package.

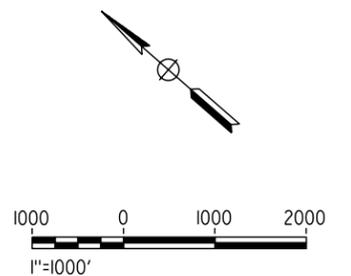
**PRELIMINARY**  
NOT FOR CONSTRUCTION

**NOTES:**

1. THIS IS A TYPICAL KEY PLAN FOR SYSTEM FACILITY SITES FOR A REGION. PROVIDE ACTUAL SITE AND LOCATION DETAILS FOR EACH FACILITY.
2. PROVIDE APPROPRIATE SCALE THAT CLEARLY DEMONSTRATES COMBINED KEY MAP FOR ALL SYSTEM (TPS, COM, TC) FACILITIES.
3. CRITERIA FOR LOCATING FACILITIES ARE CONTAINED IN TM 3.1.1.3, TM 3.1.5.3, TM 3.3.2 AND TM 3.4.2.
4. REFER TO NOTICE TO DESIGNERS NO. 7 - CHSTP FACILITY NAMING CONVENTION, FOR THE APPROPRIATE NOMENCLATURE.



ID	TYPE
SS	SUBSTATION
SW	SWITCHING STATION
PS	PARALLELING STATION
SRS	STANDALONE RADIO SITE
TC	TRAIN CONTROL FACILITY

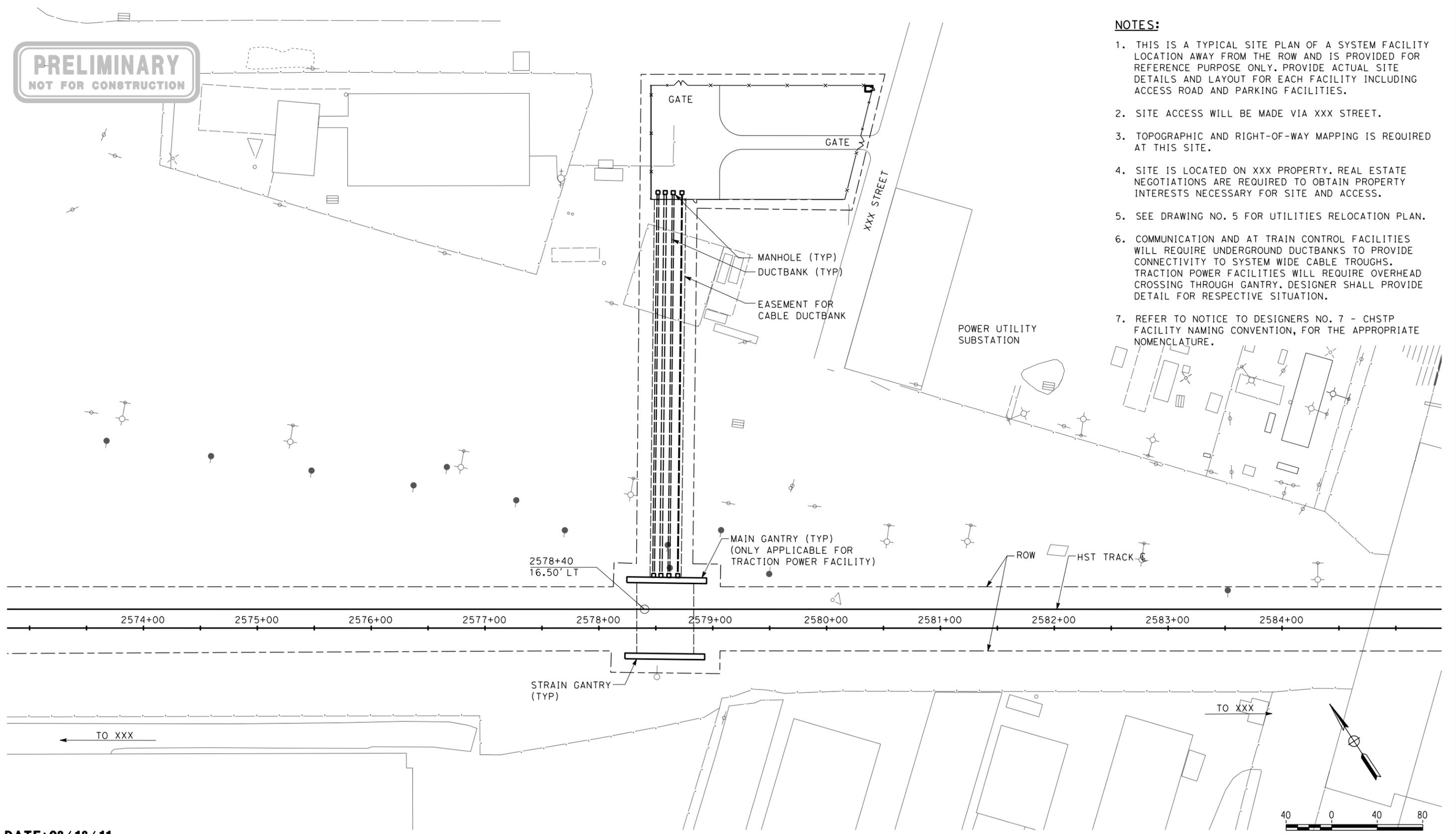


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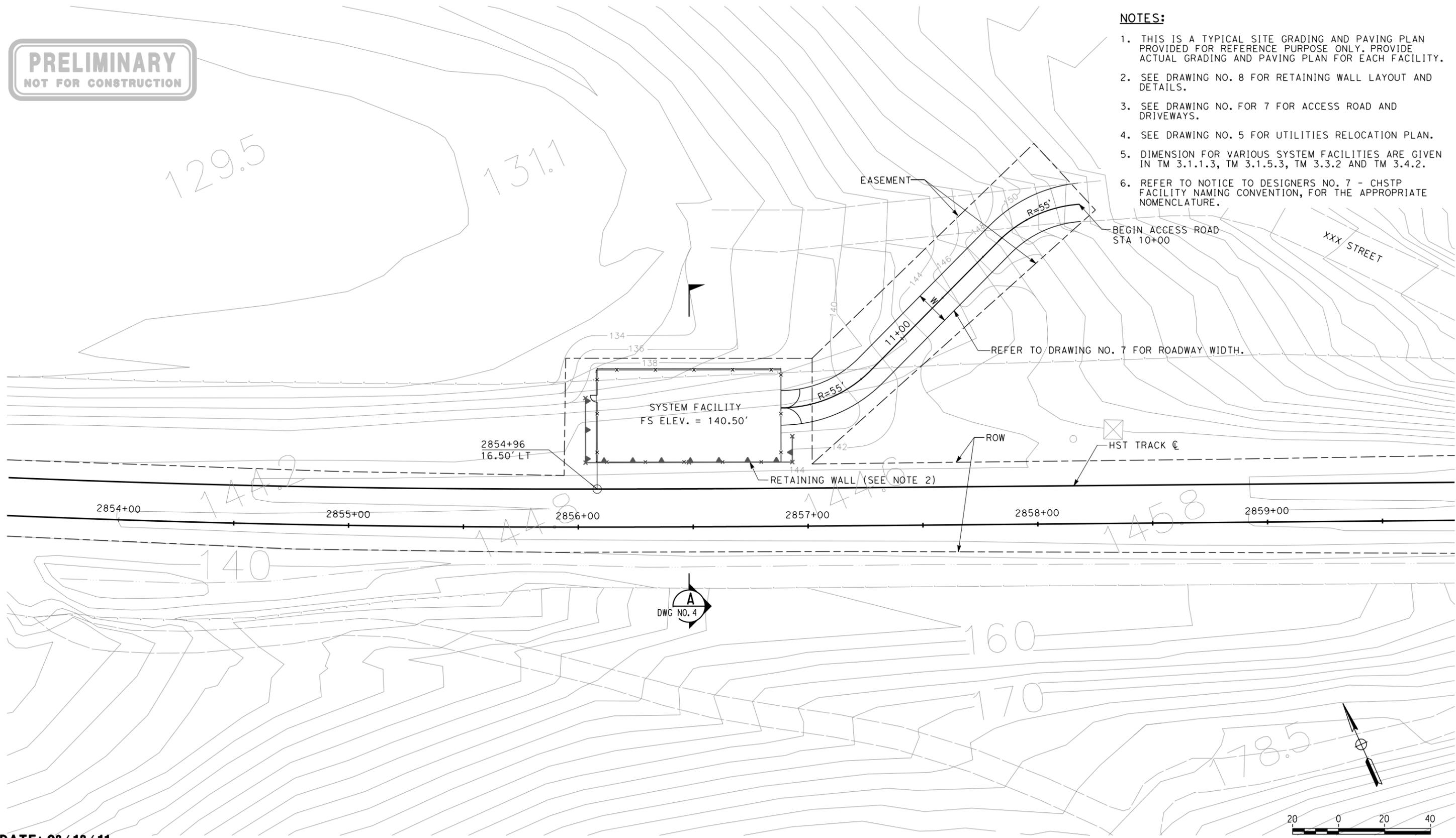


