

*PLANS FOR THE CONSTRUCTION OF*  
***PAVING, DRAINAGE & UTILITY IMPROVEMENTS***  
*VITRUVIAN WAY & PONTE AVENUE*  
 FOR  
***VITRUVIAN PARK PUBLIC INFRASTRUCTURE-PHASE 1B***  
***TOWN OF ADDISON, TEXAS***

*PUBLIC WORKS # 2009-01*

*Addison!*

**JOE CHOW**  
MAYOR

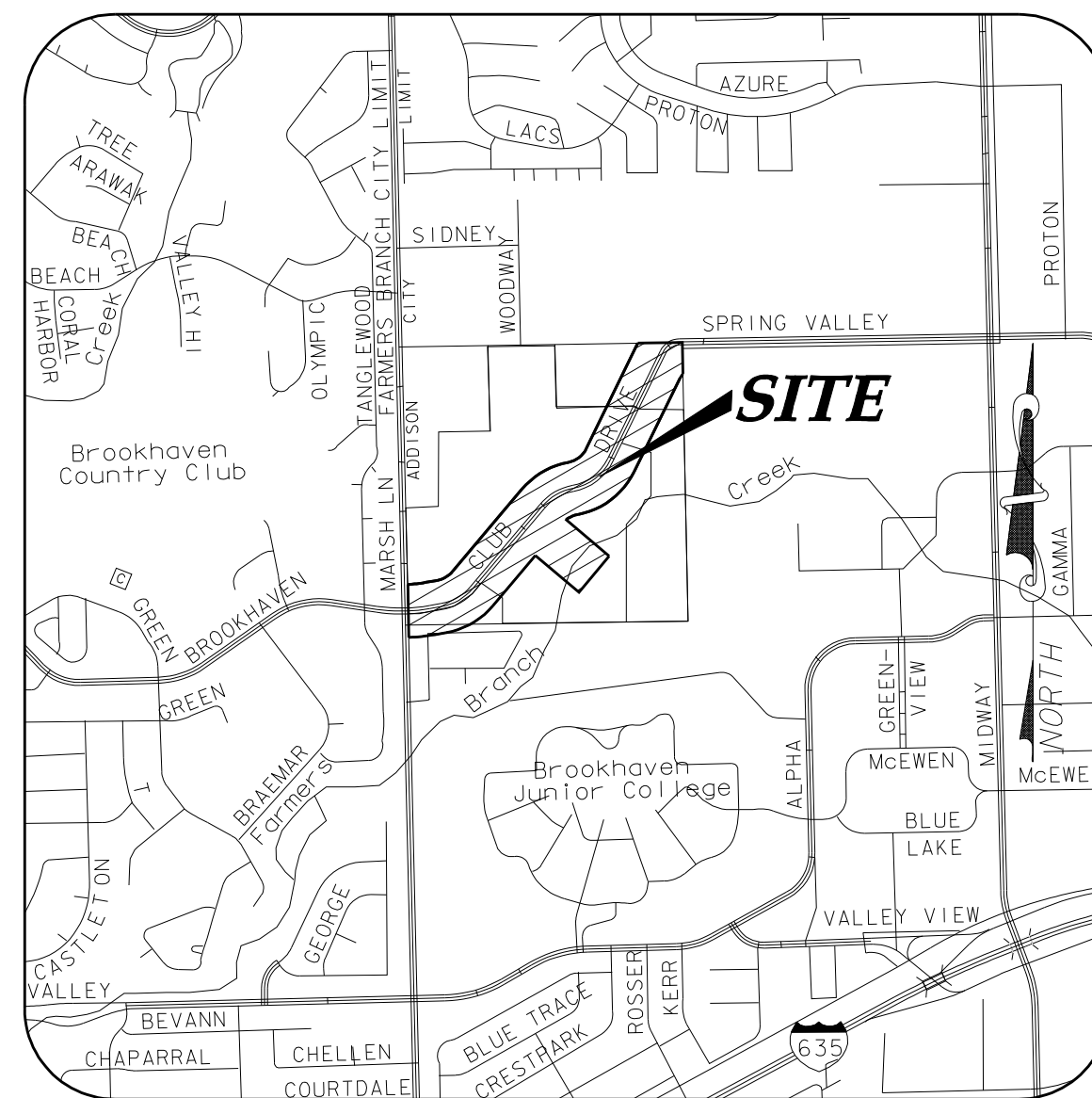
**ROGER MELLOW**  
MAYOR PRO TEMPORE

**TOM BRAUN**  
**BLAKE CLEMENS**  
**DON DASEKE**  
**KIMBERLY LAY**  
**BIANCA NOBLE**  
COUNCIL MEMBERS

**RON WHITEHEAD**  
CITY MANAGER

**NANCY CLINE, P.E.**  
DIRECTOR OF PUBLIC WORKS

**CLAY BARNETT, P.E.**  
TOWN ENGINEER



**VICINITY MAP**

NOT TO SCALE  
(MAPSCO GRID 13 & 14)

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**icon** Consulting Engineers, Inc.  
Civil Engineers- Designers- Planners  
ENGINEERING FIRM REGISTRATION NUMBER F-9007

APRIL 28, 2009



ICON PROJECT #5029-01

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NO.	REVISION	BY	DATE

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DALLAS COUNTY, TEXAS

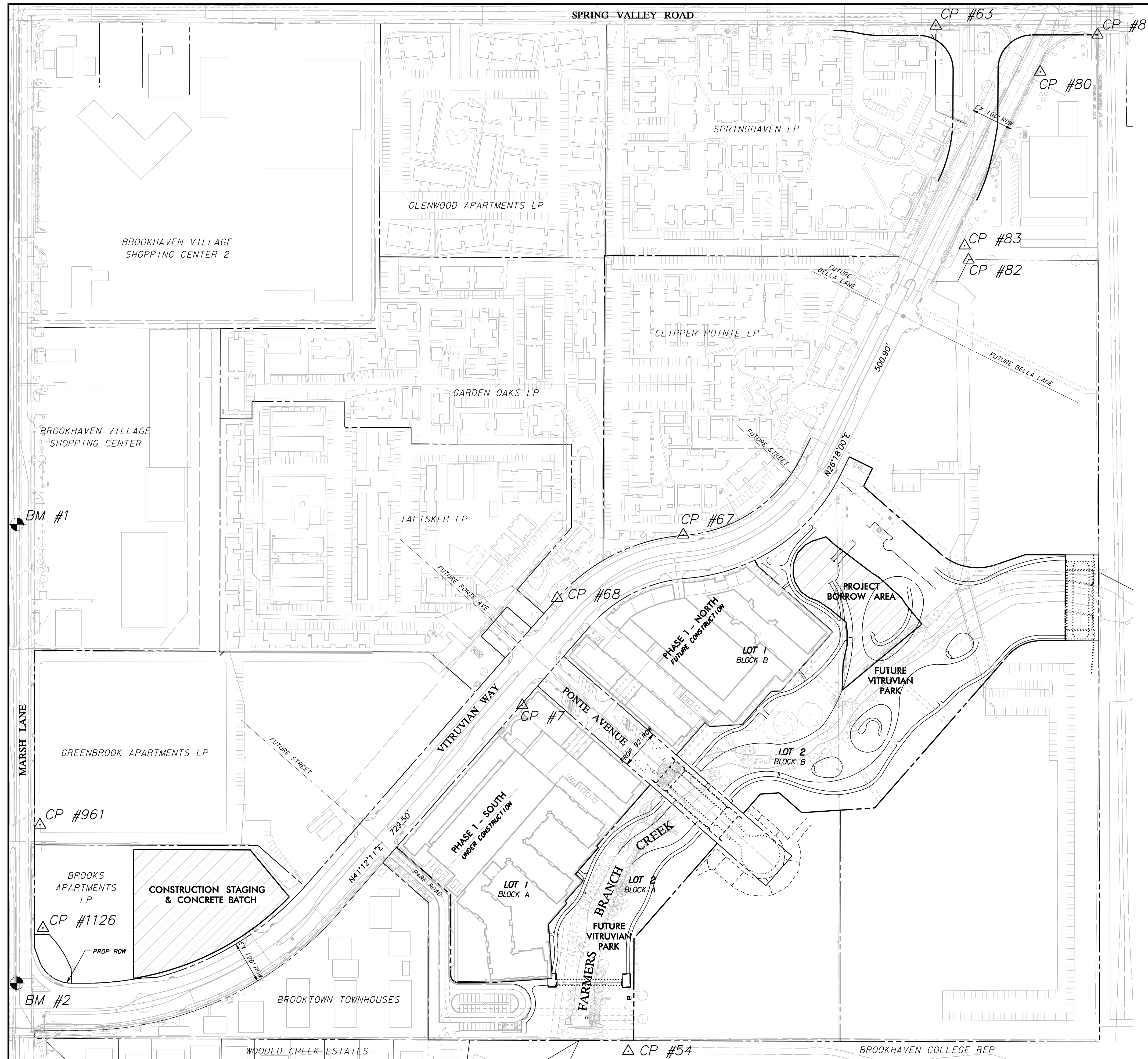
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY & PONTE AVENUE

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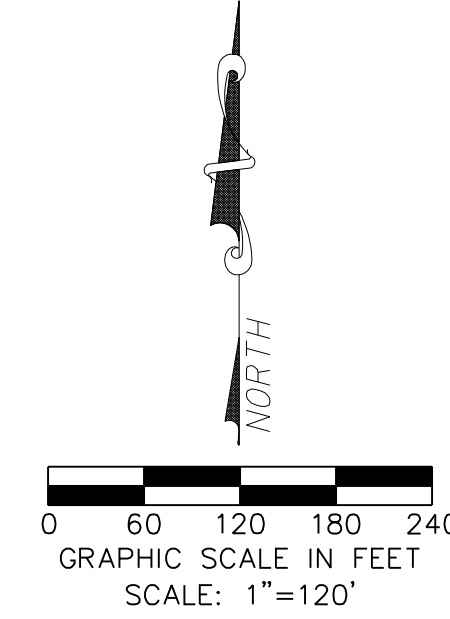
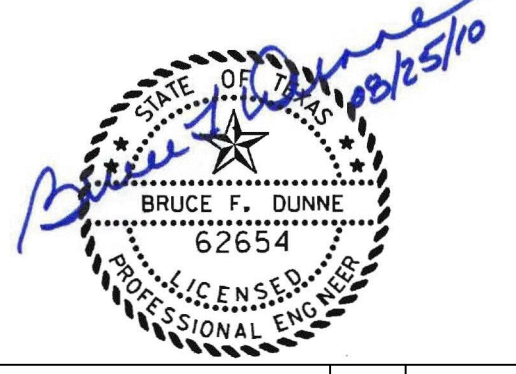
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



<b>CP #7</b> CP/R 5/8"YC2509 N 8354.44 E 11036.81 ELEV 564.75	<b>CP #67</b> IRF 1/2" N 8751.47 E 11411.24 ELEV 570.89	<b>CP #81</b> IRF 1/2" HZ N 9915.07 E 12375.13 ELEV 584.42	<b>CP #961</b> TP/60 SET N 8076.39 E 9914.62 ELEV
<b>CP #54</b> CP/R 5/8"YC # 2509J N 7549.40 E 11283.24 ELEV 549.86	<b>CP #68</b> IRF 1/2" BENT N 8604.13 E 11117.93 ELEV 569.99	<b>CP #82</b> IRF 1/2" N 9391.52 E 12074.82 ELEV 573.99	<b>CP #1126</b> TP/PK SET N 7836.48 E 9921.31 ELEV 547.9
<b>CP #63</b> IRF 3/8" N 9935.76 E 11998.95 ELEV 583.02	<b>CP #80</b> IRF 1/2" N 9828.79 E 12241.73 ELEV 582.65	<b>CP #83</b> OPK J N 8424.30 E 12065.87 ELEV 573.53	

**BM #1 REF. ELEVATION = 559.47**  
 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE  
 1127' NORTH OF VITRUVIAN WAY.

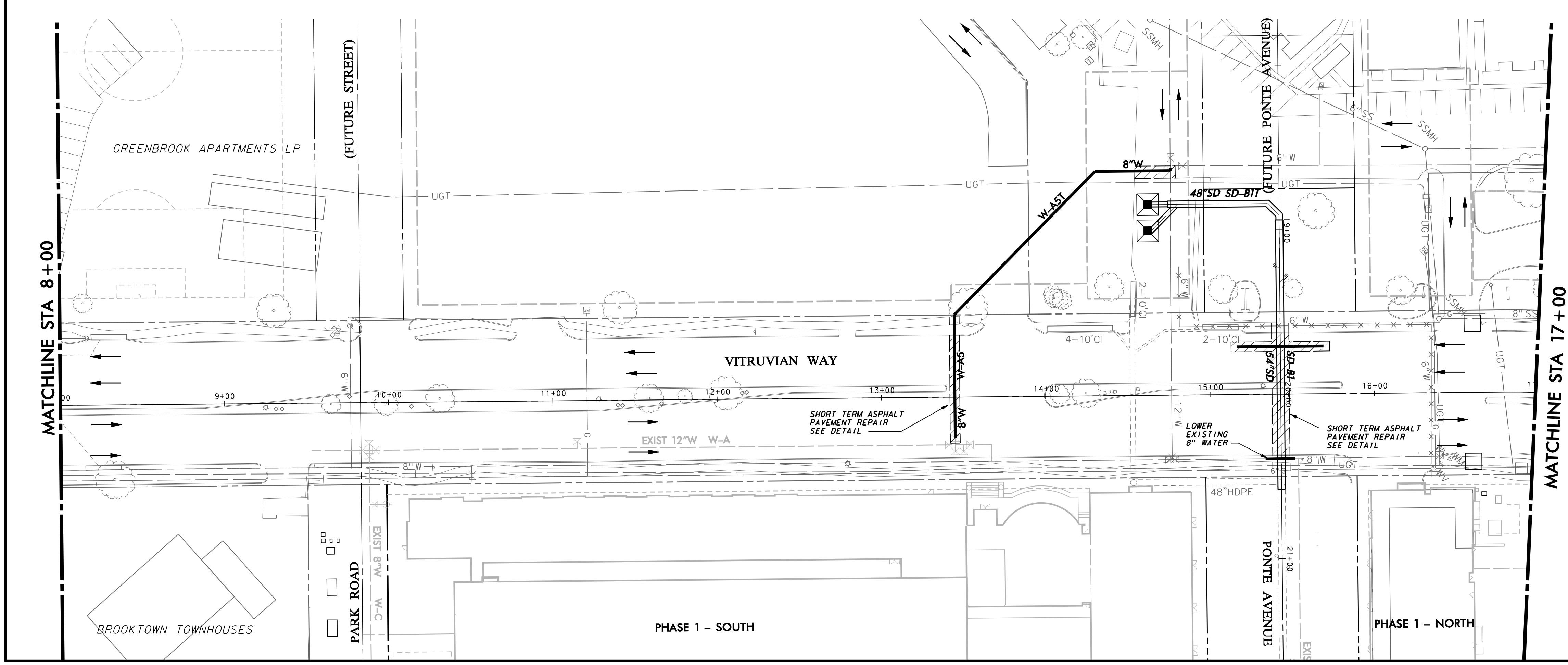
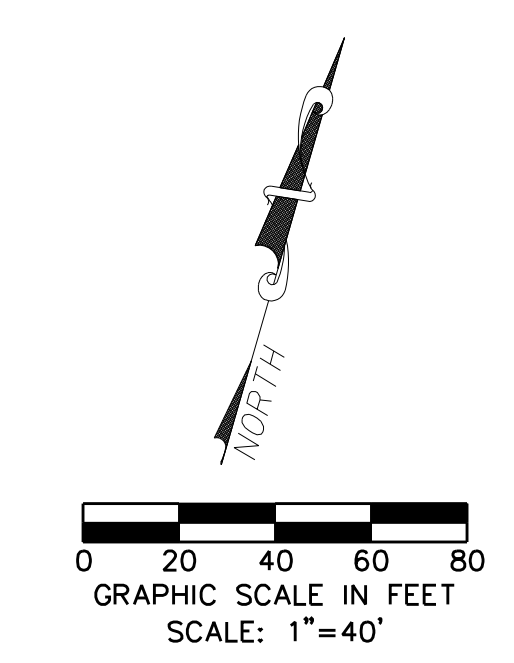
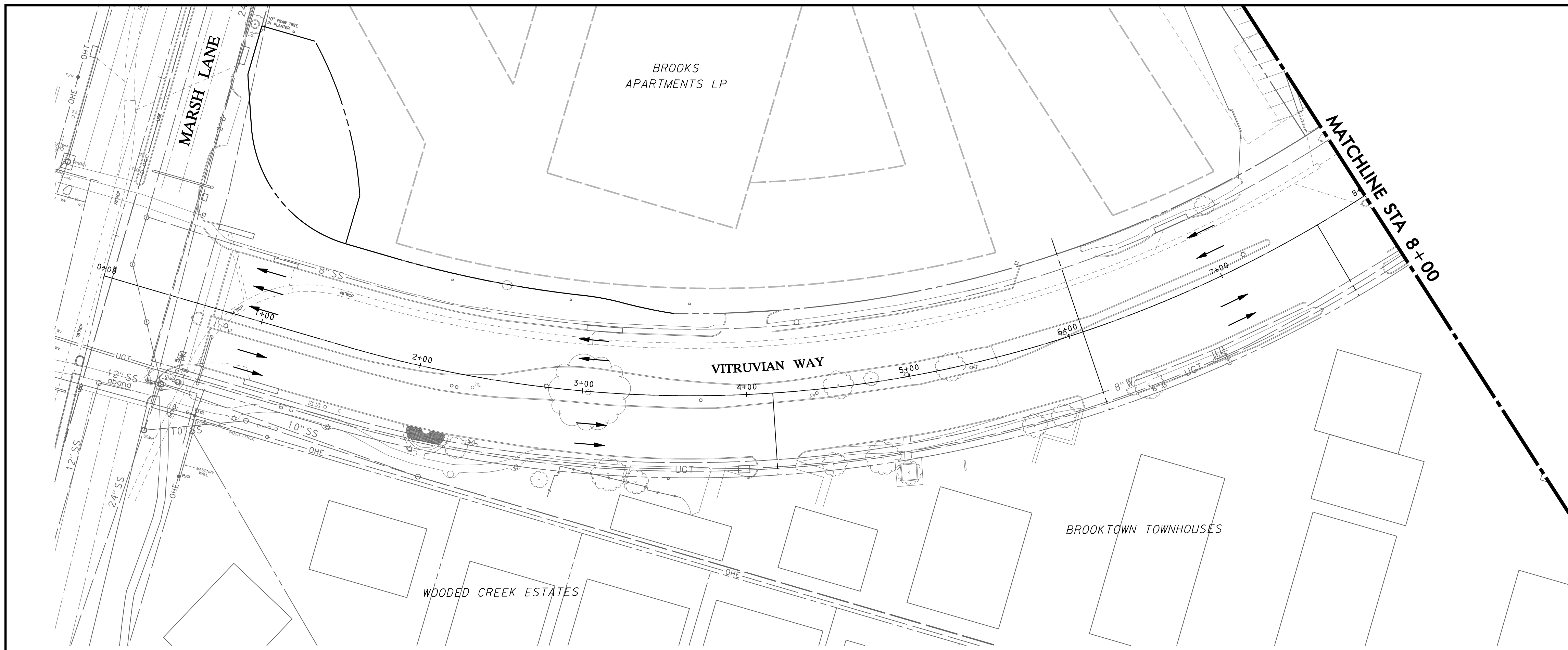
**BM #2 REF. ELEVATION = 547.84**  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION  
 OF VITRUVIAN WAY AND MARSH LANE.



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<b>Addison!</b> TOWN OF ADDISON DALLAS COUNTY, TEXAS			
PAVING, DRAINAGE & UTILITY IMPROVEMENTS VITRUVIAN WAY & PONTE AVENUE			
<b>OVERALL PLAN &amp;          PROJECT CONTROL</b>			
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PROJECT	DESIGN	DRAWN	DATE
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PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE





**WARNING**

CONTRACTOR IS TO CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY LOCATING SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. ICON CONSULTING ENGINEERS, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOR FOR DEPICTING THE EXACT LOCATIONS OF UTILITIES ON THESE DRAWINGS.