- NOTES:**
1. THIS IS A TYPICAL SITE PLAN OF A SYSTEM FACILITY LOCATION AWAY FROM THE ROW AND IS PROVIDED FOR REFERENCE PURPOSE ONLY. PROVIDE ACTUAL SITE DETAILS AND LAYOUT FOR EACH FACILITY INCLUDING ACCESS ROAD AND PARKING FACILITIES.
  2. SITE ACCESS WILL BE MADE VIA XXX STREET.
  3. TOPOGRAPHIC AND RIGHT-OF-WAY MAPPING IS REQUIRED AT THIS SITE.
  4. SITE IS LOCATED ON XXX PROPERTY. REAL ESTATE NEGOTIATIONS ARE REQUIRED TO OBTAIN PROPERTY INTERESTS NECESSARY FOR SITE AND ACCESS.
  5. SEE DRAWING NO. 5 FOR UTILITIES RELOCATION PLAN.
  6. COMMUNICATION AND AT TRAIN CONTROL FACILITIES WILL REQUIRE UNDERGROUND DUCTBANKS TO PROVIDE CONNECTIVITY TO SYSTEM WIDE CABLE TROUGHS. TRACTION POWER FACILITIES WILL REQUIRE OVERHEAD CROSSING THROUGH GANTRY. DESIGNER SHALL PROVIDE DETAIL FOR RESPECTIVE SITUATION.
  7. REFER TO NOTICE TO DESIGNERS NO. 7 - CHSTP FACILITY NAMING CONVENTION, FOR THE APPROPRIATE NOMENCLATURE.

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- NOTES:**
1. THIS IS A TYPICAL SITE GRADING AND PAVING PLAN PROVIDED FOR REFERENCE PURPOSE ONLY. PROVIDE ACTUAL GRADING AND PAVING PLAN FOR EACH FACILITY.
  2. SEE DRAWING NO. 8 FOR RETAINING WALL LAYOUT AND DETAILS.
  3. SEE DRAWING NO. 7 FOR ACCESS ROAD AND DRIVEWAYS.
  4. SEE DRAWING NO. 5 FOR UTILITIES RELOCATION PLAN.
  5. DIMENSION FOR VARIOUS SYSTEM FACILITIES ARE GIVEN IN TM 3.1.1.3, TM 3.1.5.3, TM 3.3.2 AND TM 3.4.2.
  6. REFER TO NOTICE TO DESIGNERS NO. 7 - CHSTP FACILITY NAMING CONVENTION, FOR THE APPROPRIATE NOMENCLATURE.



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PLAN

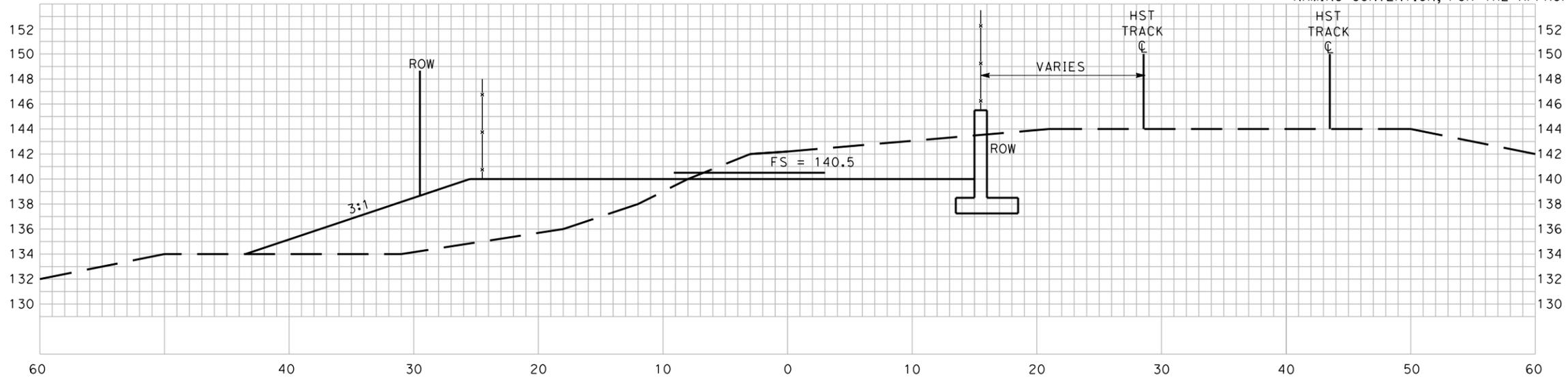


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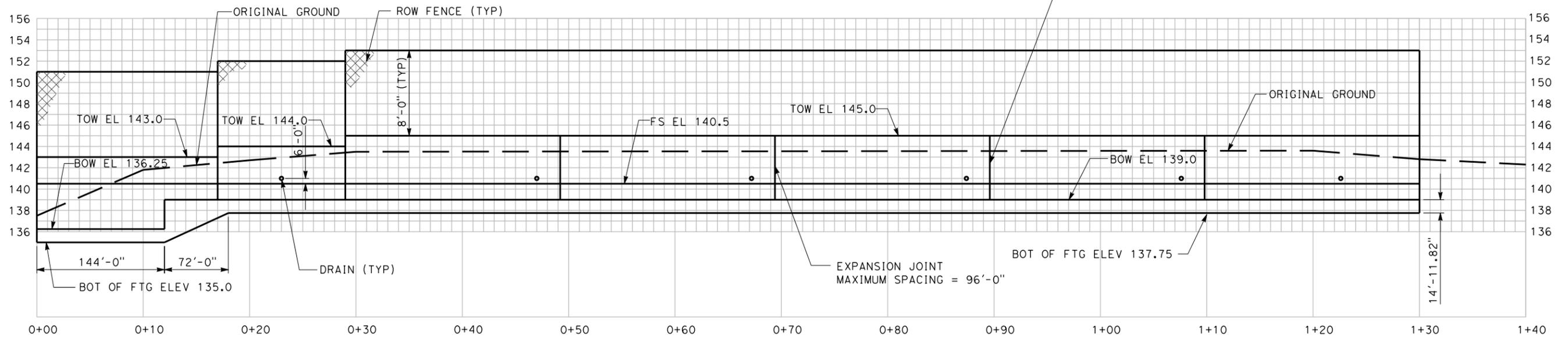
**NOTES:**

1. THIS DRAWING SHOWS A TYPICAL CROSS SECTION AND RETAINING WALL ELEVATION AT A SYSTEM FACILITY. PROVIDE ACTUAL DETAILS AS APPLICABLE.
2. SEE DRAWING NO. 3 FOR EXISTING AND PROPOSED GRADING.
3. SEE DRAWING NO. 5 FOR RELOCATION OF UTILITIES.
4. SEE DRAWING NO 8 FOR RETAINING WALL DESIGN.
5. REFER TO NOTICE TO DESIGNERS NO. 7 - CHSTP FACILITY NAMING CONVENTION, FOR THE APPROPRIATE NOMENCLATURE.