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 DALLAS COUNTY, TEXAS

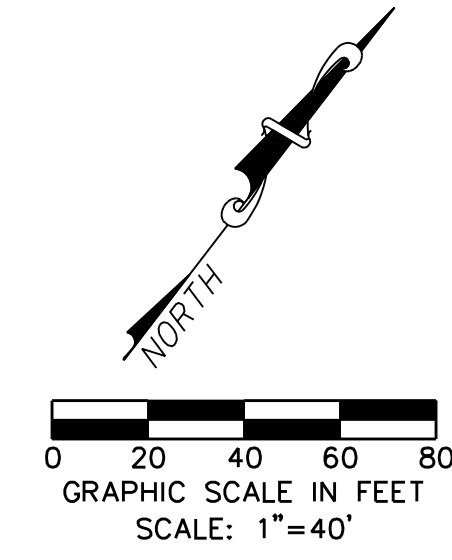
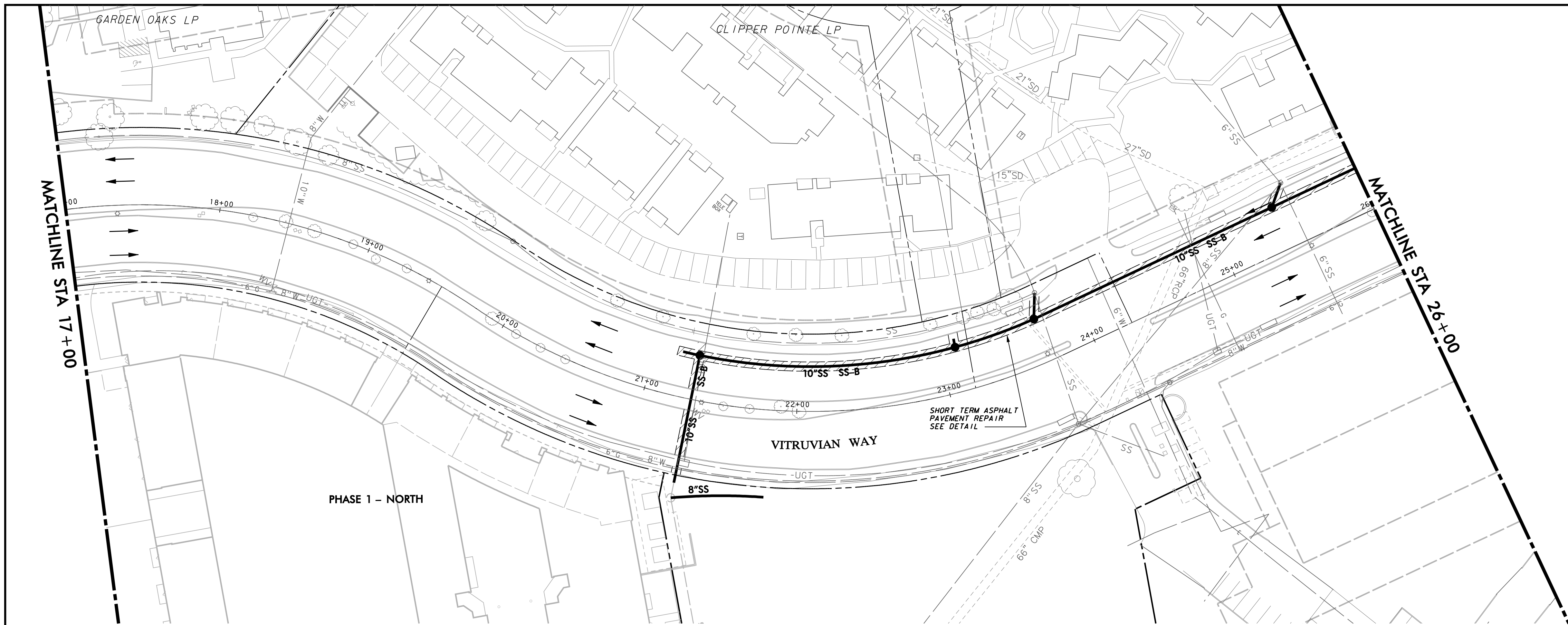
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**CONSTRUCTION PHASING PLAN-VW**  
 PHASE 1- STA 0+00.00 TO 17+00.00

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PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

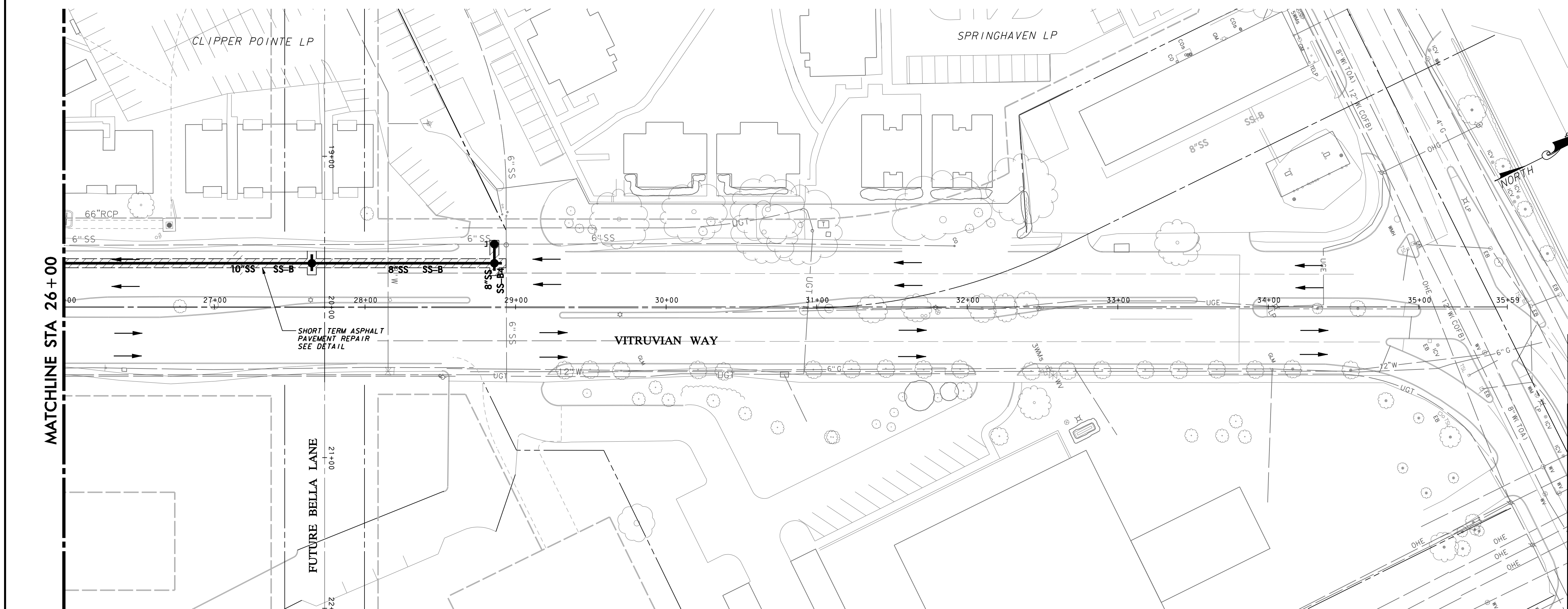
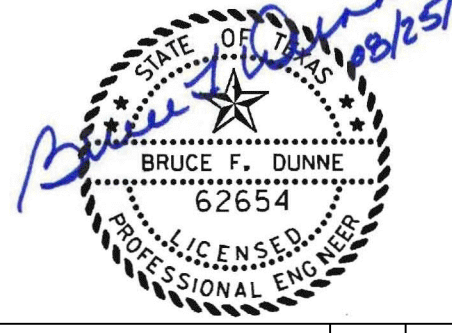
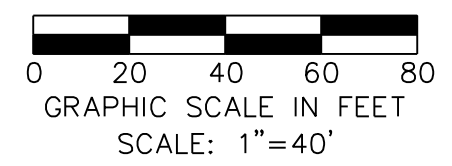


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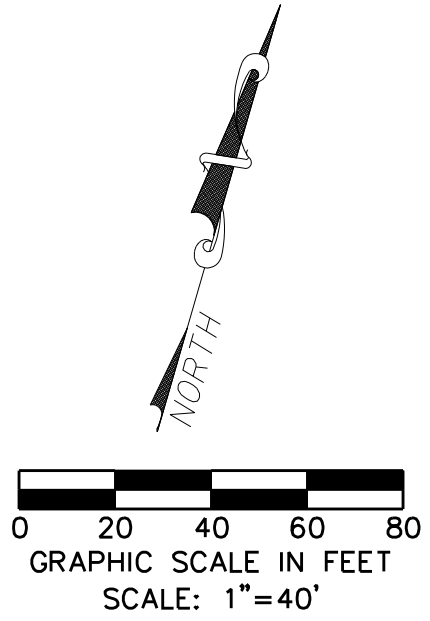
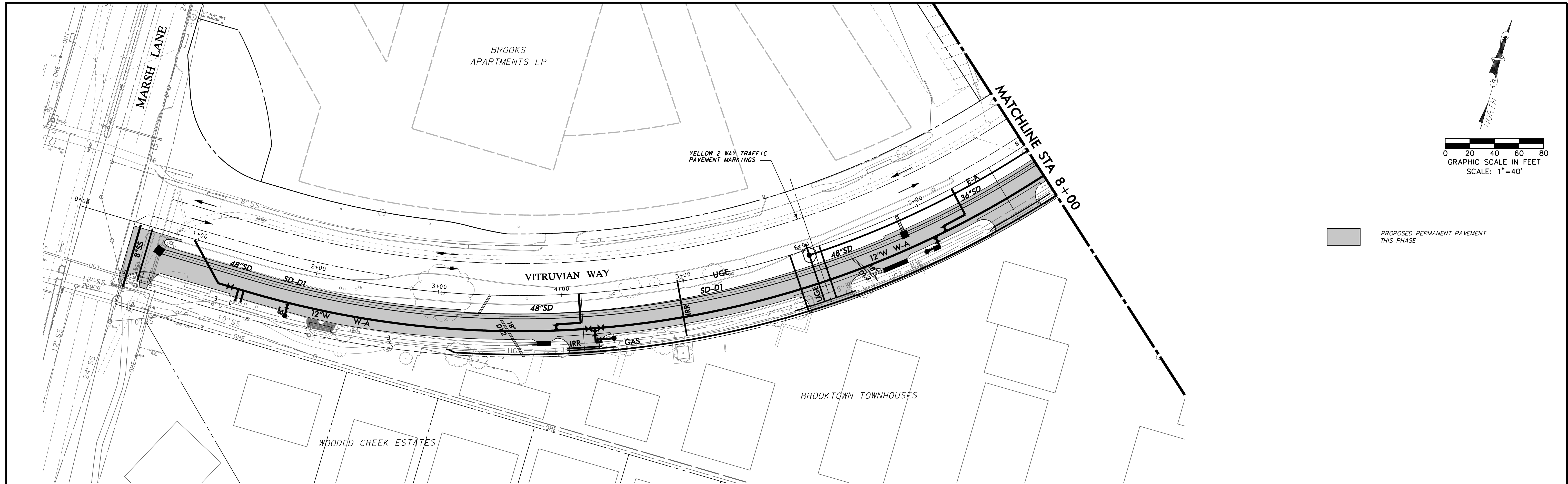
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**CONSTRUCTION PHASING PLAN-VW**  
**PHASE 1-STA 17+00.00 TO 30+00.00**

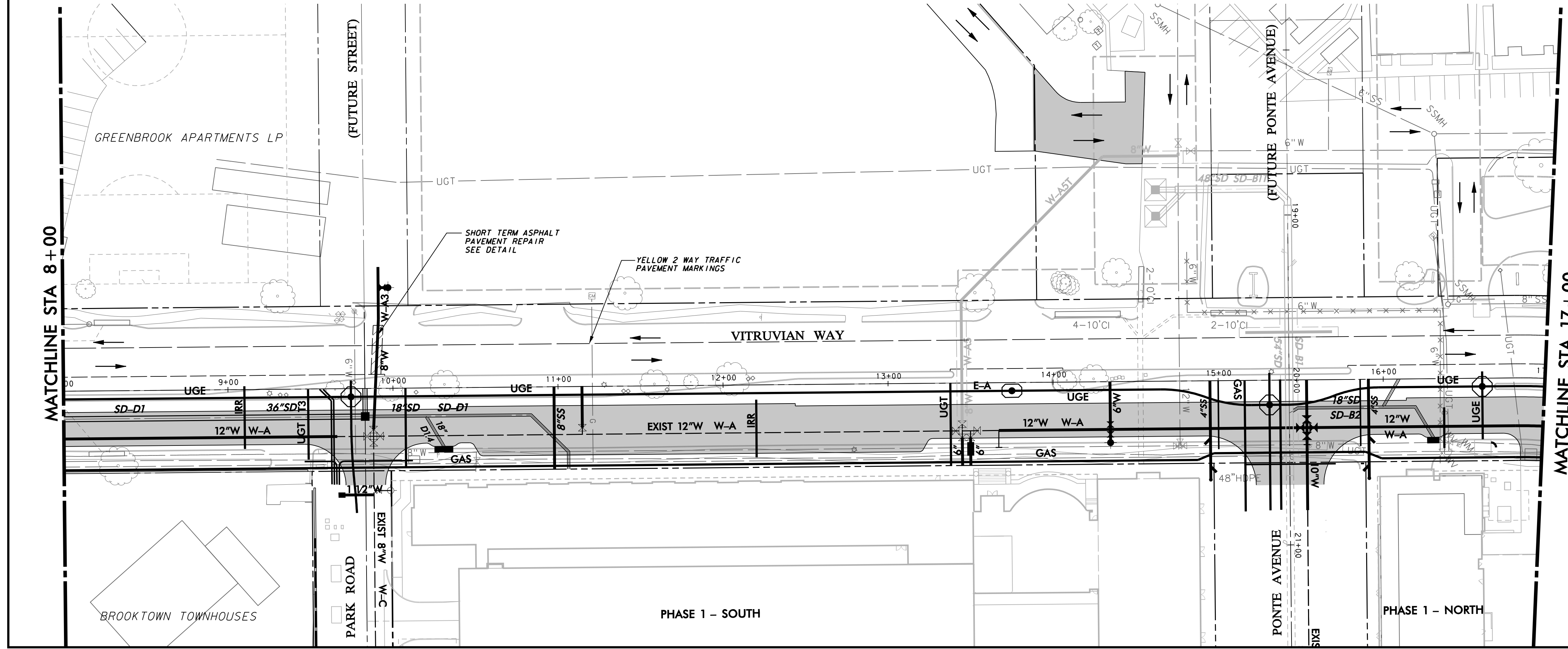
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PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

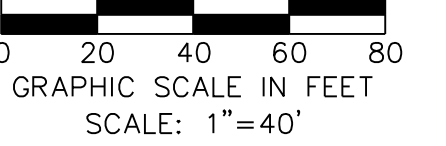


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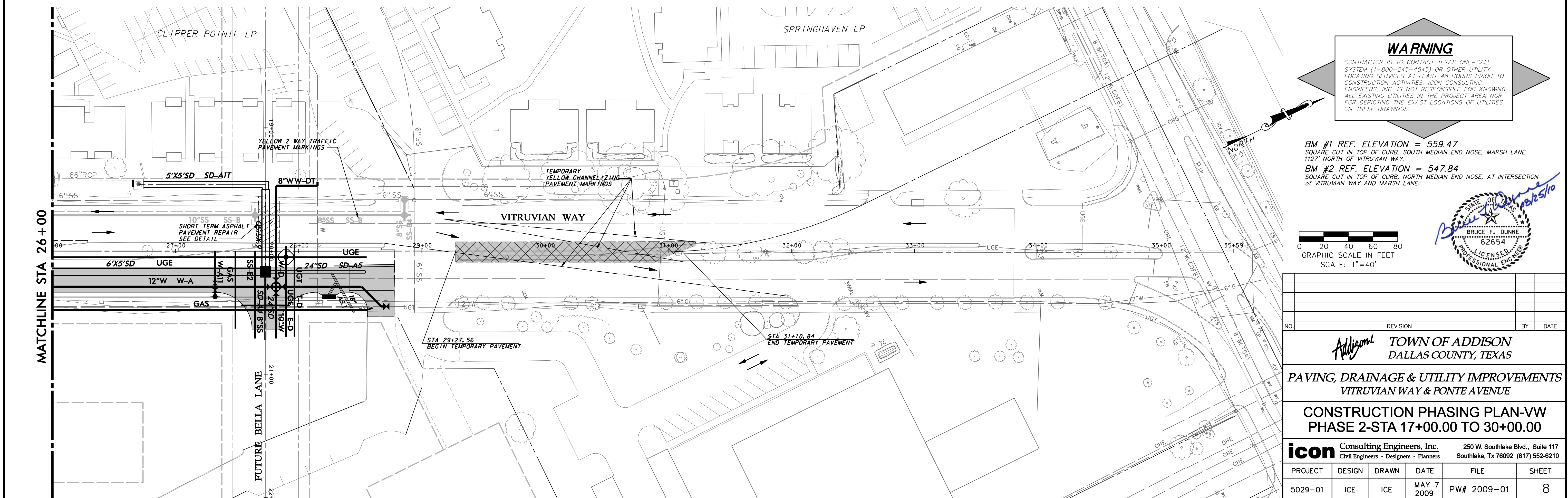
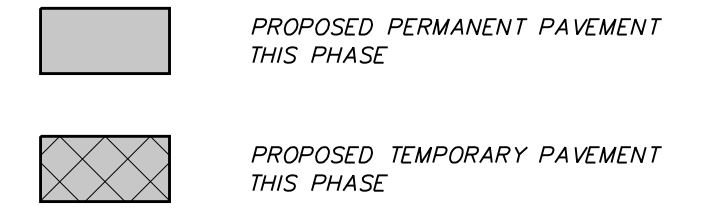
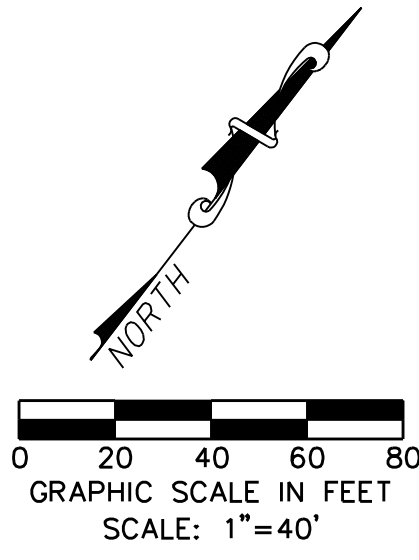
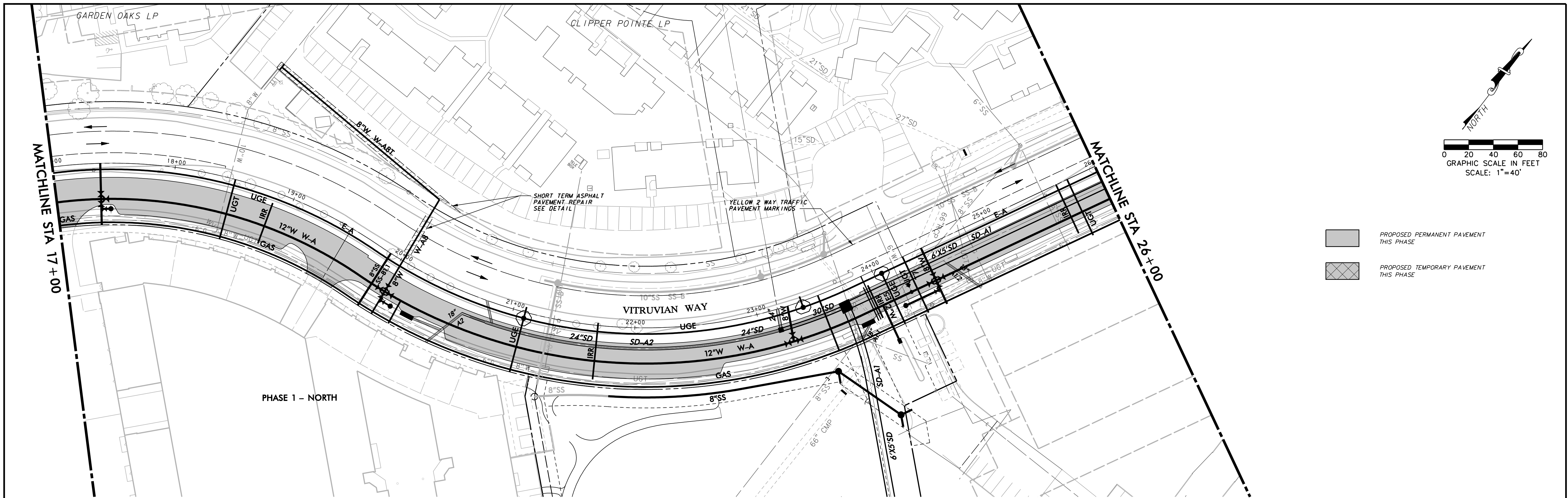
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

CONSTRUCTION PHASING PLAN-VW  
PHASE 2- STA 0+00.00 TO 17+00.00

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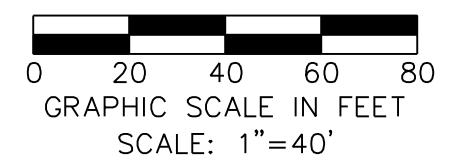
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5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	7

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
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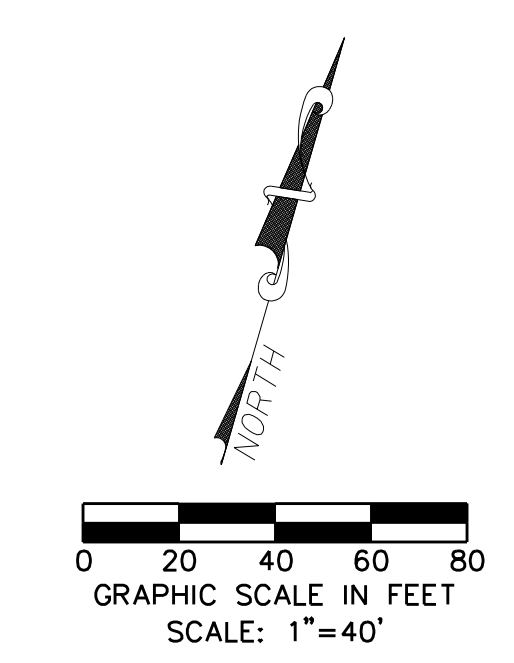
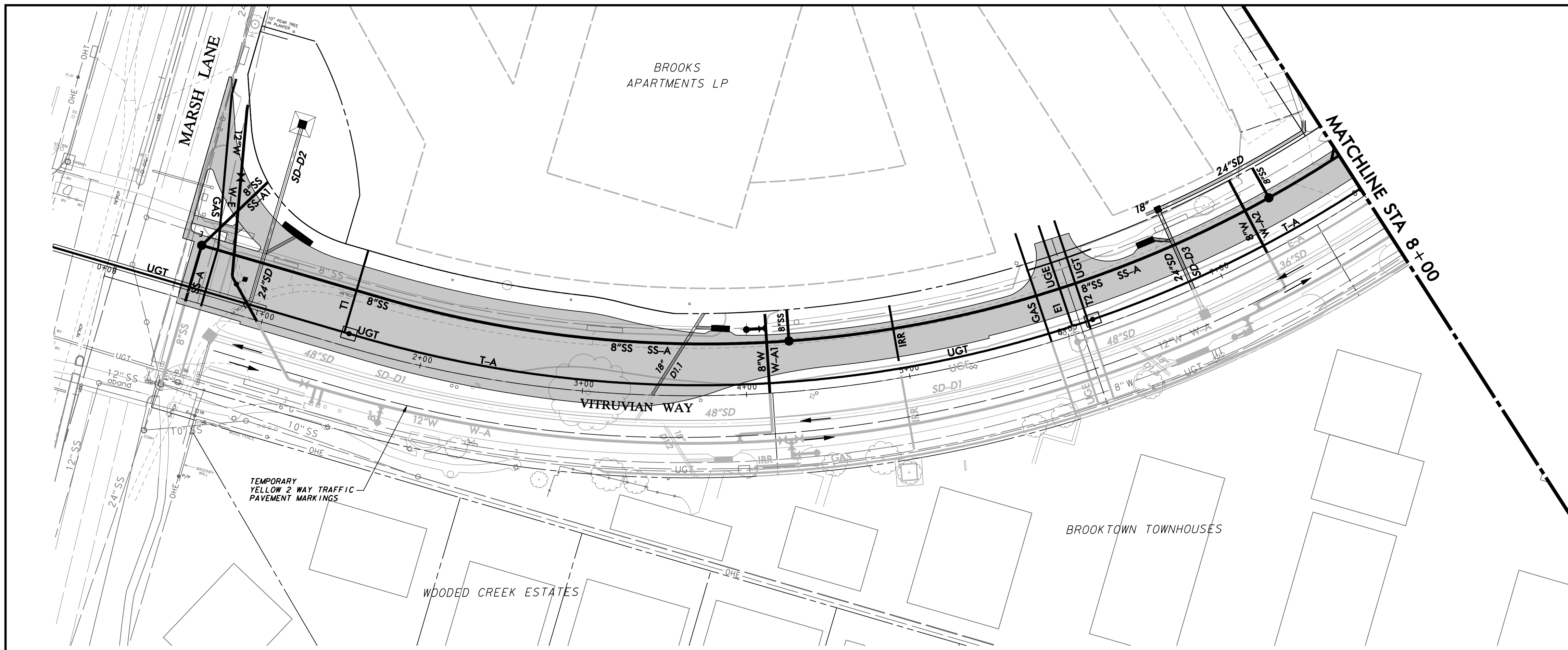
CONSTRUCTION PHASING PLAN-VW  
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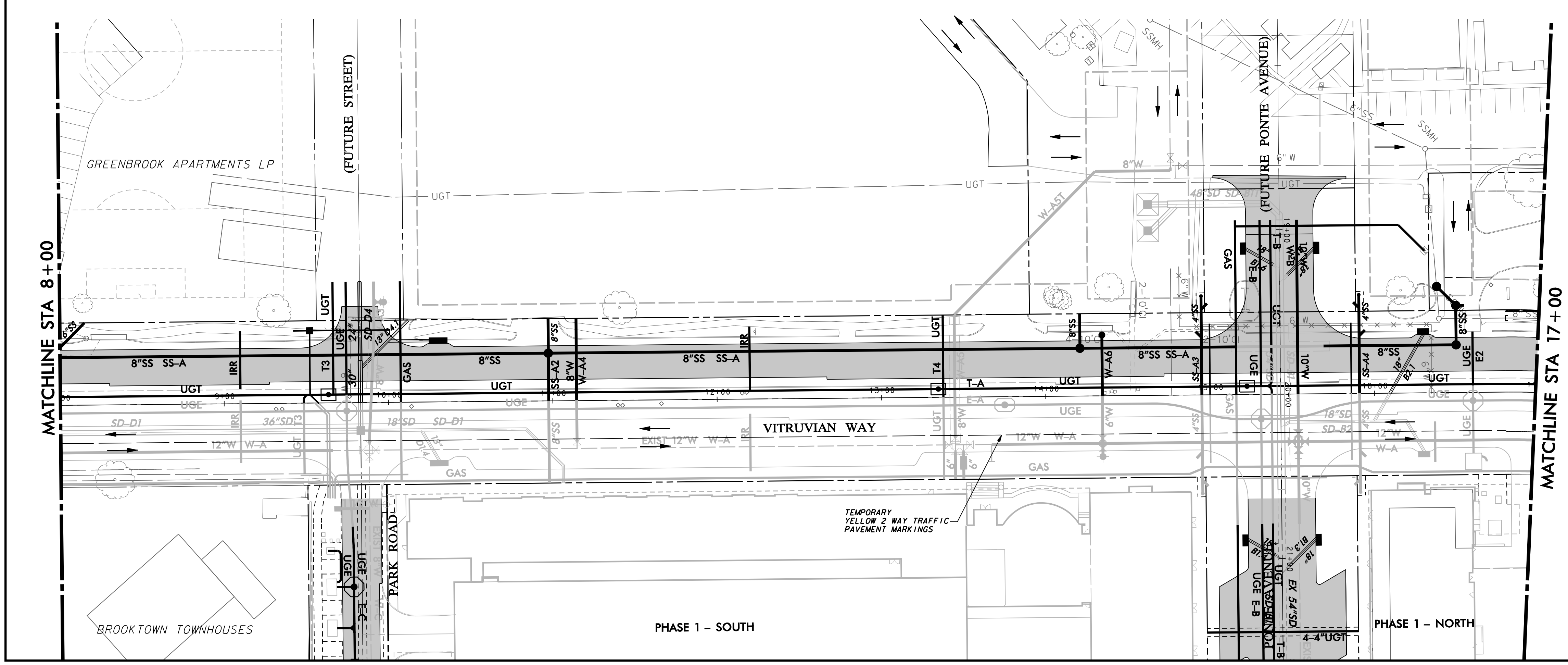
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	8

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



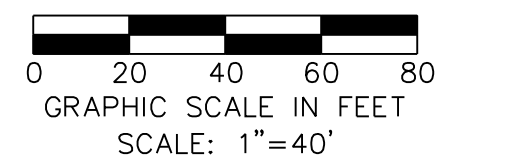


PROPOSED PERMANENT PAVEMENT  
THIS PHASE



**WARNING**  
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BM #1 REF. ELEVATION = 559.47  
SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.  
BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



BRUCE F. DUNNE  
62654  
LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

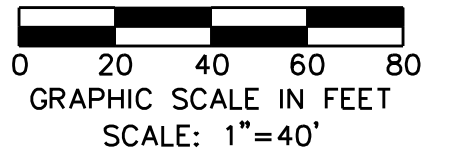
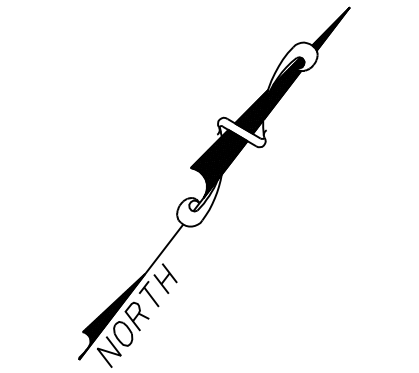
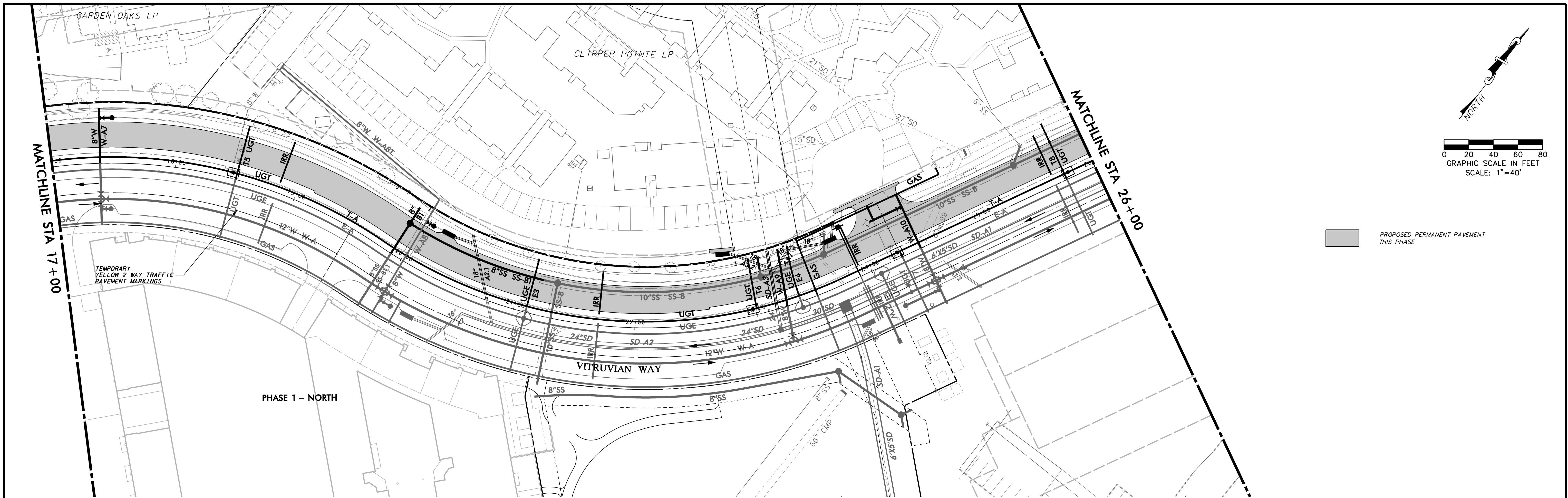
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

CONSTRUCTION PHASING PLAN-VW  
PHASE 3- STA 0+00.00 TO 17+00.00

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Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

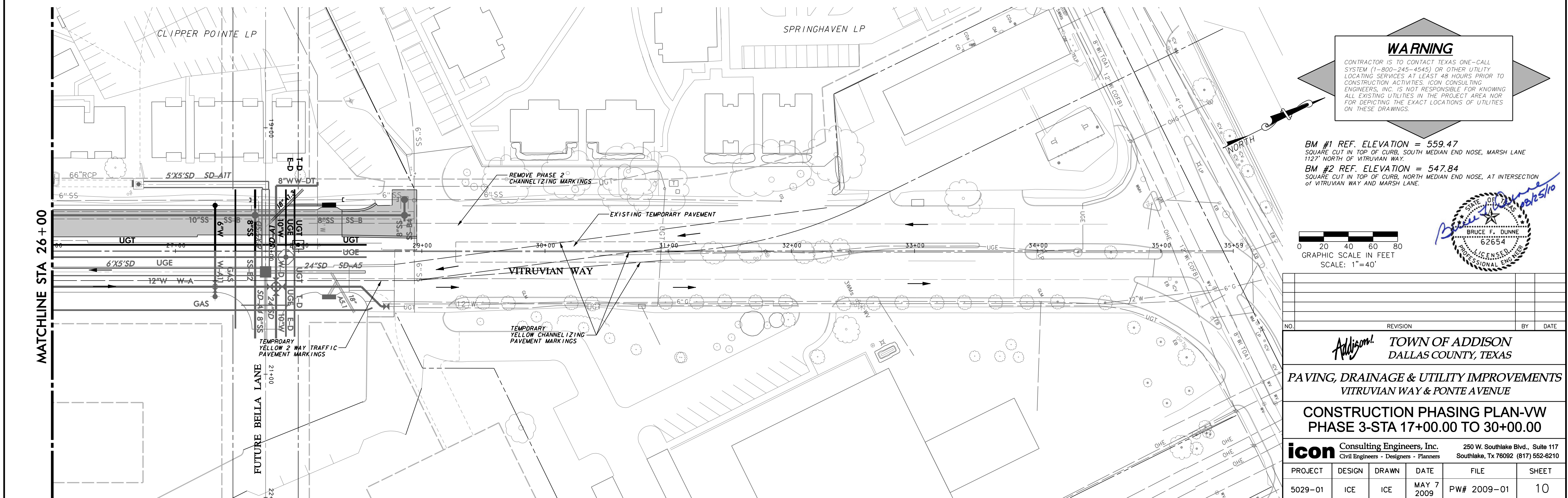
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5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	9

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



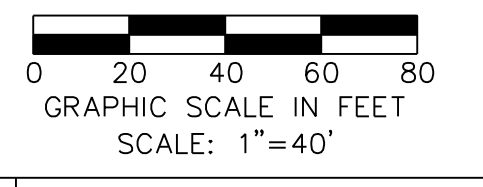
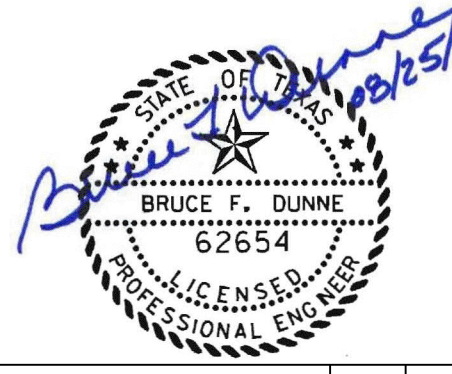
PROPOSED PERMANENT PAVEMENT  
THIS PHASE

PHASE 1 - NORTH



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OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

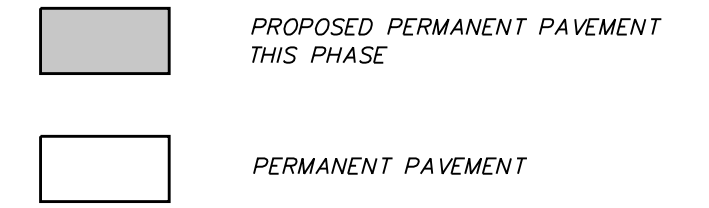
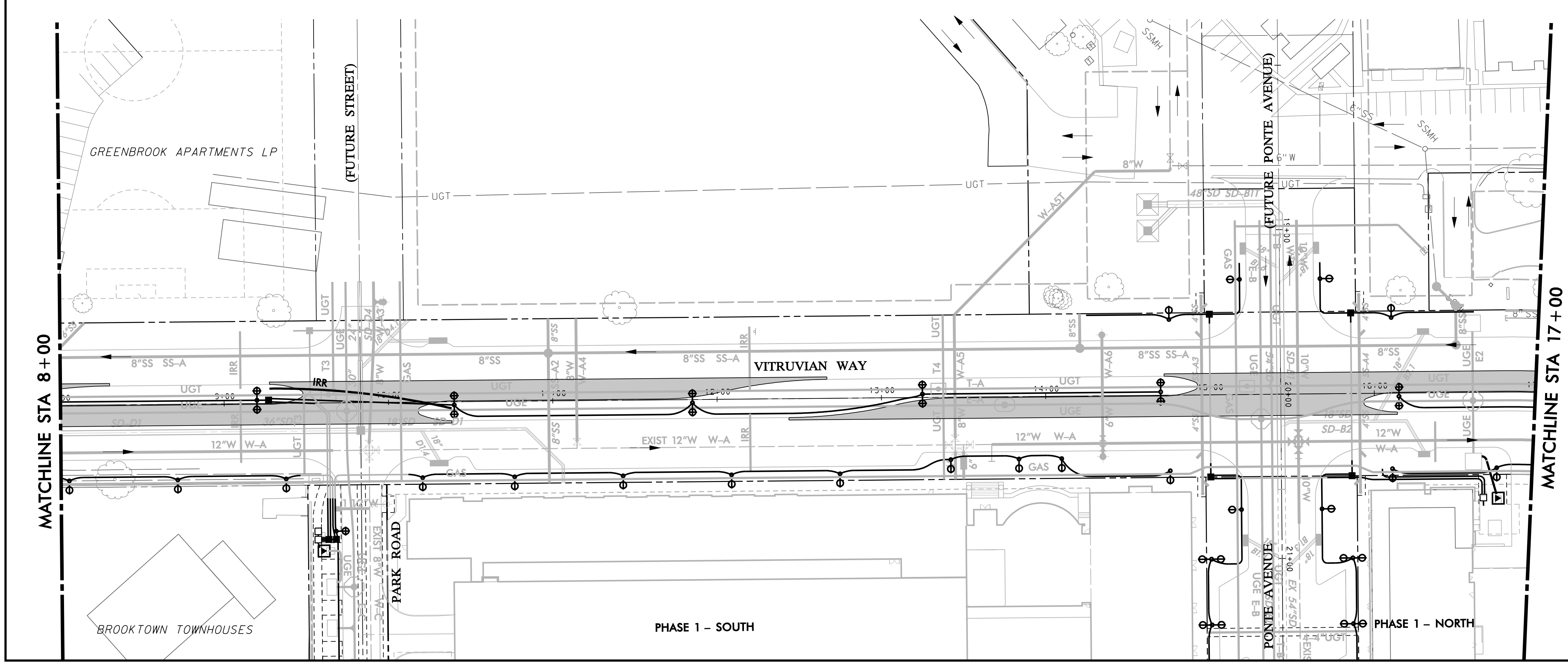
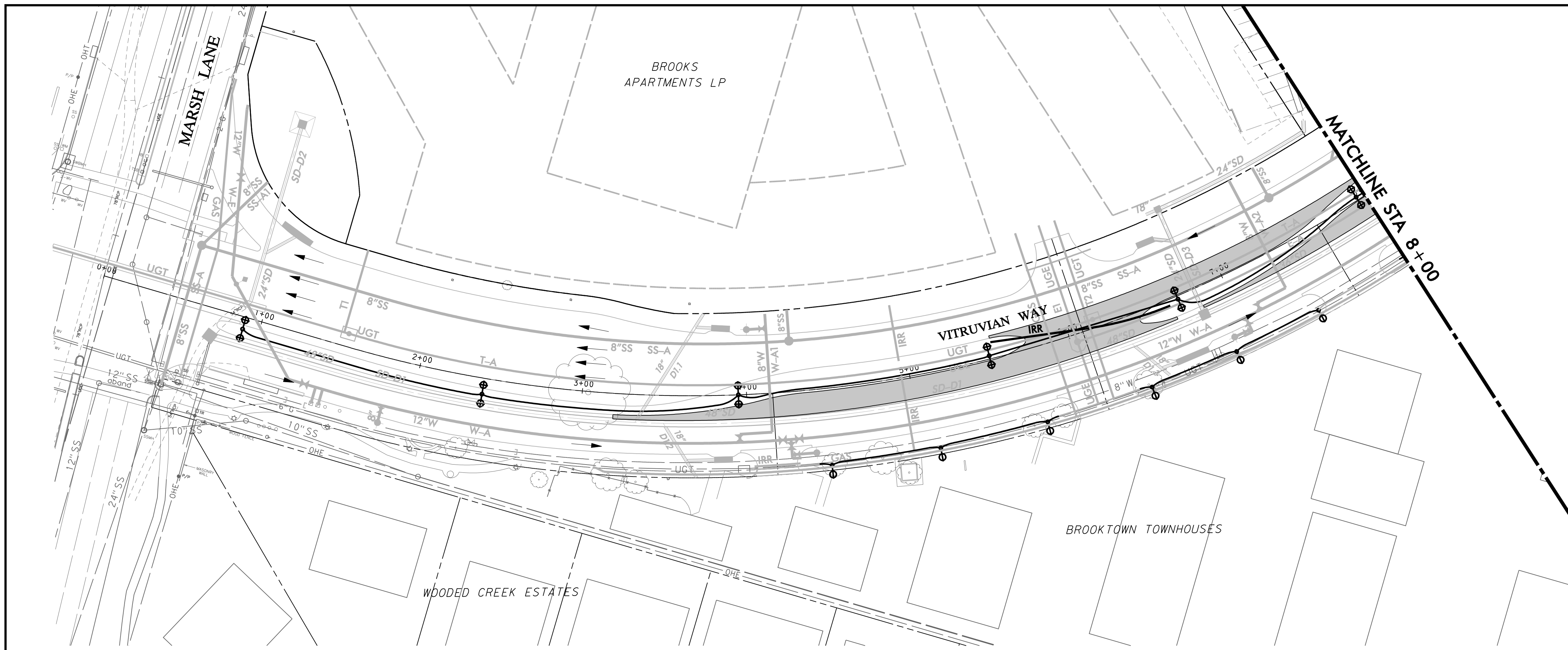
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

CONSTRUCTION PHASING PLAN-VW  
PHASE 3-STA 17+00.00 TO 30+00.00

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
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PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	10

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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BRUCE F. DUNNE  
 62654  
 LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	BY	DATE

**TOWN OF ADDISON**  
 DALLAS COUNTY, TEXAS

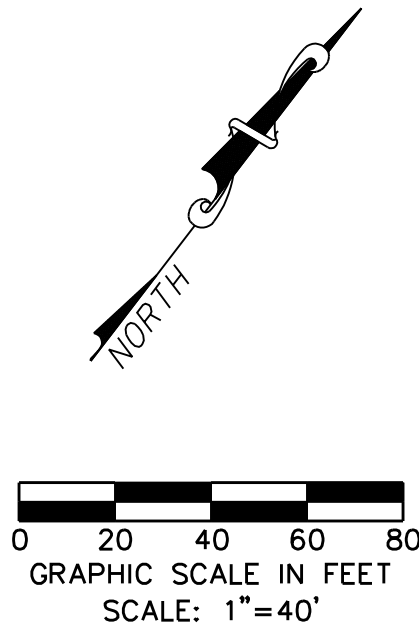
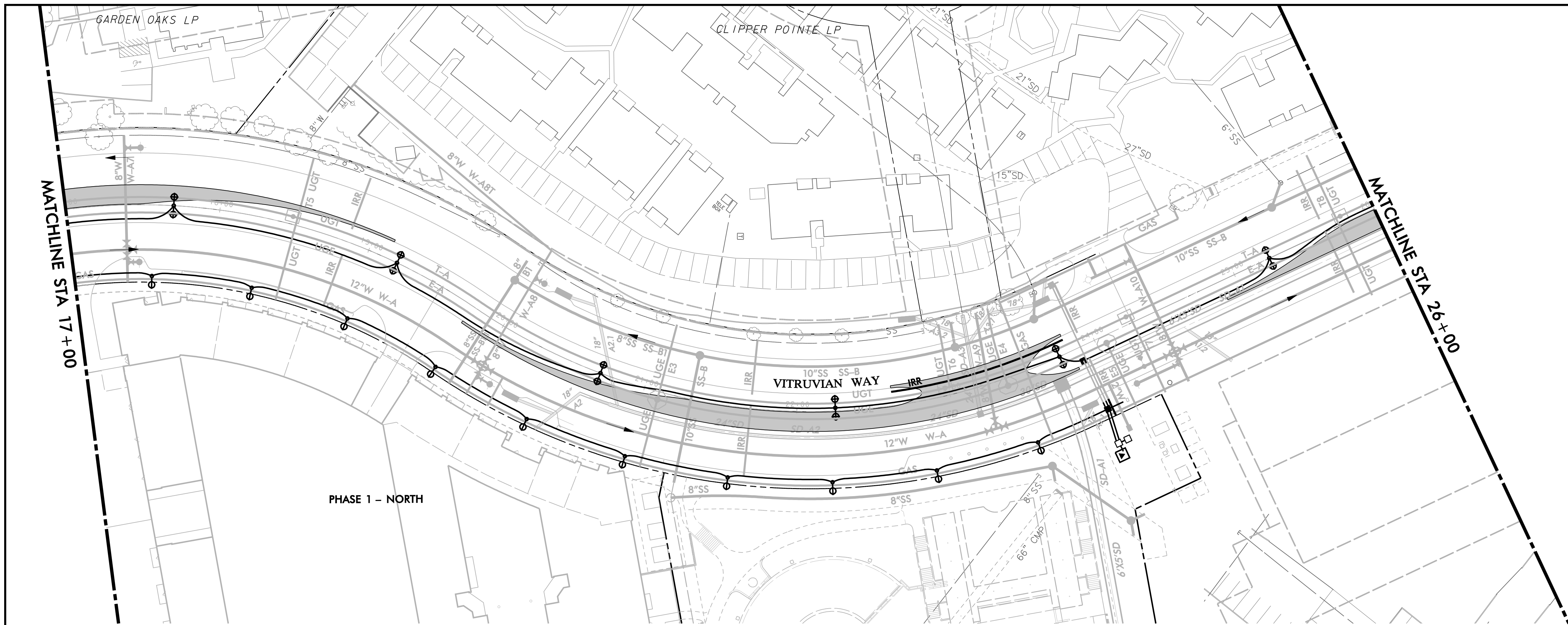
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE

**CONSTRUCTION PHASING PLAN-VW**  
 PHASE 4- STA 0+00.00 TO 17+00.00

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

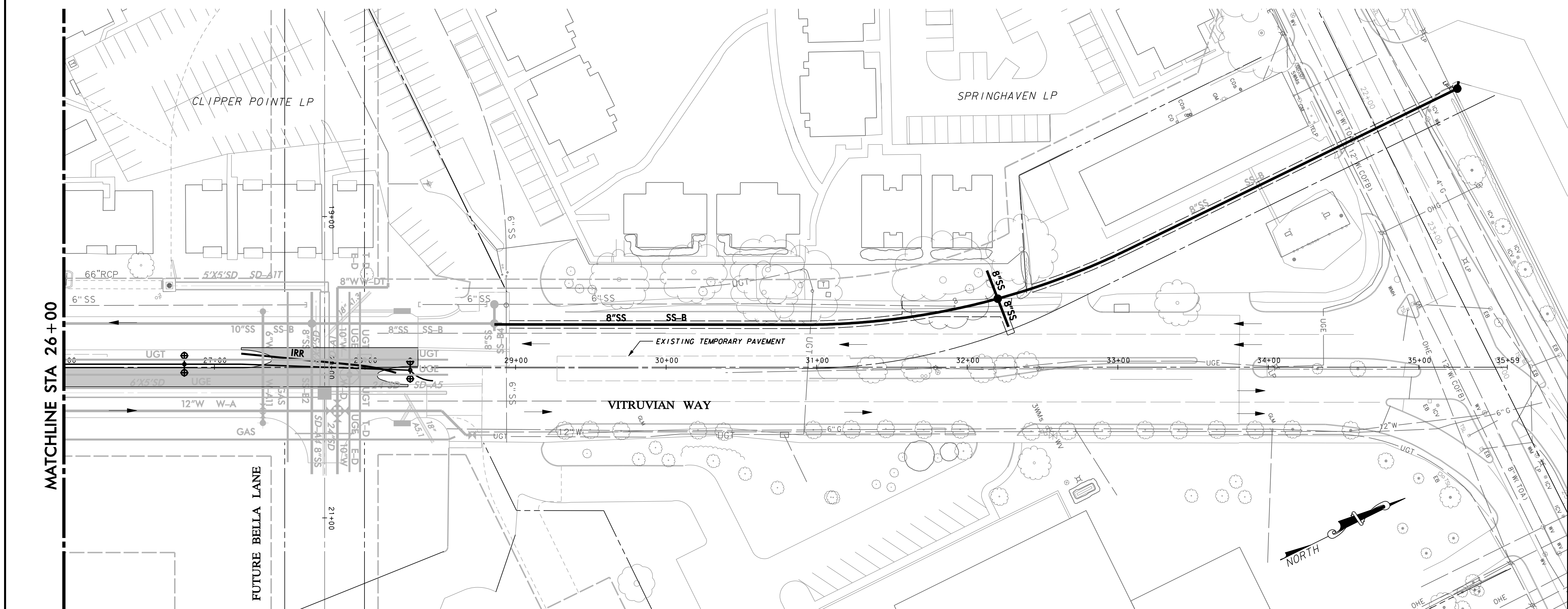
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	11