**SYSTEM FACILITY**

**SECTION A**  
DWG. NO 3



**RETAINING WALL ELEVATION**

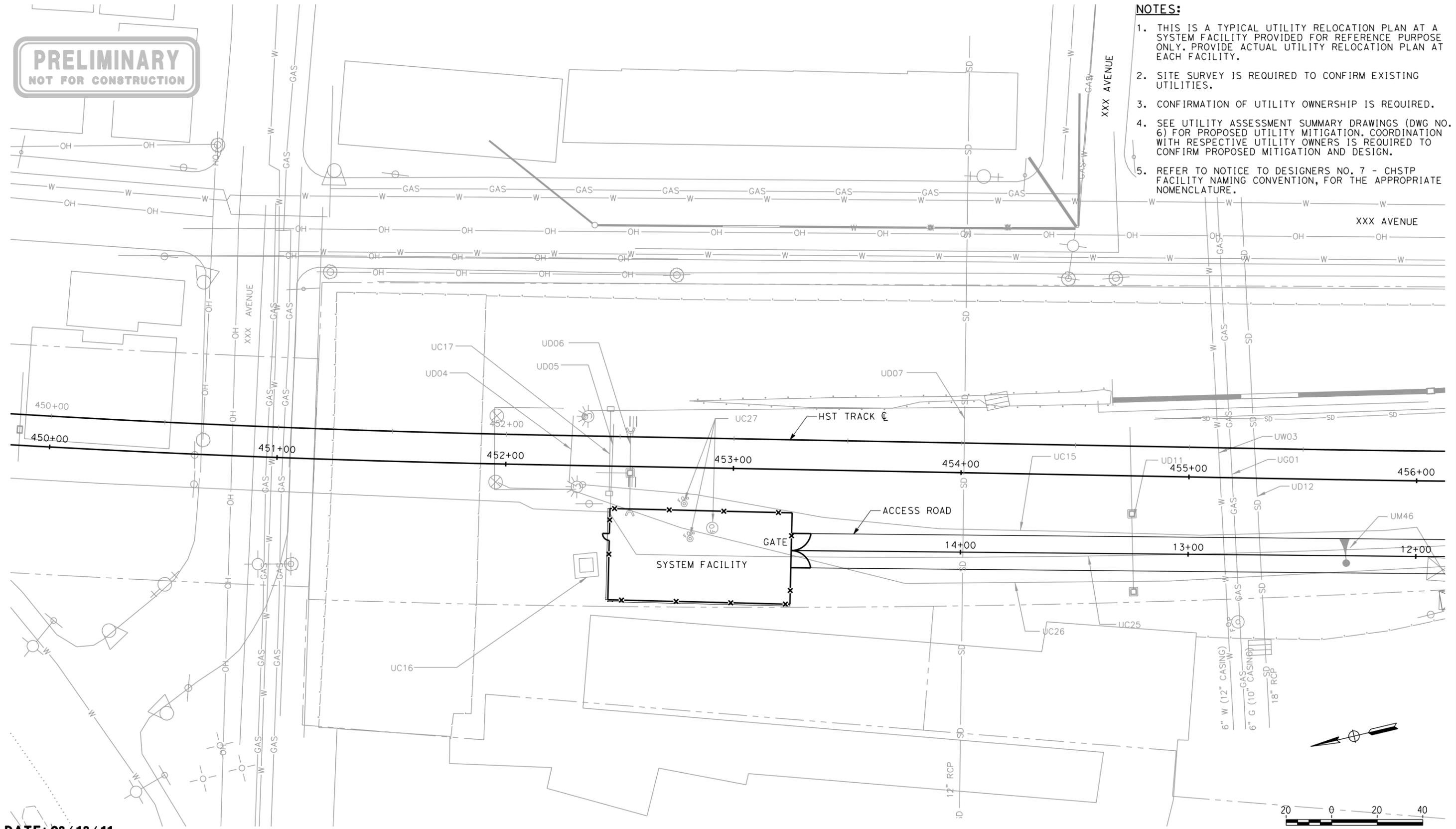
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- NOTES:**
1. THIS IS A TYPICAL UTILITY RELOCATION PLAN AT A SYSTEM FACILITY PROVIDED FOR REFERENCE PURPOSE ONLY. PROVIDE ACTUAL UTILITY RELOCATION PLAN AT EACH FACILITY.
  2. SITE SURVEY IS REQUIRED TO CONFIRM EXISTING UTILITIES.
  3. CONFIRMATION OF UTILITY OWNERSHIP IS REQUIRED.
  4. SEE UTILITY ASSESSMENT SUMMARY DRAWINGS (DWG NO. 6) FOR PROPOSED UTILITY MITIGATION. COORDINATION WITH RESPECTIVE UTILITY OWNERS IS REQUIRED TO CONFIRM PROPOSED MITIGATION AND DESIGN.
  5. REFER TO NOTICE TO DESIGNERS NO. 7 - CHSTP FACILITY NAMING CONVENTION, FOR THE APPROPRIATE NOMENCLATURE.