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



- PROPOSED PERMANENT PAVEMENT THIS PHASE
- PERMANENT PAVEMENT
- REMOVE TEMPORARY PAVEMENT THIS PHASE

PHASE 1 - NORTH

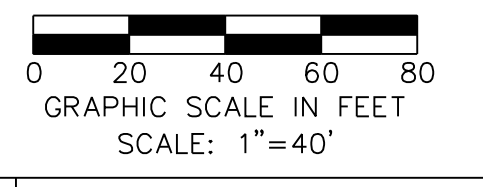
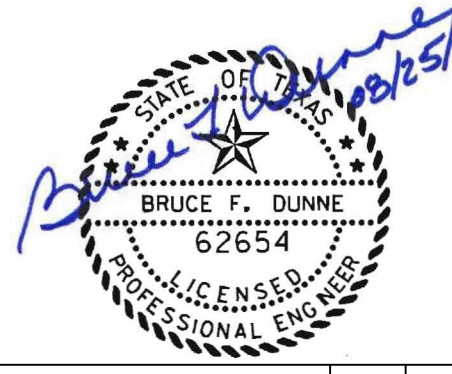


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NO.	REVISION	BY	DATE

**ADDISON** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

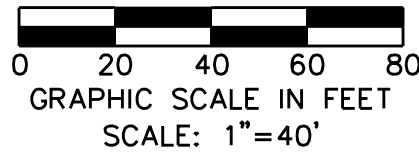
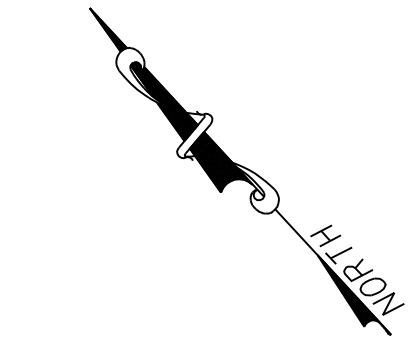
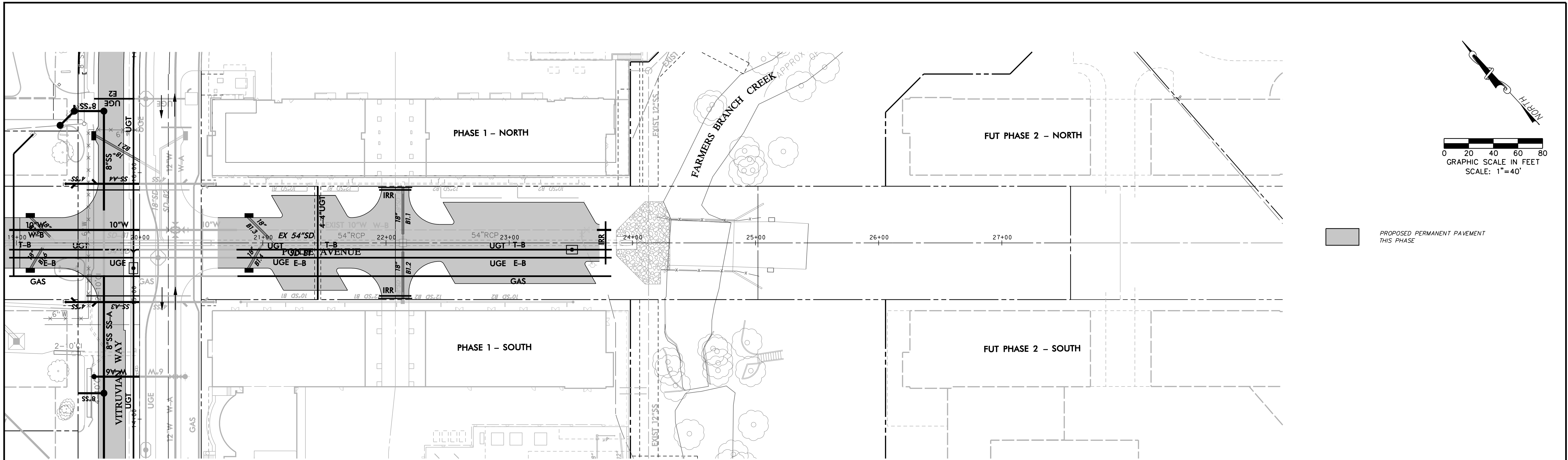
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**CONSTRUCTION PHASING PLAN-VW  
 PHASE 4-STA 17+00.00 TO 30+00.00**

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

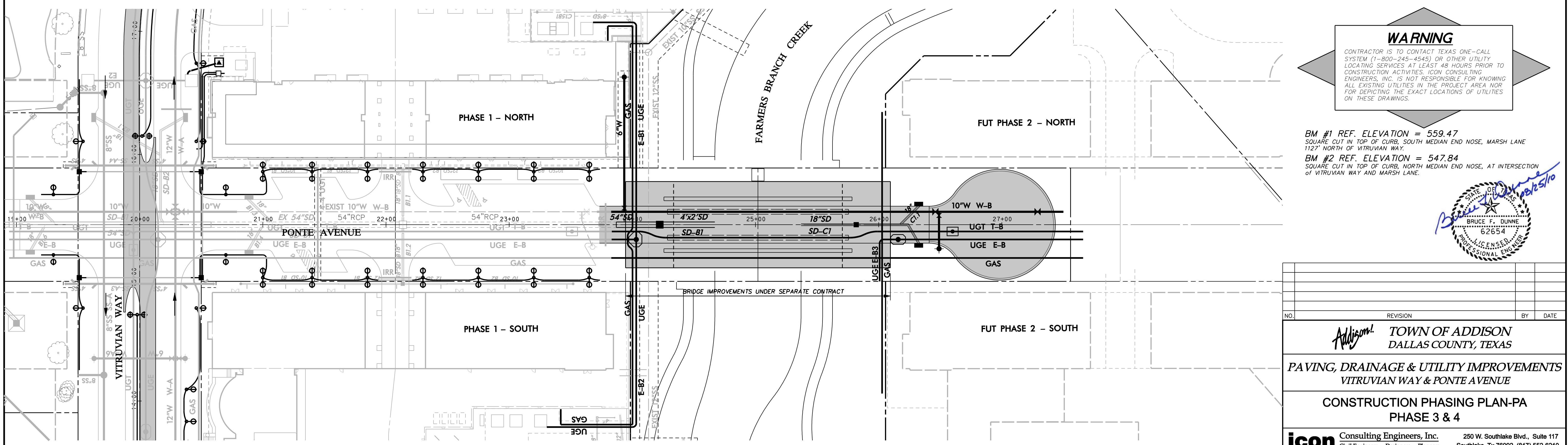
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	12

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



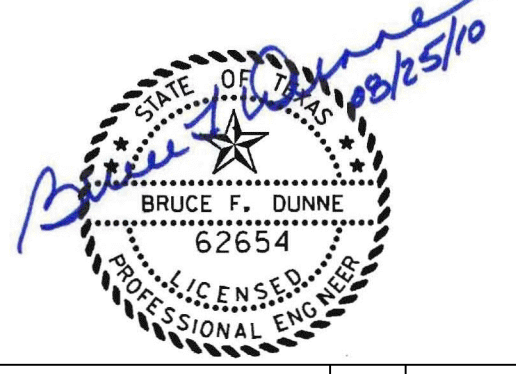
PROPOSED PERMANENT PAVEMENT THIS PHASE

PHASE 3



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NO.	REVISION	BY	DATE

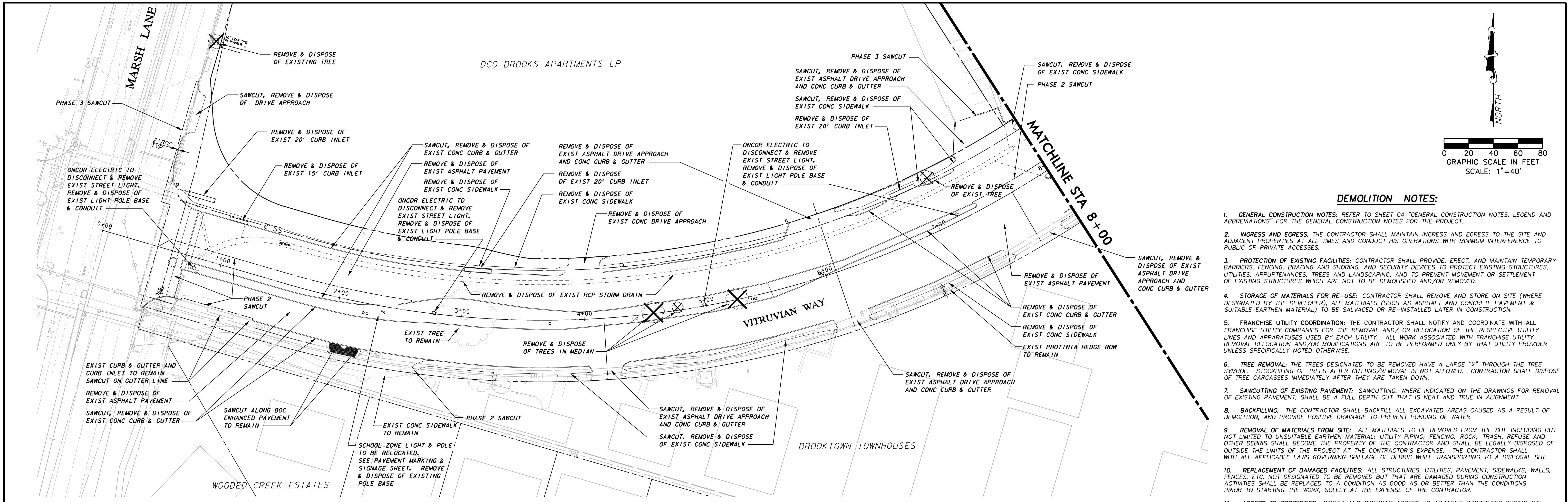
**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS  
 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

CONSTRUCTION PHASING PLAN-PA  
 PHASE 3 & 4

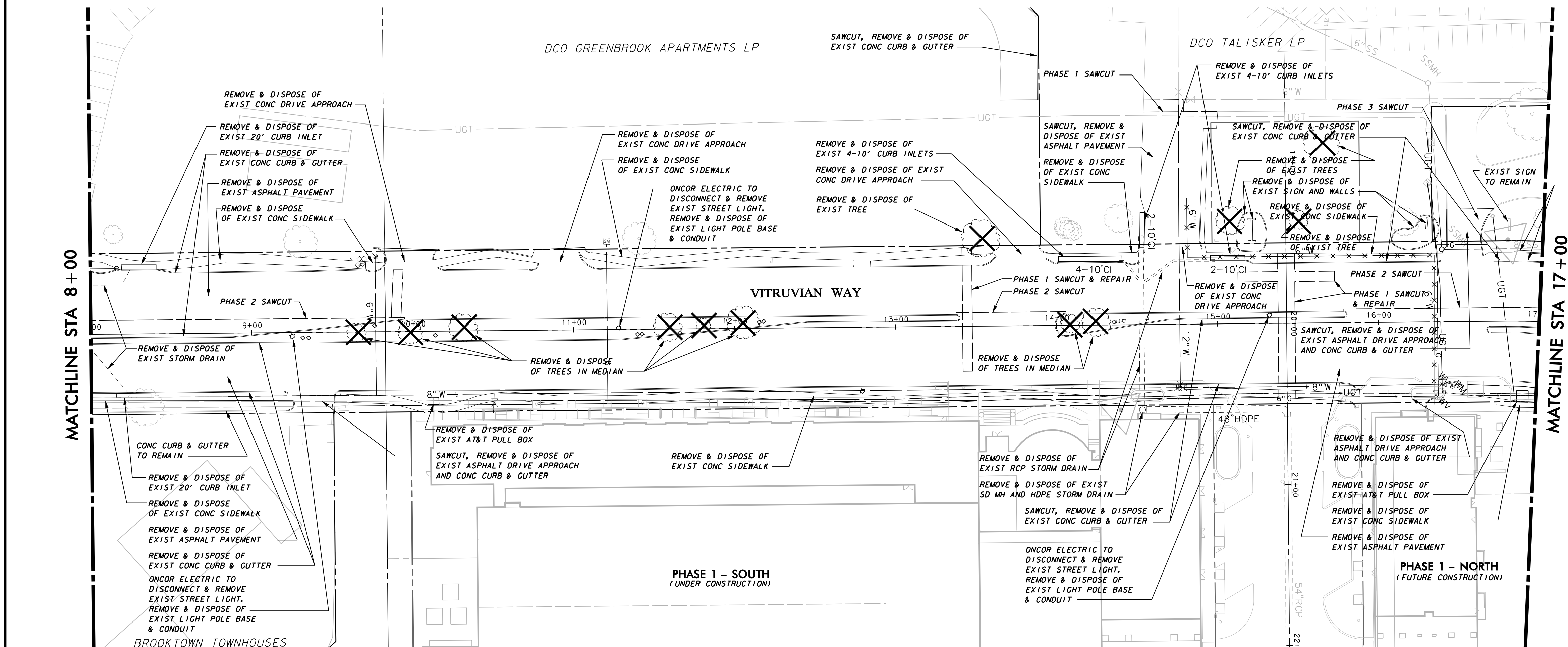
**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
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PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	13

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



- DEMOLITION NOTES:**
- GENERAL CONSTRUCTION NOTES: REFER TO SHEET C4 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.
  - INGRESS AND EGRESS: THE CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO THE SITE AND ADJACENT PROPERTIES AT ALL TIMES AND CONDUCT HIS OPERATIONS WITH MINIMUM INTERFERENCE TO PUBLIC OR PRIVATE ACCESSSES.
  - PROTECTION OF EXISTING FACILITIES: CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN TEMPORARY BARRIERS, FENCING, BRACING AND SHORING, AND SECURITY DEVICES TO PROTECT EXISTING STRUCTURES, UTILITIES, APPURTENANCES, TREES AND LANDSCAPING, AND TO PREVENT MOVEMENT OR SETTLEMENT OF EXISTING STRUCTURES WHICH ARE NOT TO BE DEMOLISHED AND/OR REMOVED.
  - STORAGE OF MATERIALS FOR RE-USE: CONTRACTOR SHALL REMOVE AND STORE ON SITE (WHERE DESIGNATED BY THE DEVELOPER), ALL MATERIALS (SUCH AS ASPHALT AND CONCRETE PAVEMENT & SUITABLE EARTHEN MATERIAL) TO BE SALVAGED OR RE-INSTALLED LATER IN CONSTRUCTION.
  - FRANCHISE UTILITY COORDINATION: THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ALL FRANCHISE UTILITY COMPANIES FOR THE REMOVAL AND/OR RELOCATION OF THE RESPECTIVE UTILITY LINES AND APPURTENANCES USED BY EACH UTILITY. ALL WORK ASSOCIATED WITH FRANCHISE UTILITY REMOVAL RELOCATION AND/OR MODIFICATIONS ARE TO BE PERFORMED ONLY BY THAT UTILITY PROVIDER UNLESS SPECIFICALLY NOTED OTHERWISE.
  - TREE REMOVAL: THE TREES DESIGNATED TO BE REMOVED HAVE A LARGE "X" THROUGH THE TREE SYMBOL. STOCKPILING OF TREES AFTER CUTTING/REMOVAL IS NOT ALLOWED. CONTRACTOR SHALL DISPOSE OF TREE CARCASSES IMMEDIATELY AFTER THEY ARE TAKEN DOWN.
  - SAWCUTTING OF EXISTING PAVEMENT: SAWCUTTING, WHERE INDICATED ON THE DRAWINGS FOR REMOVAL OF EXISTING PAVEMENT, SHALL BE A FULL DEPTH CUT THAT IS NEAT AND TRUE IN ALIGNMENT.
  - BACKFILLING: THE CONTRACTOR SHALL BACKFILL ALL EXCAVATED AREAS CAUSED AS A RESULT OF DEMOLITION, AND PROVIDE POSITIVE DRAINAGE TO PREVENT PONDING OF WATER.
  - REMOVAL OF MATERIALS FROM SITE: ALL MATERIALS TO BE REMOVED FROM THE SITE INCLUDING BUT NOT LIMITED TO UNSUITABLE EARTHEN MATERIAL; UTILITY PIPING; FENCING; ROCK; TRASH, REFUSE AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OUTSIDE THE LIMITS OF THE PROJECT AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL WITH ALL APPLICABLE LAWS GOVERNING SPILLAGE OF DEBRIS WHILE TRANSPORTING TO A DISPOSAL SITE.
  - REPLACEMENT OF DAMAGED FACILITIES: ALL STRUCTURES, UTILITIES, PAVEMENT, SIDEWALKS, WALLS, FENCES, ETC. NOT DESIGNATED TO BE REMOVED BUT THAT ARE DAMAGED DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED TO A CONDITION AS GOOD AS OR BETTER THAN THE CONDITIONS PRIOR TO STARTING THE WORK, SOLELY AT THE EXPENSE OF THE CONTRACTOR.
  - ACCESS TO PROPERTIES: STREET AND SIDEWALK ACCESS TO ABUTTING PROPERTIES DURING THE CONSTRUCTION OF THIS PROJECT MUST BE MAINTAINED FOR EMERGING OF LOCAL TRAFFIC.

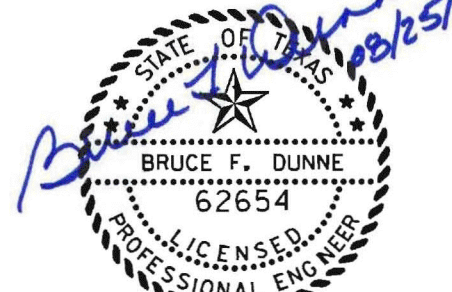


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NO.	REVISION	BY	DATE

**Addison** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE

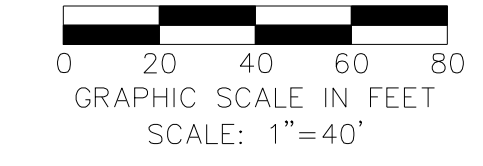
**DEMOLITION PLAN - VW**  
 STA. 0+00.00 TO STA. 17+00.00

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	14

**DEMOLITION NOTES:**

1. GENERAL CONSTRUCTION NOTES: REFER TO SHEET C4 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.
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11. ACCESS TO PROPERTIES: STREET AND SIDEWALK ACCESS TO ADJACENT PROPERTIES DURING THE CONSTRUCTION OF THIS PROJECT MUST BE MAINTAINED FOR EMERGING OF LOCAL TRAFFIC.



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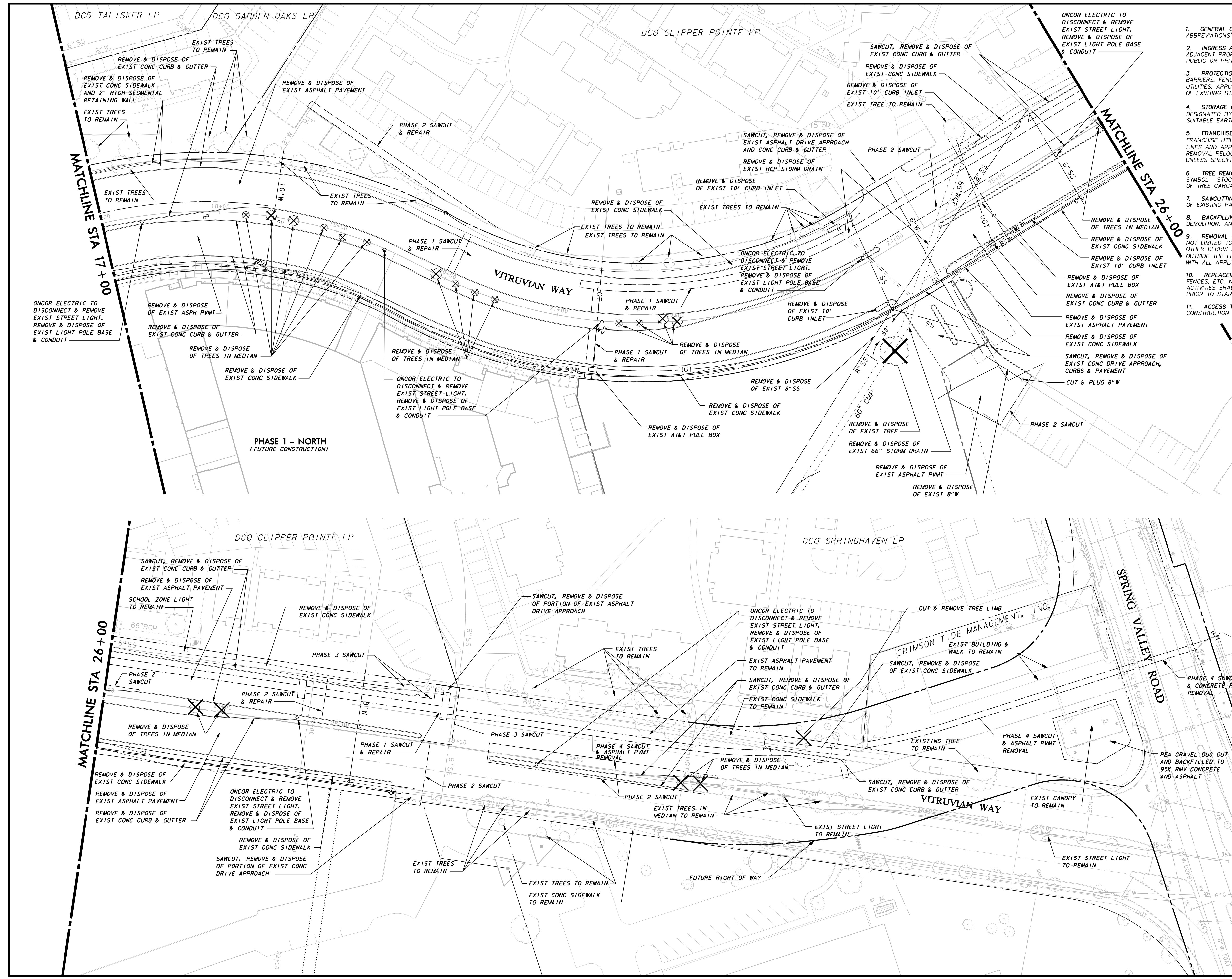


NO.	REVISION	BY	DATE

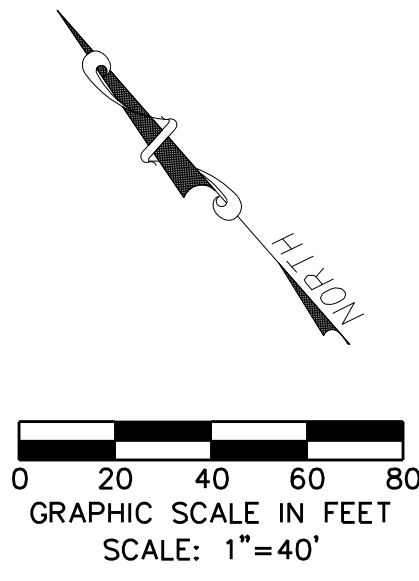
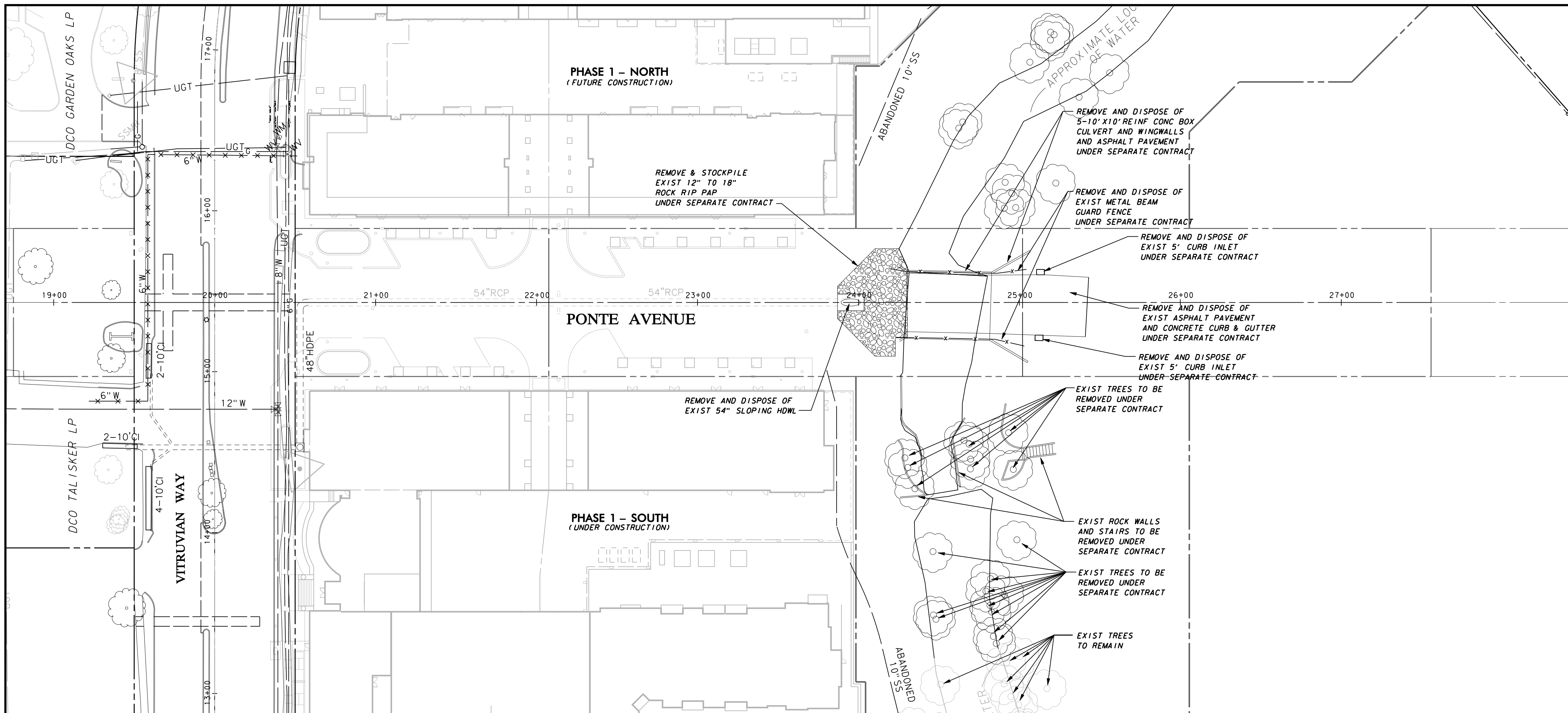
**Addison** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS  
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE

**DEMOLITION PLAN - VW**  
 STA. 17+00.00 TO STA. 32+40.27

<b>icon</b> Consulting Engineers, Inc. Civil Engineers - Designers - Planners	250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210				
PROJECT: 5029-01	DESIGN: ICE	DRAWN: ICE	DATE: MAY 7 2009	FILE: PW# 2009-01	SHEET: 15



PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



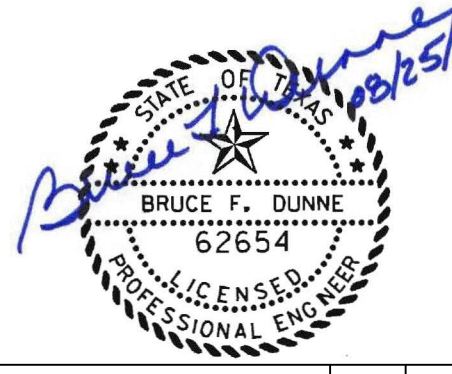
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3. **PROTECTION OF EXISTING FACILITIES:** CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN TEMPORARY BARRIERS, FENCING, BRACING AND SHORING, AND SECURITY DEVICES TO PROTECT EXISTING STRUCTURES, UTILITIES, APPURTENANCES, TREES AND LANDSCAPING, AND TO PREVENT MOVEMENT OR SETTLEMENT OF EXISTING STRUCTURES WHICH ARE NOT TO BE DEMOLISHED AND/OR REMOVED.
4. **STORAGE OF MATERIALS FOR RE-USE:** CONTRACTOR SHALL REMOVE AND STORE ON SITE (WHERE DESIGNATED BY THE DEVELOPER), ALL MATERIALS (SUCH AS ASPHALT AND CONCRETE PAVEMENT & SUITABLE EARTHEN MATERIAL) TO BE SALVAGED OR RE-INSTALLED LATER IN CONSTRUCTION.
5. **FRANCHISE UTILITY COORDINATION:** THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ALL FRANCHISE UTILITY COMPANIES FOR THE REMOVAL AND/OR RELOCATION OF THE RESPECTIVE UTILITY LINES AND APPARATUS USED BY EACH UTILITY. ALL WORK ASSOCIATED WITH FRANCHISE UTILITY REMOVAL RELOCATION AND/OR MODIFICATIONS ARE TO BE PERFORMED ONLY BY THAT UTILITY PROVIDER UNLESS SPECIFICALLY NOTED OTHERWISE.
6. **TREE REMOVAL:** THE TREES DESIGNATED TO BE REMOVED HAVE A LARGE "X" THROUGH THE TREE SYMBOL. STOCKPILING OF TREES AFTER CUTTING/REMOVAL IS NOT ALLOWED. CONTRACTOR SHALL DISPOSE OF TREE CARCASSES IMMEDIATELY AFTER THEY ARE TAKEN DOWN.
7. **SAWCUTTING OF EXISTING PAVEMENT:** SAWCUTTING, WHERE INDICATED ON THE DRAWINGS FOR REMOVAL OF EXISTING PAVEMENT, SHALL BE A FULL DEPTH CUT THAT IS NEAT AND TRUE IN ALIGNMENT.
8. **BACKFILLING:** THE CONTRACTOR SHALL BACKFILL ALL EXCAVATED AREAS CAUSED AS A RESULT OF DEMOLITION, AND PROVIDE POSITIVE DRAINAGE TO PREVENT PONDING OF WATER.
9. **REMOVAL OF MATERIALS FROM SITE:** ALL MATERIALS TO BE REMOVED FROM THE SITE INCLUDING BUT NOT LIMITED TO UNSUITABLE EARTHEN MATERIAL; UTILITY PIPING; FENCING; ROCK; TRASH; REFUSE AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OUTSIDE THE LIMITS OF THE PROJECT AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL WITH ALL APPLICABLE LAWS GOVERNING SPILLAGE OF DEBRIS WHILE TRANSPORTING TO A DISPOSAL SITE.
10. **REPLACEMENT OF DAMAGED FACILITIES:** ALL STRUCTURES, UTILITIES, PAVEMENT, SIDEWALKS, WALLS, FENCES, ETC. NOT DESIGNATED TO BE REMOVED BUT THAT ARE DAMAGED DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED TO A CONDITION AS GOOD AS OR BETTER THAN THE CONDITIONS PRIOR TO STARTING THE WORK, SOLELY AT THE EXPENSE OF THE CONTRACTOR.
11. **ACCESS TO PROPERTIES:** STREET AND SIDEWALK ACCESS TO ABUTTING PROPERTIES DURING THE CONSTRUCTION OF THIS PROJECT MUST BE MAINTAINED FOR EMERGING OF LOCAL TRAFFIC.

**WARNING**

CONTRACTOR IS TO CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY LOCATING SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. ICON CONSULTING ENGINEERS, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOR FOR DEPICTING THE EXACT LOCATIONS OF UTILITIES ON THESE DRAWINGS.

BM #1 REF. ELEVATION = 559.47  
 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.  
 BM #2 REF. ELEVATION = 547.84  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS  
 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

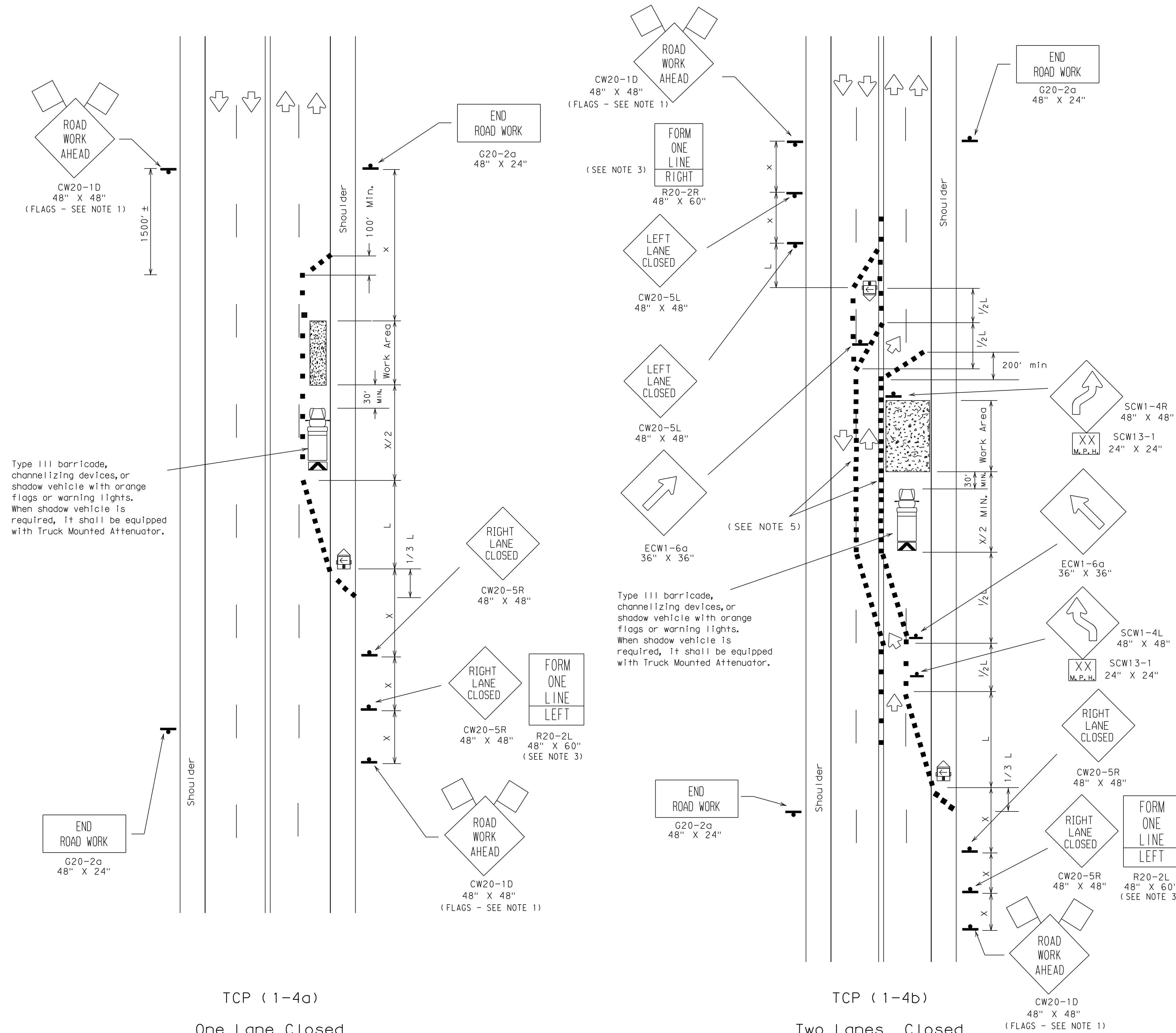
DEMOLITION PLAN - PA  
 STA 20+50.00 TO STA 27+55.80

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	16

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE





Type III barricade, channelizing devices, or shadow vehicle with orange flags or warning lights. When shadow vehicle is required, it shall be equipped with Truck Mounted Attenuator.

Type III barricade, channelizing devices, or shadow vehicle with orange flags or warning lights. When shadow vehicle is required, it shall be equipped with Truck Mounted Attenuator.

**LEGEND**

- Type III Barricade
- Channelizing Devices
- Flag
- Heavy Work Vehicle
- Truck Mounted Attenuator
- Trailer Mounted Flashing Arrow Panel
- Portable Changeable Message Sign
- Flagger
- Sign Post

Posted Speed	Formula	Minimum Desirable Taper Lengths			Suggested Maximum Spacing of Device		Minimum Sign Spacing Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60' - 75'	120'
35		205'	225'	245'	35'	70' - 90'	160'
40		265'	295'	320'	40'	80' - 100'	240'
45	L = WS	450'	495'	540'	45'	90' - 110'	320'
50		500'	550'	600'	50'	100' - 125'	400'
55		550'	605'	660'	55'	110' - 140'	500'
60		600'	660'	720'	60'	120' - 150'	* 600'
65		650'	715'	780'	65'	130' - 165'	* 700'
70	700'	770'	840'	70'	140' - 175'	* 800'	

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L = Length of Taper (FT.) W = Width of Offset (FT.) S = Posted Speed (MPH)

**TYPICAL USAGE:**

	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
MOBILE	✓			

- GENERAL NOTES:**
- Unless otherwise stated in the plans, flags attached to the signs are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
  - The FORM ONE LANE LEFT sign may be used following the RIGHT LANE CLOSED sign. Spacing distance between signs should be the minimum distance indicated.
  - ROAD WORK AHEAD sign may be repeated if the visibility of the work zone is less than 1500'.
  - If pavement markings are not removed and traffic is directed over a double yellow centerline, the maximum spacing of channelizing devices in a tangent section should be no greater than 10 feet.

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:

Standards Engineer  
 Traffic Operations Division - TE  
 Texas Department of Transportation  
 125 East 11th Street  
 Austin, Texas 78701-2483  
 Phone (512) 416-3335  
 Fax (512) 416-3161  
 E-mail TRF-STANDARD@mailgw.dot.state.tx.us

The requirement for shadow vehicles will be listed in the project GENERAL NOTES, Item 502, Barricades, Signs and Traffic Handling.

**STANDARD PLANS**  
**TEXAS DEPARTMENT OF TRANSPORTATION**  
*Traffic Operations Division*

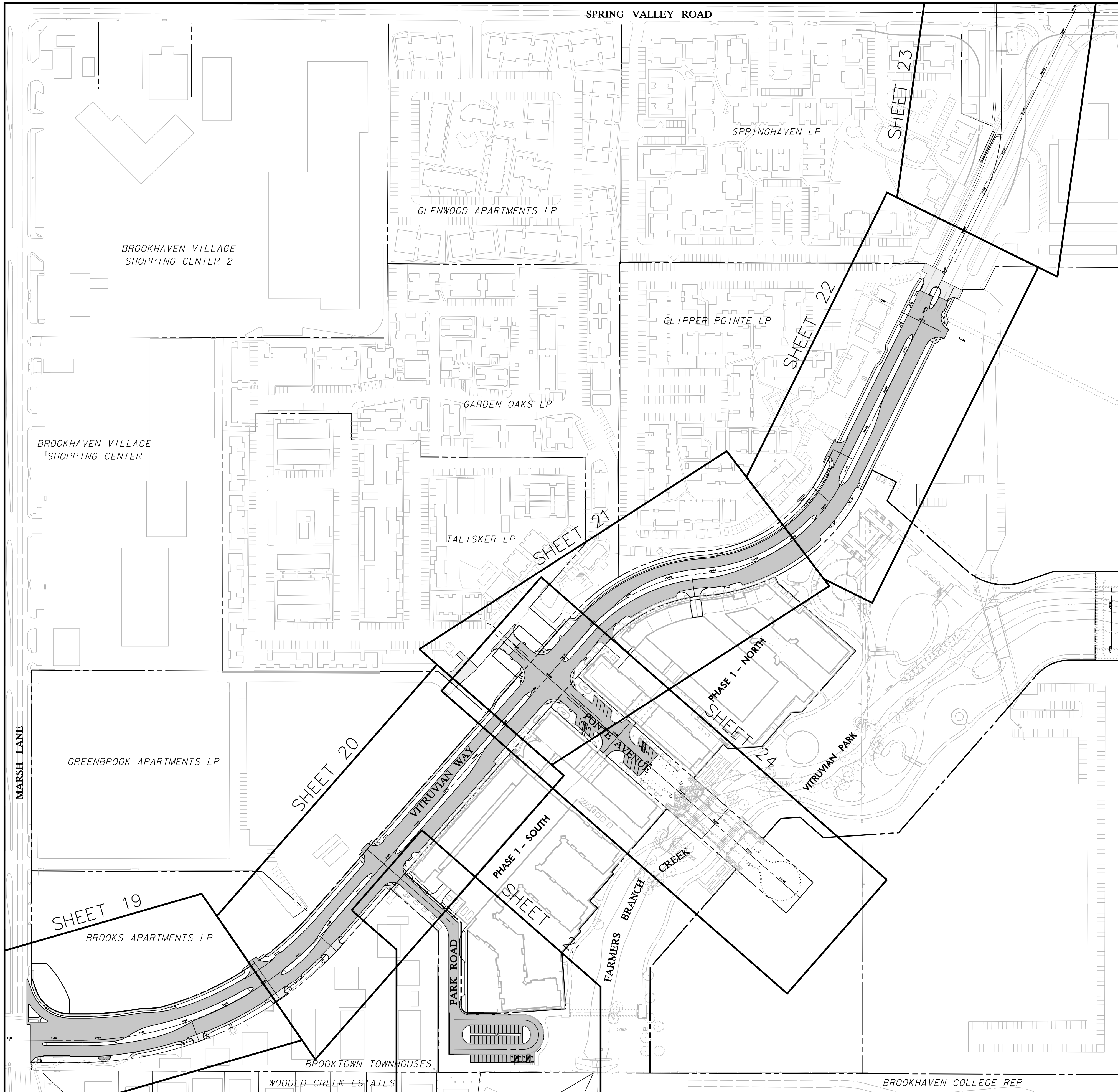
**TRAFFIC CONTROL PLAN**

TCP (1-4)-98

REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
2-94		6		17
8-95				
1-97	COUNTY	CONTROL	SECTION	JOB
4-98				HIGHWAY