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PLAN

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**NTD 04-SYSTEM FACILITY GUIDANCE**  
 UTILITY RELOCATION PLAN  
 SYSTEM FACILITY  
 NTD 04-005

**PRELIMINARY**  
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**NOTE:**

1. THIS IS A TYPICAL UTILITY ASSESSMENT SUMMARY. PROVIDE UTILITY ASSESSMENT SUMMARY FOR EACH FACILITY
2. REFER TO NOTICE TO DESIGNERS NO. 7 - CHSTP FACILITY NAMING CONVENTION, FOR THE APPROPRIATE NOMENCLATURE.

UTILITY ASSESSMENT SUMMARY									
UTILITY ID	DRAWING NO.	LOCATION	APPROXIMATE LOCATION	EXISTING UTILITY					PROPOSED MITIGATION
				SIZE	TYPE	MATERIAL/ DESCRIPTION	LENGTH(ft)	POTENTIAL IMPACTS	
WATER MAINS									
UW01	-	-	-		WATER LINE	W		HIGH	PROTECT IN VICINITY OF ACCESS DRIVE
UW02	-	-	-		WATER LINE	W	-	LOW	NONE
UW03	-	-	-	6" W (12" CASING)	WATER LINE	W	-	MOD	PROTECT
UW04	-	-	-		WATER LINE	W	-	LOW	NONE
UW05	-	-	-		WATER LINE	W	-	LOW	NONE
DRAINAGE									
UD03	-	-	-		DRAIN UNDER	UD	-	LOW	NONE
UD04	-	-	-		DRAIN UNDER	UD		LOW	NONE
UD05	-	-	-		STORM DRAIN	SD	-	HIGH	MAINTAIN DURING CONSTRUCTION
UD06	-	-	-		STORM DRAIN	SD	-	HIGH	PROTECT
UD07	-	-	-	12" CP	STORM DRAIN	SD	-	MOD	PROTECT IN VICINITY OF ACCESS DRIVE
UD08	-	-	-		STORM DRAIN	SD	-	LOW	NONE
UD09	-	-	-		STORM DRAIN	SD	-	LOW	NONE
UD10	-	-	-		STORM DRAIN	SD	-	LOW	NONE
UD11	-	-	-		STORM DRAIN	SD	-	MOD	PROTECT
UD12	-	-	-	18" RCP	STORM DRAIN	SD	-	MOD	PROTECT
	-	-	-						
SEWER									
US11	-	-	-		SANITARY SEWER	SS	-	LOW	NONE
US12	-	-	-		SANITARY SEWER	SS	-	LOW	NONE
	-	-	-						
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