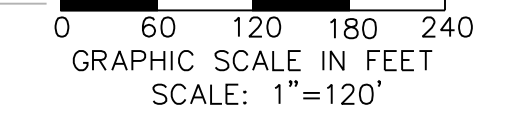
SPRING VALLEY ROAD

GRADING & PAVING GENERAL NOTES



1. REFER TO SHEET 4 'GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS' FOR THE GENERAL CONSTRUCTION NOTES FOR THIS PROJECT.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD SPECIFICATIONS AS PUBLISHED BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, AND ANY AND ALL AMENDMENTS BY THE TOWN OF ADDISON, AS WELL AS STANDARD CONSTRUCTION DETAILS OF THE TOWN OF ADDISON.
3. PRIOR TO COMMENCING CONSTRUCTION, THE TOWN OF ADDISON, THE CONSULTING ENGINEERS, THE SUCCESSFUL CONTRACTOR, UTILITY COMPANIES, AND ANY OTHER AFFECTED PARTIES, SHALL CONVENE FOR A PRE-CONSTRUCTION CONFERENCE AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
4. THE CONTRACTOR SHALL OBTAIN A RIGHT-OF-WAY PERMIT FROM THE TOWN OF ADDISON PRIOR TO WORKING WITHIN THE PUBLIC RIGHT-OF-WAY.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ANY PUBLIC UTILITY COMPANIES FOR LOCATION OF EXISTING FACILITIES IN OR NEAR THE WORK AREAS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:  
 TOWN OF ADDISON (WATER, SEWER, SIGNALS)      ATMOS ENERGY (GAS)  
 VERIZON / NCI  
 TOWN OF ADDISON (WATER, SEWER, SIGNALS)      VERIZON / NCI  
 ONCOR ELECTRIC DELIVERY      TIME-WARNER CABLE  
 AT&T (SOUTHWESTERN BELL)
6. THE CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER (SIX SETS EACH), FOR APPROVAL OF ALL MATERIALS TO BE ADDED TO THE PUBLIC INFRASTRUCTURE, PRIOR TO INCORPORATING MATERIALS INTO THE JOB.
7. THE CONTRACTOR SHALL EXECUTE AN 'EXCAVATION PERFORMANCE AND MAINTENANCE BOND' PRIOR TO WORKING WITHIN THE PUBLIC RIGHT-OF-WAY.
8. THE CONTRACTOR SHALL PROVIDE A MAINTENANCE BOND FOR PUBLIC INFRASTRUCTURE WORK IN THE FOLLOWING AMOUNTS:  
 • 100% FOR VALUATIONS LESS THAN OR EQUAL TO \$5,000.  
 • \$5,000 FOR VALUATION GREATER THAN \$5,000 AND LESS THAN \$50,000.  
 • 10% FOR VALUATIONS GREATER THAN \$50,000.  
 BONDS SHALL BE FOR A PERIOD OF TWO YEARS BEGINNING WITH THE DATE OF FINAL ACCEPTANCE BY THE TOWN.
9. THE CONTRACTOR SHALL FULLY COMPLY WITH AND SUPPLEMENT AS NECESSARY, THE CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT.
10. THE TOWN OF ADDISON PUBLIC WORKS DEPARTMENT WILL APPROVE AND/OR DETERMINE THE TRAFFIC CONTROL PLAN AND WORKING HOURS. CONTACT THE ASSISTANT CITY ENGINEER AT (972) 450-2857 OR THE PUBLIC WORKS INSPECTOR AT (972) 450-2871. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, AND SUPPLEMENT AS NECESSARY, THE TRAFFIC CONTROL MEASURES ON THIS PROJECT, INCLUDING PROVIDING ADEQUATE FLAGMEN, SIGNAGE, STRIPING AND WARNING DEVICES, ETC. DURING THE OPERATION IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION DURING WORKING HOURS OR PROVIDE AN ALL-WEATHER DETOUR AROUND THE CONSTRUCTION SITE, INCLUDING PUBLIC NOTIFICATION AND SIGNING.
11. TEMPORARY OR PERMANENT BARRICADES SHALL REMAIN AT ALL POINTS OF INGRESS OR EGRESS TO PREVENT PUBLIC USE UNTIL THE WORK RECEIVES FINAL ACCEPTANCE.
12. THE TOWN OF ADDISON WILL PROVIDE A GEOTECHNICAL LABORATORY TO PERFORM APPROPRIATE TESTING. CONSTRUCTION ACTIVITIES (ALL EARTHWORK OPERATIONS) SHALL BE OBSERVED AND TESTED ON A CONTINUING BASIS BY THE GEOTECHNICAL ENGINEER FOR CONFORMANCE WITH THE REQUIREMENTS SET FORTH IN THE GEOTECHNICAL STUDY WHICH IS MADE A PART OF THESE CONSTRUCTION DOCUMENTS. ANY TEST THAT FAILS TO MEET CITY REQUIREMENTS SHALL BE RETESTED AT THE CONTRACTOR'S EXPENSE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE AT ALL TIMES DURING CONSTRUCTION, INCLUDING PROVIDING ALL TEMPORARY STRUCTURES OR IMPROVEMENTS AS NECESSARY FOR THE SAFETY OF THE PUBLIC.
14. ANY ADJACENT PROPERTIES AFFECTED BY THE CONTRACTOR'S CONSTRUCTION OPERATIONS SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.
15. AREAS TO BE PAVED AND ALL AREAS THAT ARE TO RECEIVE FILL MATERIAL SHALL BE STRIPPED OF VEGETATION, TREES, ROOTS, STUMPS, DEBRIS, AND OTHER ORGANIC MATERIAL. THE DEPTH OF STRIPPING IS ESTIMATED TO BE ON THE ORDER OF FOUR (4) INCHES IN ORDER TO REMOVE THE SURFACE SOIL CONTAINING ORGANIC MATERIAL. THE ACTUAL STRIPPING DEPTH SHALL BE BASED ON FIELD OBSERVATIONS. STRIPPED TOPSOIL SHALL BE STOCKPILED IN LOCATION ON-SITE APPROVED BY THE ENGINEER. ALL TREES, INCLUDING STUMPS AND ROOT SYSTEMS, VEGETATION, DEBRIS AND OTHER OBJECTIONABLE MATERIAL, SHALL BE REMOVED AND DISPOSED OFF-SITE. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS GOVERNING SPILLAGE OF DEBRIS WHILE TRANSPORTING TO A DISPOSAL SITE. ALL COSTS ASSOCIATED WITH DISPOSAL OF MATERIAL SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
16. BURNING SHALL NOT BE PERMITTED ON THE PROJECT SITE UNLESS APPROVED IN WRITING BY THE GOVERNING AUTHORITIES.
17. UPON COMPLETION OF STRIPPING OPERATIONS, AND PRIOR TO PLACEMENT OF ANY FILL MATERIALS, THE STRIPPED AREAS SHOULD BE OBSERVED TO DETERMINE IF ADDITIONAL EXCAVATION IS REQUIRED TO REMOVE WEAK OR OTHERWISE OBJECTIONABLE MATERIALS THAT WOULD ADVERSELY AFFECT THE FILL PLACEMENT. THE SUBGRADE SHOULD BE FIRM AND ABLE TO SUPPORT CONSTRUCTION EQUIPMENT WITHOUT DISPLACEMENT. SOFT OR YIELDING SUBGRADE SHOULD BE CORRECTED AND MADE STABLE BEFORE CONSTRUCTION PROCEEDS. PROOF ROLLING SHOULD BE PERFORMED USING A HEAVY PNEUMATIC TIRE ROLLER, LOADED DUMP TRUCK, OR SIMILAR PIECE OF EQUIPMENT WEIGHING 25 TONS. THE PROOF ROLLING OPERATIONS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE.
18. WHEN CLAY OR OTHER UNSTABLE MATERIAL IS PRESENT IN AREAS OF PROPOSED PAVED AREAS, THE GEOTECHNICAL ENGINEER SHALL OBSERVE THE STABILITY OF ANY EXISTING CLAY OR WEATHERED MATERIAL THAT IS PRESENT IN THE SUBBASE, AND SHALL DETERMINE WHETHER ADDITIONAL EXCAVATION OF THESE MATERIALS WILL BE REQUIRED. IF THIS MATERIAL IS DEEMED SUITABLE FOR SUBBASE MATERIAL, THE SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF SIX (6) INCHES, ITS MOISTURE CONTENT ADJUSTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER, AND THEN RE-COMPACTED TO BETWEEN NINETY-FIVE (95) PERCENT TO ONE HUNDRED (100) PERCENT OF THE OPTIMUM DENSITY DETERMINED BY THE STANDARD PROCTOR TEST, ASTM D-698 PRIOR TO PLACEMENT OF FILL MATERIALS.
19. ALL SOILS USED FOR CONTROLLED FILL SHOULD BE FREE OF ROOTS, VEGETATION, AND OTHER DELETERIOUS OR UNDESIRABLE MATTER. ROCKS, LESS THAN 3 INCHES IN LARGEST DIMENSION WILL BE ALLOWED AS ACCEPTABLE FILL MATERIAL. SOILS IMPORTED FROM OFF-SITE FOR USE AS FILL SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER. THE FILL MATERIAL SHOULD BE PLACED IN LEVEL, UNIFORM LIFTS, WITH EACH LIFT COMPACTED TO THE MINIMUM DRY DENSITY WITHIN THE COMPACTION SOIL MOISTURE RANGES RECOMMENDED. THE LOOSE LIFT THICKNESS SHOULD NOT EXCEED 10 INCHES. EACH LAYER SHOULD BE PROPERLY PLACED, MIXED, SPREAD, AND COMPACTED TO BETWEEN NINETY-FIVE (95) AND ONE HUNDRED (100) PERCENT OF STANDARD PROCTOR DENSITY AT 0% TO 3% OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 698.
20. THE PROPOSED CONTOURS INDICATED ON THE GRADING PLAN ARE FINISHED GRADES AND ARE SHOWN AT ONE-FOOT INTERVALS. SPOT ELEVATIONS SHOWN IN PAVED AREAS ARE TOP OF PAVEMENT, UNLESS NOTED OTHERWISE.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MASS GRADING OF THE SITE TO THE FOLLOWING ELEVATIONS:  
 • 8" BELOW FINISHED GRADE FOR ALL STREET PAVEMENT AREAS.  
 • 4" BELOW FINISHED GRADE FOR ALL SIDEWALK PAVEMENT AREAS.  
 • 6" BELOW FINISHED GRADE FOR ALL LANDSCAPE AREAS.
22. ALL LANDSCAPE AREAS AND OTHER DISTURBED AREAS WITHIN THE LIMITS OF THE PROPERTY NOT DESIGNATED TO BE PAVED SHALL RECEIVE SIX (6) INCHES OF TOPSOIL. REFER TO THE EROSION AND SEDIMENT CONTROL PLANS AND/OR LANDSCAPE PLANS FOR LIMITS OF TOPSOIL PLACEMENT.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALCULATING THE EARTHWORK QUANTITIES BASED ON THE EXISTING AND PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN ON THESE PLANS. ALL EARTHWORK SHALL BE CONSIDERED UNCLASSIFIED EXCAVATION AND BID ON A LUMP SUM BASIS, UNLESS NOTED OTHERWISE.
24. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, FENCES, TREES, SHRUBS, UTILITY SERVICES, BUILDINGS FOUNDATIONS AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW THE GROUND, THE COST OF WHICH SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
25. THE CONTRACTOR SHALL VERIFY THE ELEVATION, CONFIGURATION, AND ANGLULATION OF EXISTING PAVEMENT PRIOR TO CONSTRUCTION OF THE IN MATERIALS. WHERE PROPOSED CONCRETE PAVEMENT TO EXISTING CONCRETE PAVEMENT IS TO BE CONSTRUCTED BY THE CONTRACTOR, AT LEAST 15' OF REINFORCING STEEL SHALL BE EXPOSED FROM THE EXISTING PAVEMENT, OR THE CONTRACTOR SHALL PROVIDE HORIZONTAL DOWEL BARS PER THE DETAILS.
26. NO PERSON SHALL OPEN, TURN OFF, INTERFERE WITH, ATTACH ANY HOSE TO, OR TAP ANY WATER MAIN BELONGING TO THE TOWN OF ADDISON UNLESS DULY AUTHORIZED TO DO SO BY THE TOWN OF ADDISON PUBLIC WORKS DEPARTMENT (972-450-2871).
27. ALL EXISTING AND PROPOSED IMPROVEMENTS (MANHOLE RIMS, CLEAN-OUTS, FIRE HYDRANTS, VALVE BOXES, WATER METERS AND VALVES, ETC.) SHALL BE ADJUSTED TO FINAL FINISHED GRADE BY THE CONTRACTOR AT THE TIME OF PAVING.
28. PREPARATION OF SUBGRADE UNDER PAVED AREAS SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF ADDISON SPECIFICATIONS OR THE GEOTECHNICAL REPORT. THE MORE RESTRICTIVE REQUIREMENTS SHALL APPLY. PREPARATION OF THE SUBGRADE FOR PAVING WITHIN RIGHT-OF-WAY, STREET USE EASEMENTS AND/OR FIRE LINES SHALL NOT BE LIMITED TO ANY OF THE ABOVE. ALL TESTING OF UNDERGROUND UTILITIES HAS BEEN COMPLETED AND VERIFIED TO MEET THE SPECIFICATIONS AND AUTHORIZATION TO PROCEED HAS BEEN RECEIVED FROM THE INSPECTOR.
29. ALL FILL UNDER PAVEMENT AREAS SHALL BE COMPACTED TO A DENSITY OF AT LEAST NINETY-FIVE (95) PERCENT STANDARD PROCTOR AS PER ASTM D698 AT OR ABOVE OPTIMUM MOISTURE CONTENT (+3%) LIFTS SHALL BE AS SPECIFIED IN THE GEOTECHNICAL REPORT AND AS APPROVED BY THE TOWN OF ADDISON. ALL FILL MATERIAL SHALL BE TESTED AS INSTALLED AND CERTIFIED BY AN APPROVED SOILS LABORATORY.
30. THE SUBGRADE SHALL BE PROOF-ROLLED WITH HEAVY PNEUMATIC EQUIPMENT. ANY SOFT OR YIELDING SUBGRADE SHALL BE EXCAVATED TO FIRM SUBGRADE AND BACKFILLED AND RE-COMPACTED IN CONFORMANCE WITH THE GEOTECHNICAL REPORT. PAVEMENT SUBGRADE SHOULD NOT BE ALLOWED TO RETAIN WATER. WET MATERIAL SHALL BE REMOVED TO DRY, SOUND MATERIAL AND APPROPRIATE DENSITY ACHIEVED PRIOR TO PAVING OPERATIONS.
31. CONCRETE SHOULD BE PORTLAND CEMENT CONCRETE CONFORMING TO THE REQUIREMENTS OF TxDOT ITEM 021 PORTLAND CEMENT CONCRETE CLASS 'F'.
32. HYDRATED LIME (IF REQUIRED) SHALL MEET THE REQUIREMENTS OF TxDOT ITEM 260, LIME TREATMENT (USED AS SUBGRADE). LIME SHALL BE APPLIED AT THE RATE AND THICKNESS AS RECOMMENDED IN THE GEOTECHNICAL REPORT, THOROUGHLY MIXED AND BLENDED WITH THE SUBGRADE AND UNIFORMLY COMPACTED TO A MINIMUM OF 100 PERCENT OF STANDARD PROCTOR (ASTM D698) DETERMINED BY THAT TEST. LIME STABILIZATION SHALL EXTEND ONE (1) FOOT OUTSIDE THE LIMITS OF THE PAVED AREA. IT SHOULD BE PROTECTED AND MAINTAINED IN A MOIST CONDITION UNTIL THE PAVEMENT IS PLACED.
33. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE HIS WORK WITH TRENCHING OPERATIONS FOR OTHER UTILITIES INCLUDING GAS, TELEPHONE, AND ELECTRIC SERVICES, LANDSCAPE IRRIGATION CONDUITS, LIGHTING CONDUITS, STREETSCAPE IMPROVEMENTS, ETC. AND SHALL PROVIDE BLOCKOUTS AND/OR FINAL ADJUSTMENT TO FINISH GRADE FOR ALL IMPROVEMENTS, EXISTING AND PROPOSED, WITHIN THE LIMITS OF THE PAVING WORK.
34. ALL CURB SHOWN IS TO BE SIX (6) INCHES HIGH.
35. EXPANSION JOINT MATERIAL SHALL EXTEND COMPLETELY THROUGH THE CURB.
36. ALL REINFORCING BARS SHALL BE GRADE 40 KSI DEFORMED REINFORCING STEEL. SIZE AND SPACING SHALL BE IN ACCORDANCE WITH THE DETAILS. WHERE BARS ARE SPLICED, A 30' DIAMETER LAP SHALL BE USED.
37. ALL REINFORCING STEEL AND DOWEL BARS IN PAVEMENT SHALL BE SUPPORTED AND MAINTAINED AT THE CORRECT CLEARANCES BY THE USE OF BAR CHAIRS OR OTHER APPROVED SUPPORTS.
38. THE CONTRACTOR SHALL PROCEED WITH PAVING NO MORE THAN SEVENTY-TWO (72) HOURS AFTER DENSITY/MOISTURE TESTS HAVE BEEN TAKEN AND PASSED BY THE TESTING FIRM. COPIES OF THE TEST RESULTS SHALL BE FURNISHED TO THE CITY. IN THE EVENT PAVING OPERATIONS HAVE NOT COMMENCED WITHIN THE SEVENTY-TWO (72) HOUR LIMIT, A RETEST SHALL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.
39. CONCRETE SHALL NOT BE PLACED WHEN THE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT AND FALLING, BUT MAY BE PLACED WHEN THE TEMPERATURE IS ABOVE 35 DEGREES AND RISING. THE TEMPERATURE READING SHALL BE TAKEN IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT.
40. CONSTRUCTION OF SIDEWALKS, WHEELCHAIR RAMPS AND ACCESSIBLE ROUTES SHALL BE IN ACCORDANCE WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND/OR THE AMERICANS DISABILITY ACT (ADA). ALL CONCRETE FOR HANDICAP RAMPS SHALL HAVE TRUNCATED DOMES.
41. PAVEMENT MARKINGS SHALL BE PROVIDED IN ACCORDANCE WITH THE TEXAS 'UNIFORM TRAFFIC MANUAL FOR PAVEMENT MARKINGS'. FIRE LANES SHALL BE STRIPED IN ACCORDANCE WITH THE TOWN OF ADDISON'S REQUIREMENTS. ALL HANDICAP SYMBOLS, SIGNAGE AND PAVEMENT MARKINGS SHALL COMPLY WITH TAS AND/OR ADA STANDARDS.
42. MEMBRANE CURING TYPE 2, WHITE PIGMENTED, SHALL BE USED FOR CURING ALL CONCRETE SURFACES IMMEDIATELY AFTER FINISHING OF SURFACES AND SHALL BE IN ACCORDANCE WITH THE TxDOT ITEM #526.
43. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR REPAIRS TO ALL EXISTING FACILITIES DAMAGED BY HIS ACTIVITIES.
44. THE CONTRACTOR SHALL PROVIDE PAVEMENT JOINTING IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:  
 A. SAW CUTTING SHALL BE DONE WITHIN EIGHT (8) HOURS OF POUR OR AS SOON AS CONCRETE CAN SUPPORT WEIGHT. PROVIDE A NEAT CUT WHICH IS TRUE IN ALIGNMENT.  
 B. CONTRACTOR SHALL MARK JOINT LOCATIONS AT THE CENTERLINE OF DOWEL LENGTH DURING HIS PAVING OPERATIONS.  
 C. ALL JOINTS ARE TO CONTINUE THROUGH THE CURB.  
 D. RADIAL JOINTS SHALL BE NO SHORTER THAN EIGHTEEN (18) INCHES.  
 E. ALL CONSTRUCTION JOINTS SHALL BE SAWN, CLEANED OF DEBRIS, BLOW DRY AND IMMEDIATELY SEALED.  
 F. ODD SHAPED PANELS SHALL BE REINFORCED WITH #3 BARS AT 18" EACH WAY. AN ODD SHAPED PANEL IS CONSIDERED TO BE ONE IN WHICH THE SLAB TAPERS TO A SHARP ANGLE WHEN THE LENGTH TO WIDTH RATIO EXCEEDS 3 TO 1 OR WHEN A SLAB IS NEITHER SQUARE NOR RECTANGULAR.  
 G. THE CONTRACTOR SHALL SUBMIT HIS DESIRED JOINT LAYOUT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING WORK.
45. THE CONTRACTOR SHALL PROVIDE VERIFICATION OF COMPLETION AND COMPLIANCE OF ANY AND ALL REQUIRED TESTS TO THE TOWN OF ADDISON.
46. THE CONTRACTOR SHALL CALL (972) 450-2847 TO REQUEST A FINAL WALK-THROUGH INSPECTION OF THE PUBLIC INFRASTRUCTURE WORK.

BRUCE F. DUNNE  
 62654  
 PROFESSIONAL ENGINEER

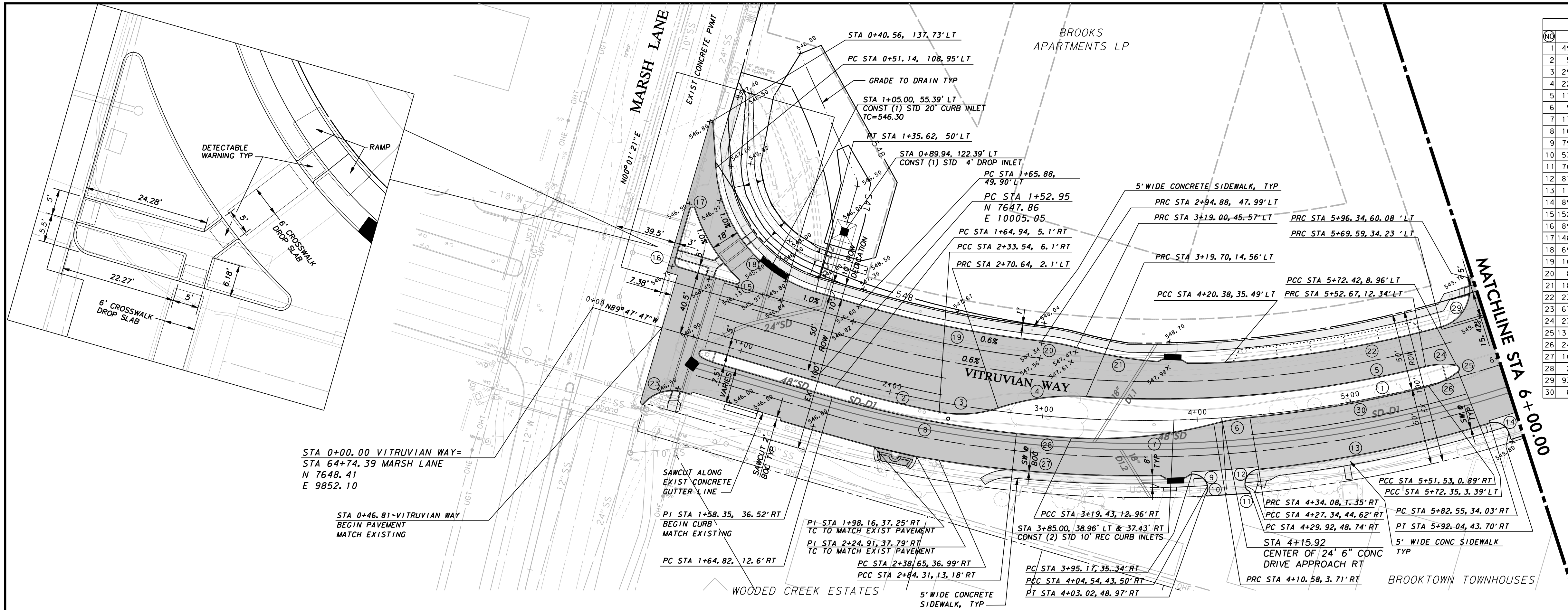


**ADDISON** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS  
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE  
**OVERALL PAVING PLAN & NOTES**

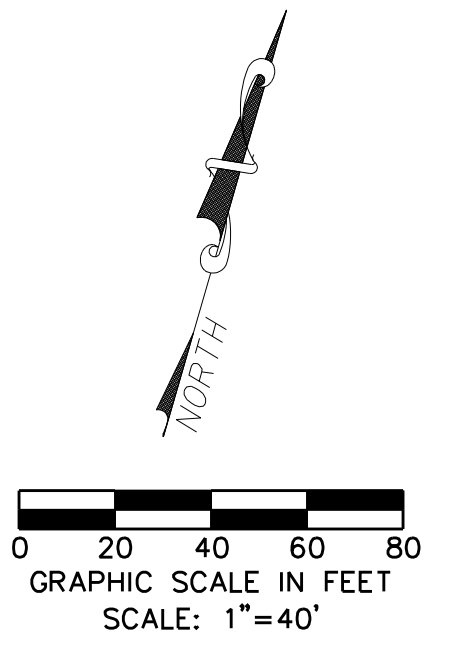
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	18

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



CURVE DATA			
NO	DELTA	RADIUS	LENGTH
1	49°00'01"	750.00'	641.41'
2	5°19'10"	744.51'	69.12'
3	29°25'43"	75.00'	38.52'
4	22°08'58"	150.00'	57.99'
5	17°32'09"	722.51'	221.13'
6	9°03'41"	150.00'	23.72'
7	17°45'03"	300.00'	92.94'
8	10°23'29"	670.33'	121.58'
9	79°32'15"	10.00'	13.88'
10	53°28'49"	6.33'	5.91'
11	70°57'52"	4.26'	5.28'
12	87°06'31"	10.00'	15.20'
13	11°15'05"	797.01'	156.56'
14	89°36'19"	10.00'	15.64'
15	152°25'11"	2.00'	5.32'
16	89°49'09"	4.00'	6.27'
17	146°20'31"	2.00'	5.11'
18	69°49'09"	90.00'	109.67'
19	10°01'16"	689.51'	120.60'
20	8°41'54"	150.00'	22.77'
21	18°28'53"	300.00'	96.77'
22	23°53'14"	700.51'	292.05'
23	67°23'19"	25.00'	29.40'
24	23°02'46"	50.00'	20.11'
25	131°57'11"	2.50'	5.76'
26	24°30'11"	50.00'	21.38'
27	10°16'38"	797.01'	164.07'
28	2°39'44"	769.12'	35.74'
29	93°23'15"	25.00'	40.75'
30	8°53'23"	758.12'	117.62'



CROSSWALK DROP SLAB STATIONS  
 0+64.14 39' LT & 34.5' RT  
 0+70.14 39' LT & 34.5' RT

STA 0+00.00 VITRUVIAN WAY=  
 STA 64+74.39 MARSH LANE  
 N 7648.41  
 E 9852.10

STA 0+46.81-VITRUVIAN WAY  
 BEGIN PAVEMENT  
 MATCH EXISTING

SAW CUT ALONG  
 EXIST CONCRETE  
 GUTTER LINE

PI STA 1+38.35, 36.52' RT  
 BEGIN CURB  
 MATCH EXISTING

PI STA 1+98.16, 37.25' RT  
 TC TO MATCH EXIST PAVEMENT

PI STA 2+24.91, 37.79' RT  
 TC TO MATCH EXIST PAVEMENT

PC STA 2+38.65, 36.99' RT  
 PCC STA 2+84.31, 13.18' RT

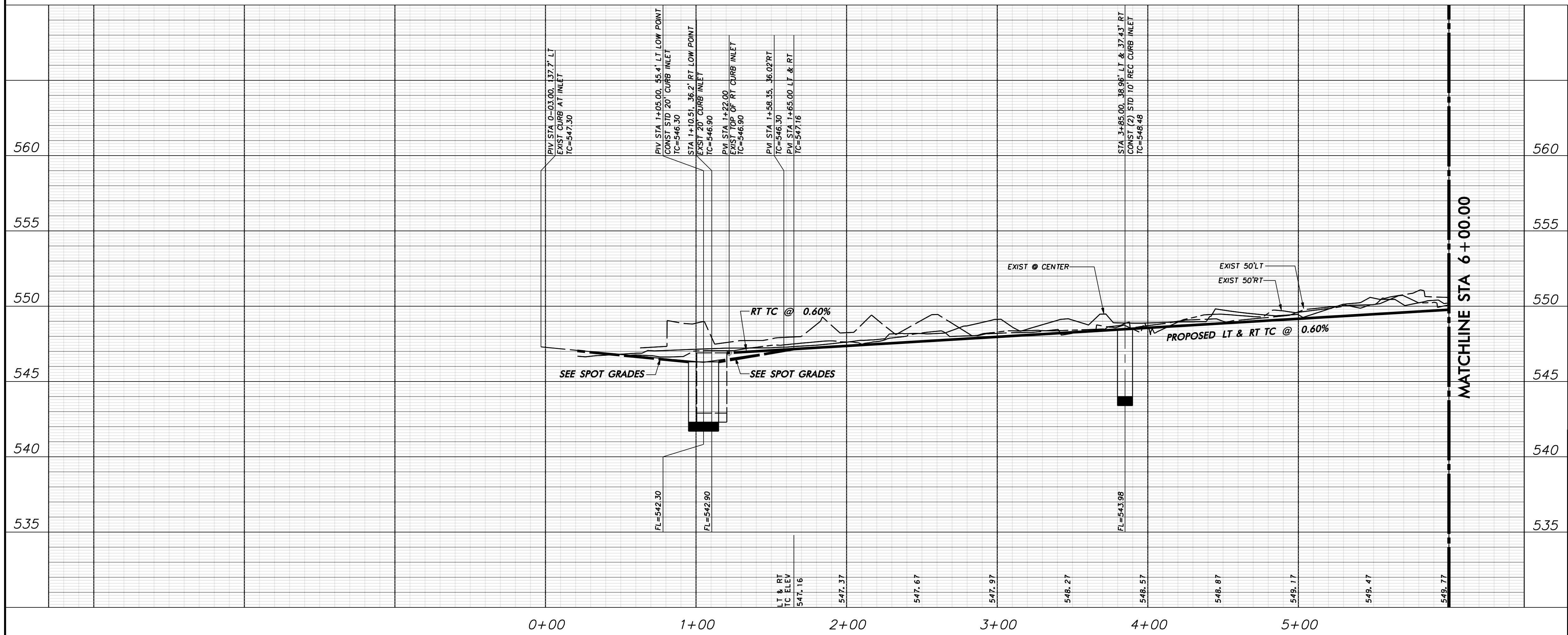
PC STA 3+95.17, 35.34' RT  
 PCC STA 4+04.54, 43.50' RT  
 PT STA 4+03.02, 48.97' RT

PCC STA 3+19.43, 12.96' RT  
 STA 3+85.00, 38.96' LT & 37.43' RT  
 CONST (2) STD 10' REC CURB INLETS

PC STA 4+15.92  
 CENTER OF 24' 6" CONC  
 DRIVE APPROACH RT

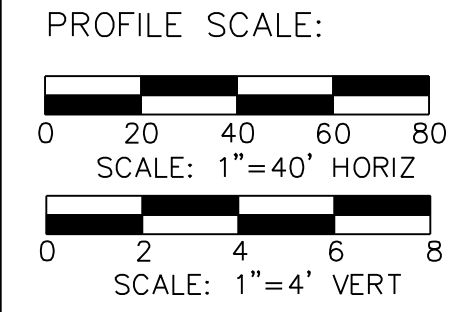
PRC STA 4+10.58, 3.71' RT  
 PCC STA 5+51.53, 0.89' RT  
 PCC STA 5+72.35, 3.39' RT

BROOKTOWN TOWNHOUSES



**WARNING**  
 CONTRACTOR IS TO CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY LOCATING SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. ICON CONSULTING ENGINEERS, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOR FOR DEPICTING THE EXACT LOCATIONS OF UTILITIES ON THESE DRAWINGS.

BM #1 REF. ELEVATION = 559.47  
 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.  
 BM #2 REF. ELEVATION = 547.84  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



*Bruce F. Dunne*  
 BRUCE F. DUNNE  
 62654  
 LICENSED PROFESSIONAL ENGINEER

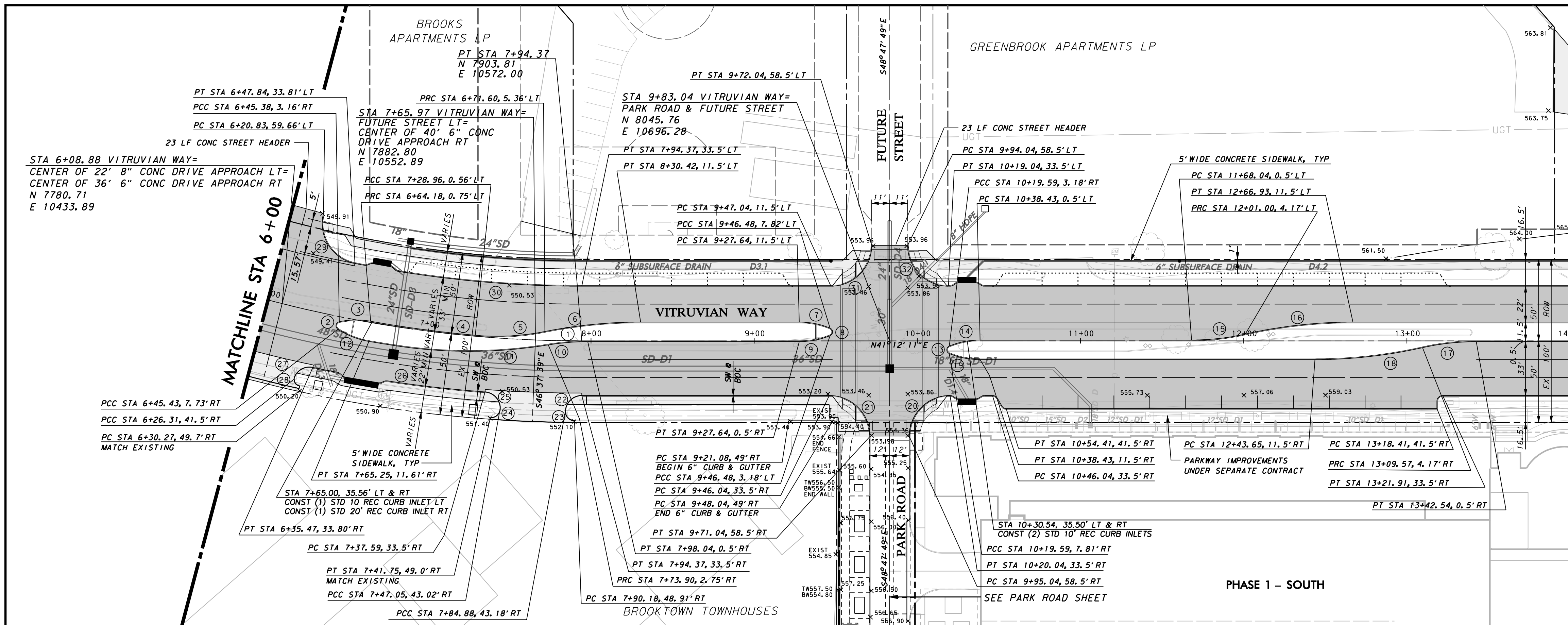
NO. REVISION BY DATE

**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

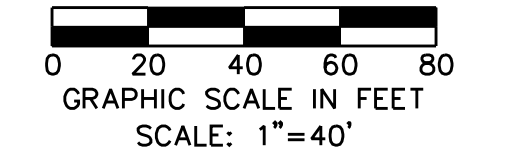
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

PAVING PLAN & PROFILE - VW  
 STA. 0+00.00 TO STA. 6+00.00

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	19		

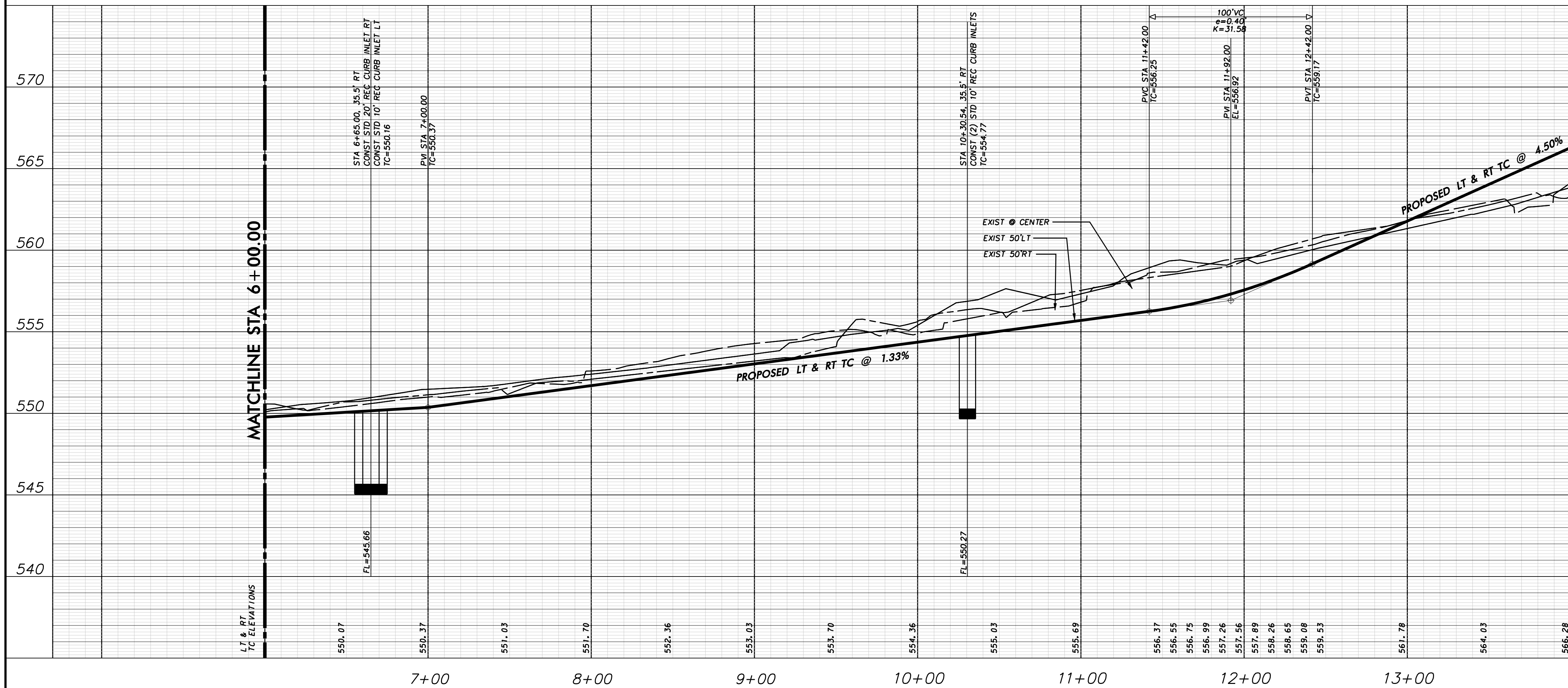


CURVE DATA			
NO	DELTA	RADIUS	LENGTH
1	49°00'01"	750.00'	641.41'
2	134°37'44"	2.50'	5.90'
3	22°10'10"	50.00'	19.35'
4	5°03'19"	733.51'	64.72'
5	16°22'50"	150.00'	42.88'
6	11°16'29"	300.00'	59.03'
7	22°07'57"	50.00'	19.31'
8	135°44'07"	2.50'	5.92'
9	22°07'57"	50.00'	19.31'
10	9°17'23"	150.00'	24.32'
11	17°44'40"	300.00'	92.91'
12	23°35'47"	50.00'	20.59'
13	135°44'07"	50.00'	19.31'
14	22°07'57"	2.50'	5.92'
15	12°41'40"	150.00'	33.23'
16	12°41'40"	300.00'	66.47'
17	12°41'40"	150.00'	33.23'
18	12°41'40"	300.00'	66.47'
19	22°07'57"	50.00'	19.31'
20	90°00'00"	25.00'	39.27'
21	90°00'00"	25.00'	39.27'
22	87°49'60"	10.00'	15.33'
23	91°51'11"	5.65'	9.06'
24	91°51'01"	5.62'	9.00'
25	87°54'21"	10.00'	15.34'
26	4°20'26"	797.01'	106.70'
27	75°59'58"	10.00'	13.26'
28	104°22'26"	4.22'	7.64'
29	92°43'21"	25.00'	40.46'
30	9°15'06"	700.51'	139.96'
31	90°00'00"	25.00'	39.27'
32	90°00'00"	25.00'	39.27'



CROSSWALK DROP SLAB STATIONS

9+54.04	32' LT & 32' RT
9+62.04	32' LT & 32' RT
10+04.04	32' LT & 32' RT
10+12.04	32' LT & 32' RT
9+73.54	49' LT & 55' LT
9+92.54	49' LT & 55' LT
9+72.54	49' RT & 55' RT
9+93.54	49' RT & 55' RT

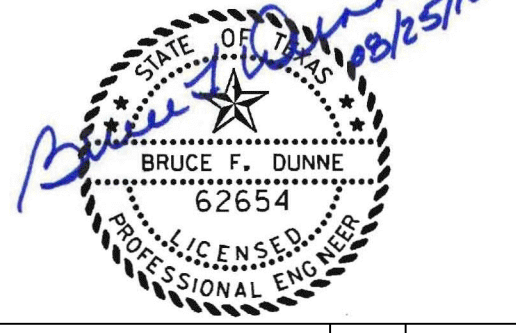
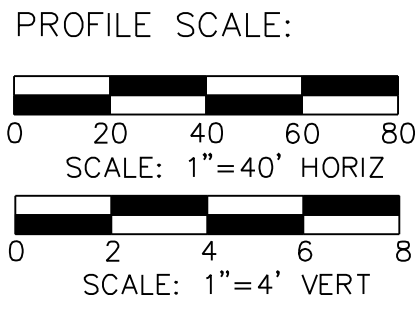


**WARNING**

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BM #1 REF. ELEVATION = 559.47  
 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



REVISION

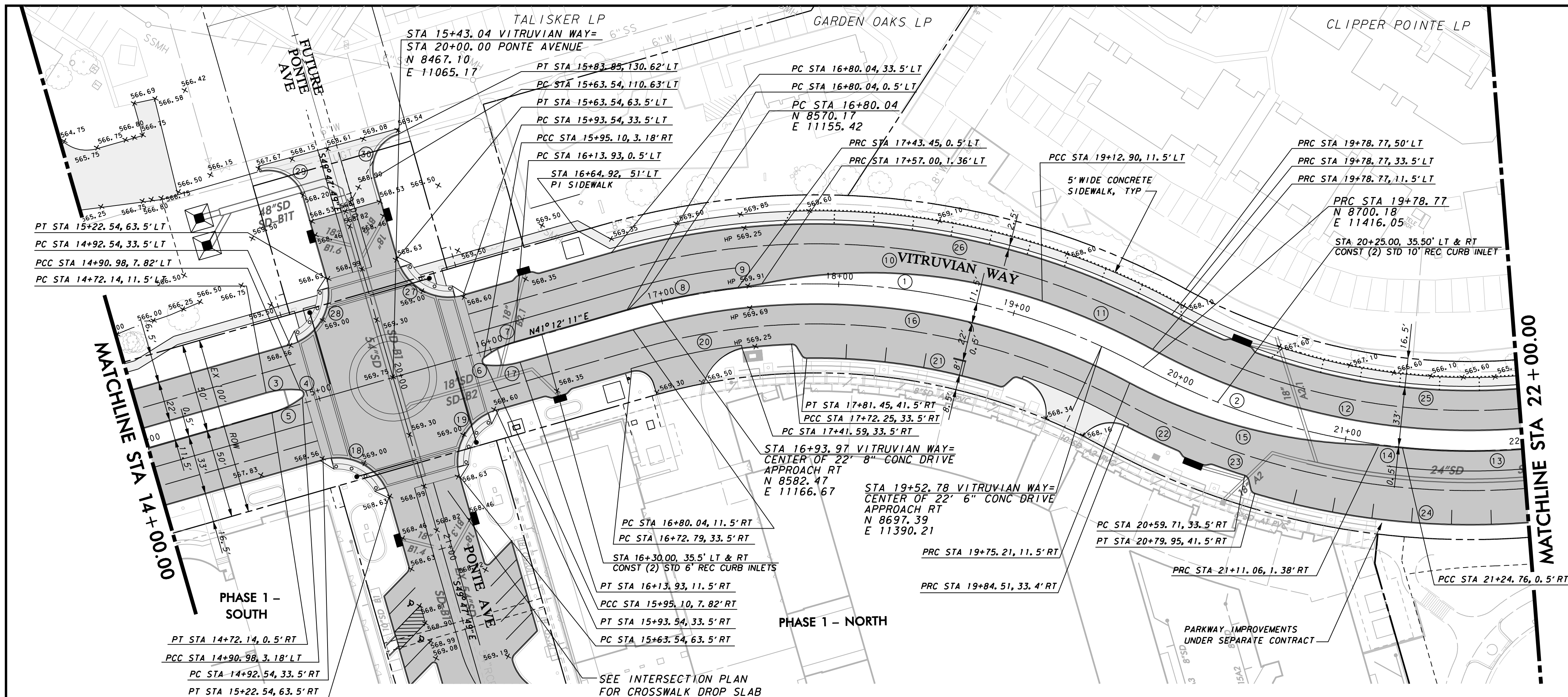
NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

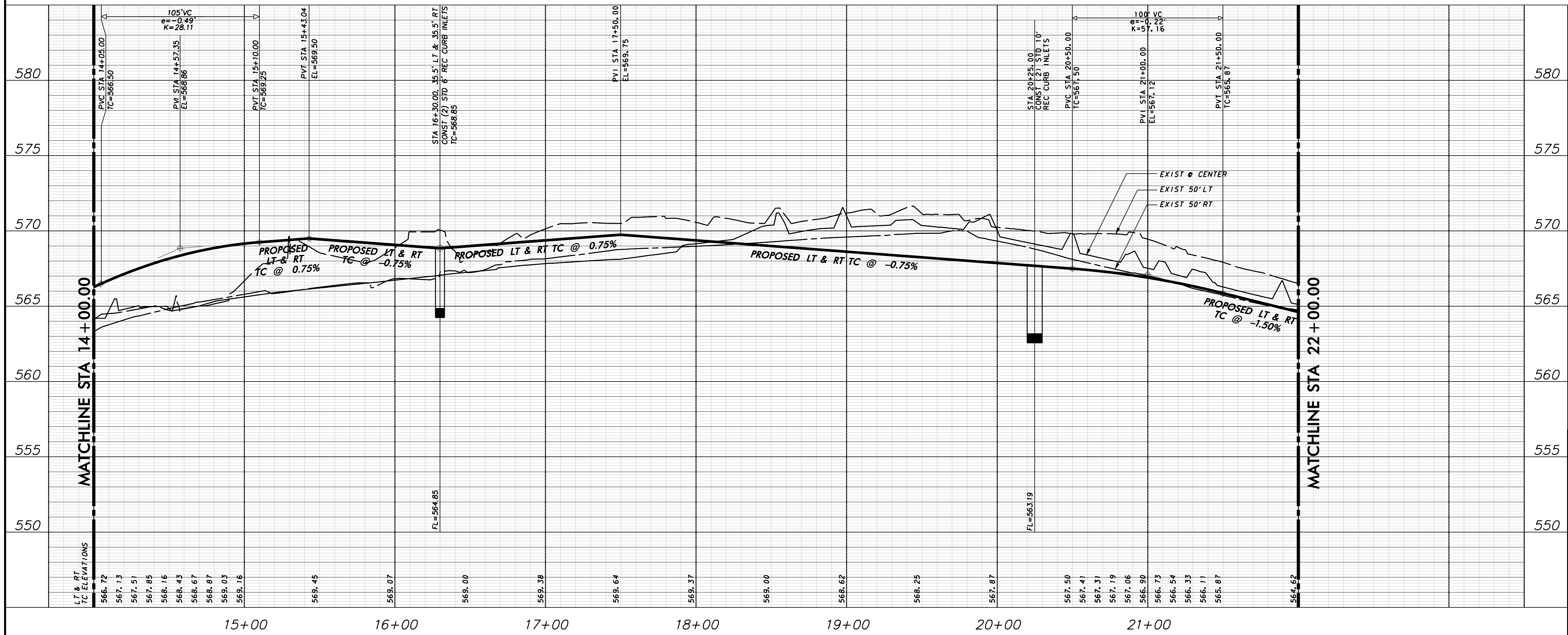
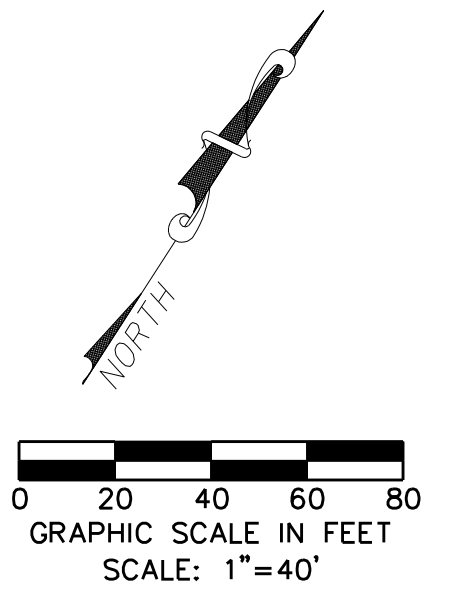
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

PAVING PLAN & PROFILE - VW  
 STA. 6+00.00 TO STA. 14+00.00

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	20		



NO	DELTA	RADIUS	LENGTH
1	44° 34' 23"	384.00'	298.73'
2	59° 28' 36"	384.00'	398.62'
3	22° 07' 57"	50.00'	19.31'
4	135° 44' 07"	2.50'	5.92'
5	22° 07' 57"	50.00'	19.31'
6	135° 44' 07"	2.50'	5.92'
7	22° 07' 57"	50.00'	19.31'
8	9° 27' 44"	384.51'	63.50'
9	5° 12' 01"	150.00'	13.61'
10	30° 28' 56"	300.00'	159.60'
11	09° 49' 44"	395.50'	67.85'
12	41° 11' 29"	372.50'	267.80'
13	19° 05' 30"	384.50'	128.12'
14	5° 15' 30"	150.00'	13.77'
15	26° 30' 32"	300.00'	138.80'
16	44° 02' 30"	372.51'	286.33'
17	22° 07' 57"	50.00'	19.31'
18	90° 00' 00"	30.00'	47.12'
19	90° 00' 00"	30.00'	47.12'
20	10° 04' 41"	350.50'	61.65'
21	33° 07' 20"	342.50'	198.00'
22	6° 02' 18"	425.50'	31.38'
23	1° 59' 07"	417.50'	49.30'
24	27° 10' 21"	425.50'	201.79'
25	45° 47' 33"	350.50'	355.52'
26	44° 34' 23"	417.50'	324.80'
27	90° 00' 00"	30.00'	47.12'
28	90° 00' 00"	30.00'	47.12'
29	89° 06' 14"	20.00'	31.10'
30	90° 53' 46"	20.00'	31.73'

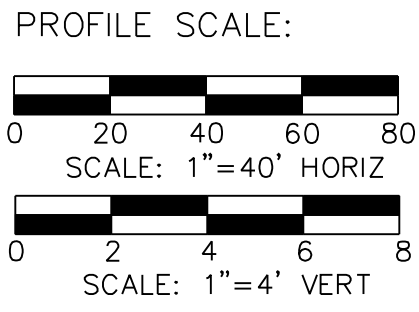


**WARNING**

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BM #1 REF. ELEVATION = 559.47  
 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

**ADDISON** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

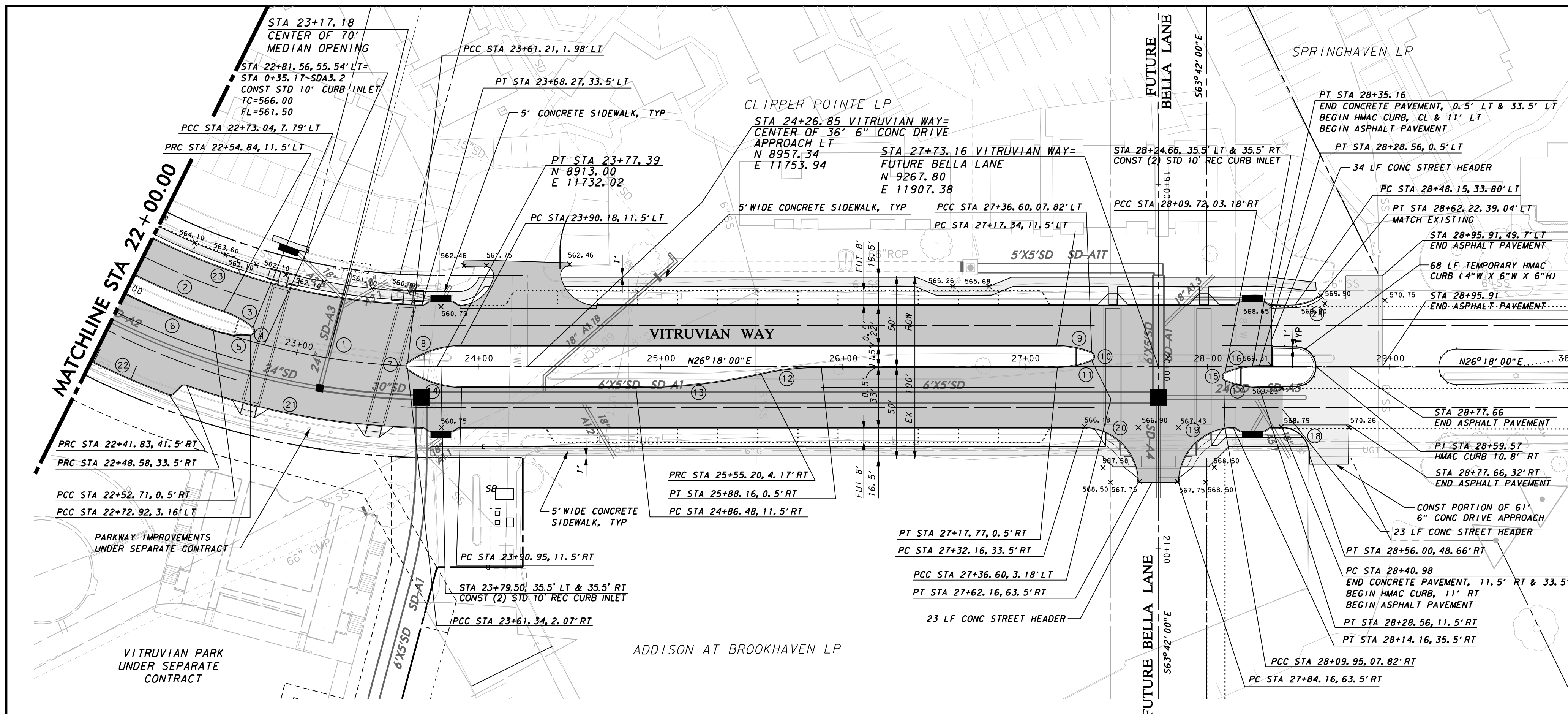
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**PAVING PLAN & PROFILE - VW**  
 STA. 14+00.00 TO STA. 22+00.00

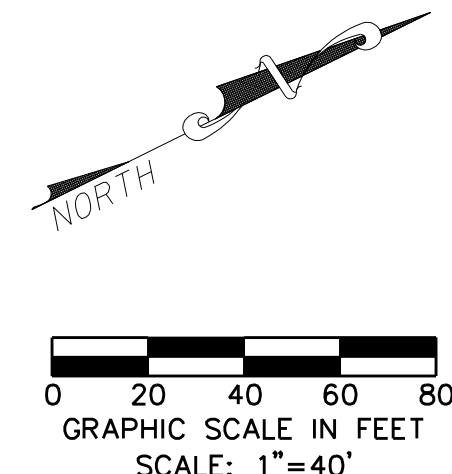
**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	21

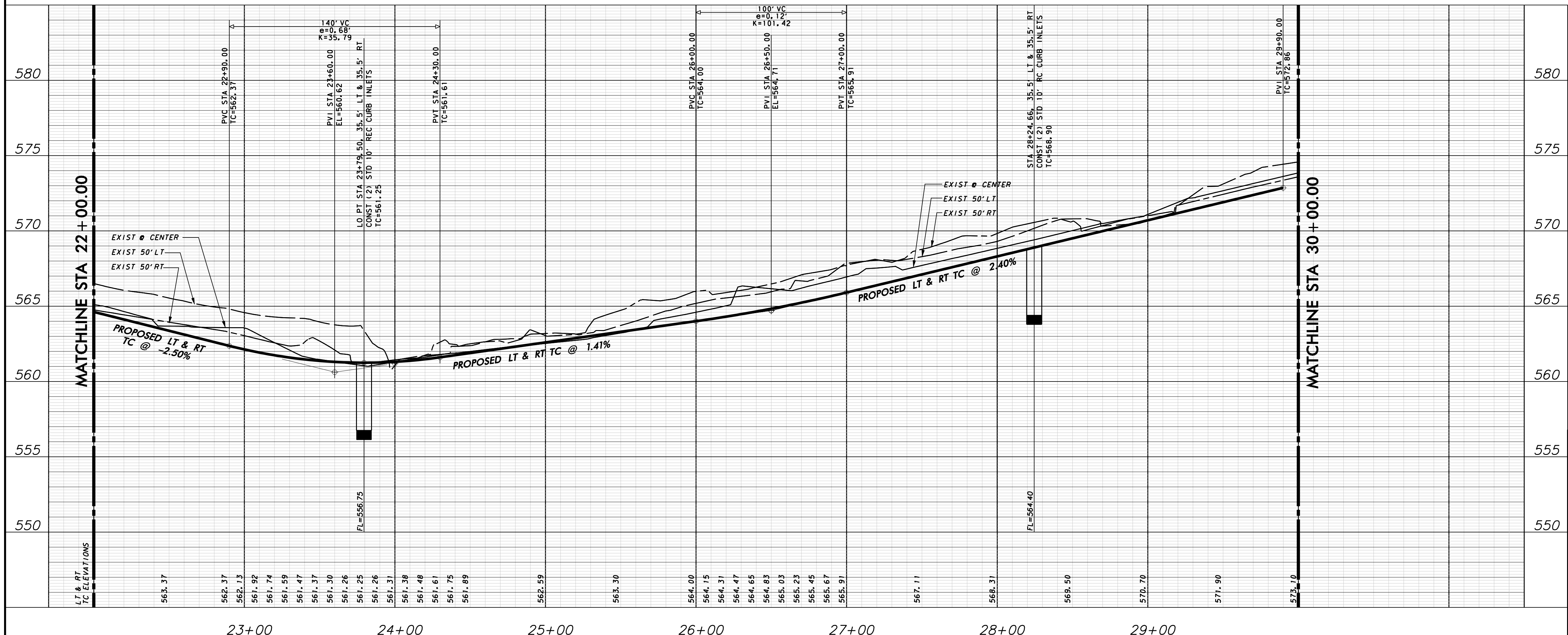
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



NO	DELTA	RADIUS	LENGTH
1	59°28'36"	384.00'	398.62'
2	42°11'29"	372.50'	267.80'
3	20°53'08"	50.00'	18.23'
4	135°48'52"	2.50'	5.93'
5	23°37'04"	50.00'	20.61'
6	19°05'30"	384.50'	128.12'
7	108°18'10"	2.50'	4.73'
8	35°16'24"	50.00'	30.78'
9	22°07'57"	50.00'	19.31'
10	135°44'07"	2.50'	5.92'
11	22°07'57"	50.00'	19.31'
12	12°41'40"	150.00'	33.23'
13	12°41'40"	300.00'	66.47'
14	36°25'26"	50.00'	31.79'
15	135°44'07"	2.50'	5.92'
16	22°07'57"	50.00'	19.31'
17	22°07'57"	50.00'	19.31'
18	90°37'18"	15.00'	23.73'
19	90°00'00"	30.00'	47.12'
20	90°00'00"	30.00'	47.12'
21	14°55'09"	417.50'	107.63'
22	27°10'21"	425.50'	201.79'
23	45°47'33"	350.40'	280.13'
24	38°08'22"	24.47'	15.29'



CROSSWALK DROP	SLAB STATIONS
22+78.52	32' RT
22+78.70	32' LT
22+85.91	32' LT
22+87.43	32' RT
23+42.52	32' RT
23+50.03	32' RT
23+54.49	32' LT
23+63.42	32' LT
27+44.16	32' LT & 32' RT
27+52.16	32' LT & 32' RT
27+94.16	32' LT & 32' RT
28+02.16	32' LT & 32' RT

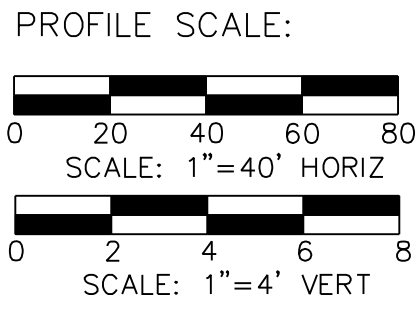


**WARNING**

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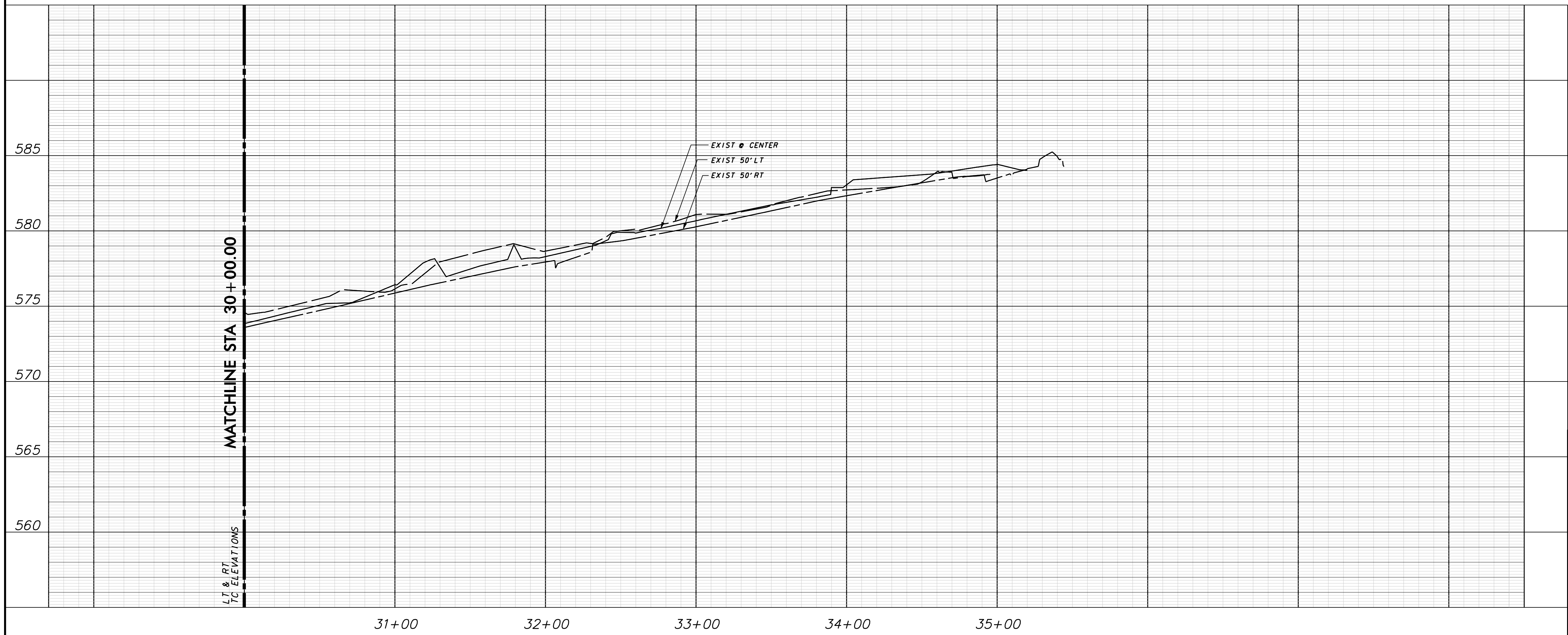
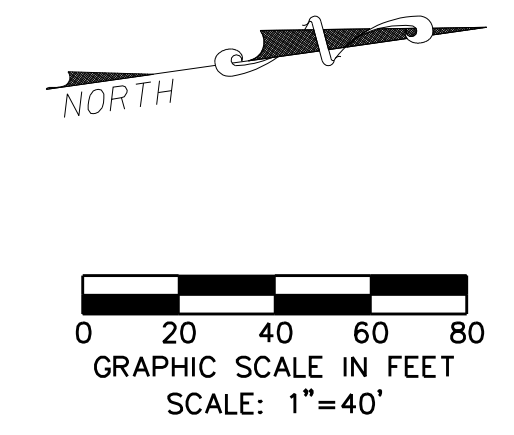
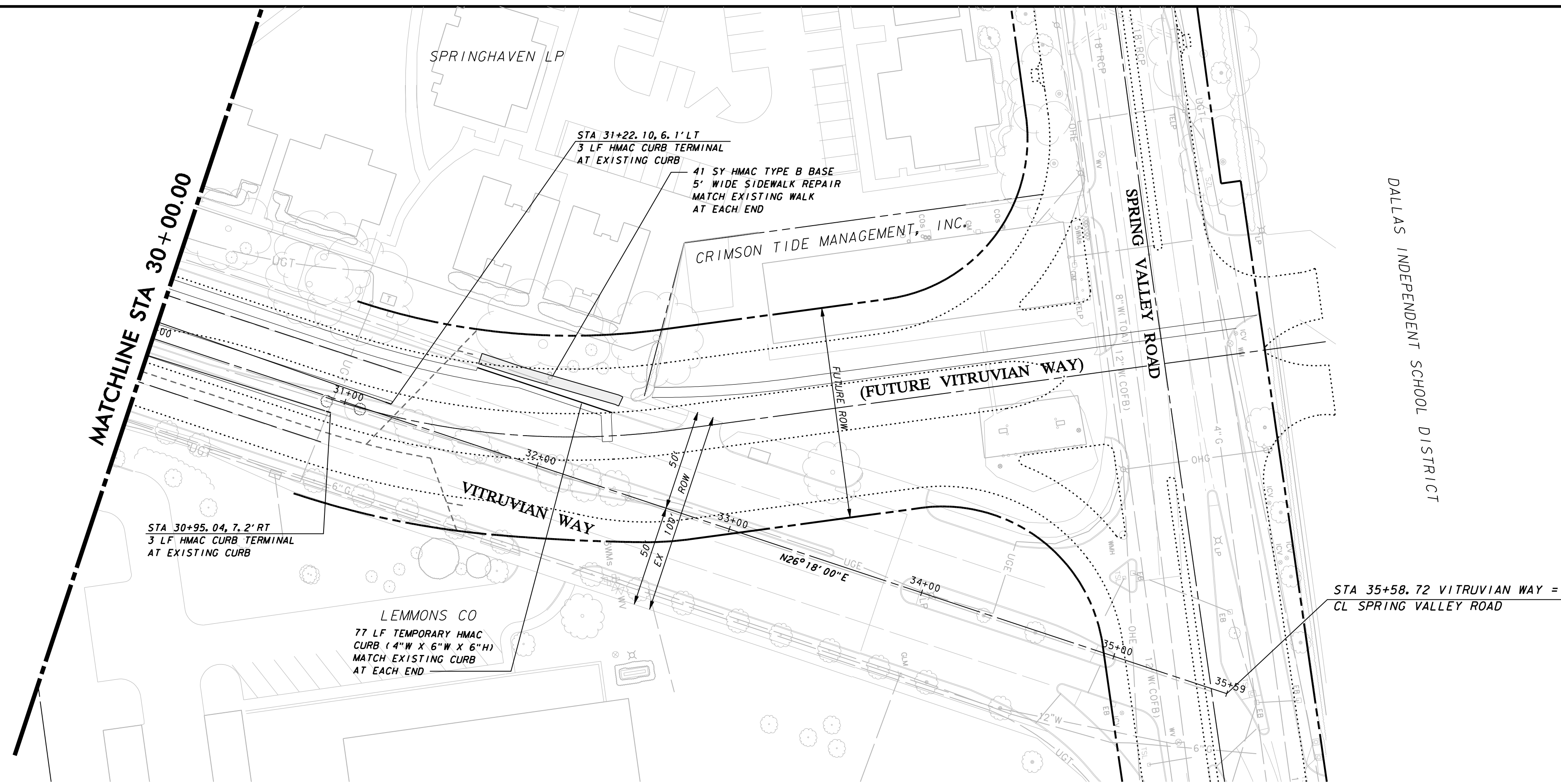
BM #1 REF. ELEVATION = 559.47  
 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO.		REVISION	BY	DATE
<b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS				
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY & PONTE AVENUE				
<b>PAVING PLAN &amp; PROFILE - VW</b> STA. 22+00.00 TO STA. 30+00.00				
<b>icon</b>		Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210
PROJECT	DESIGN	DRAWN	DATE	FILE SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01 22

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

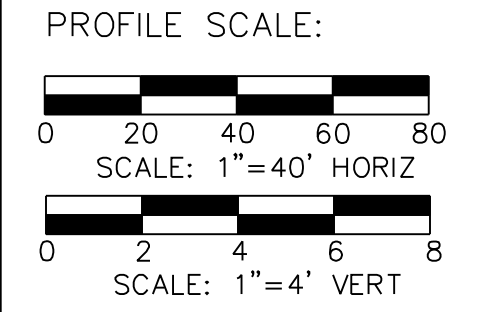


**WARNING**

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 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

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 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

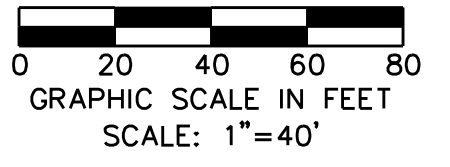
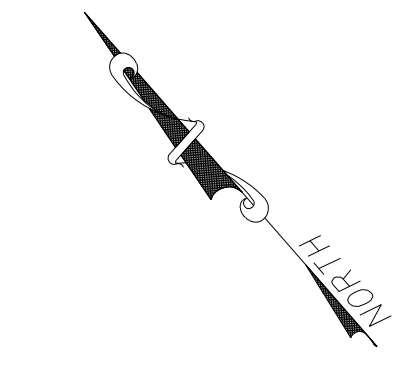
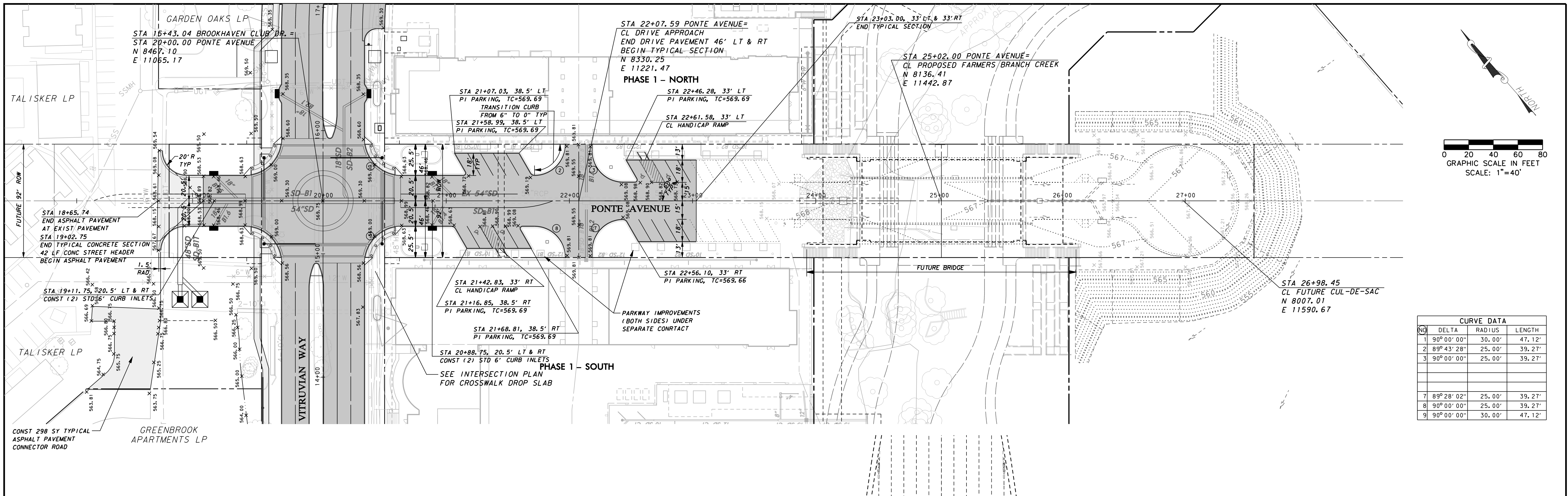
**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE

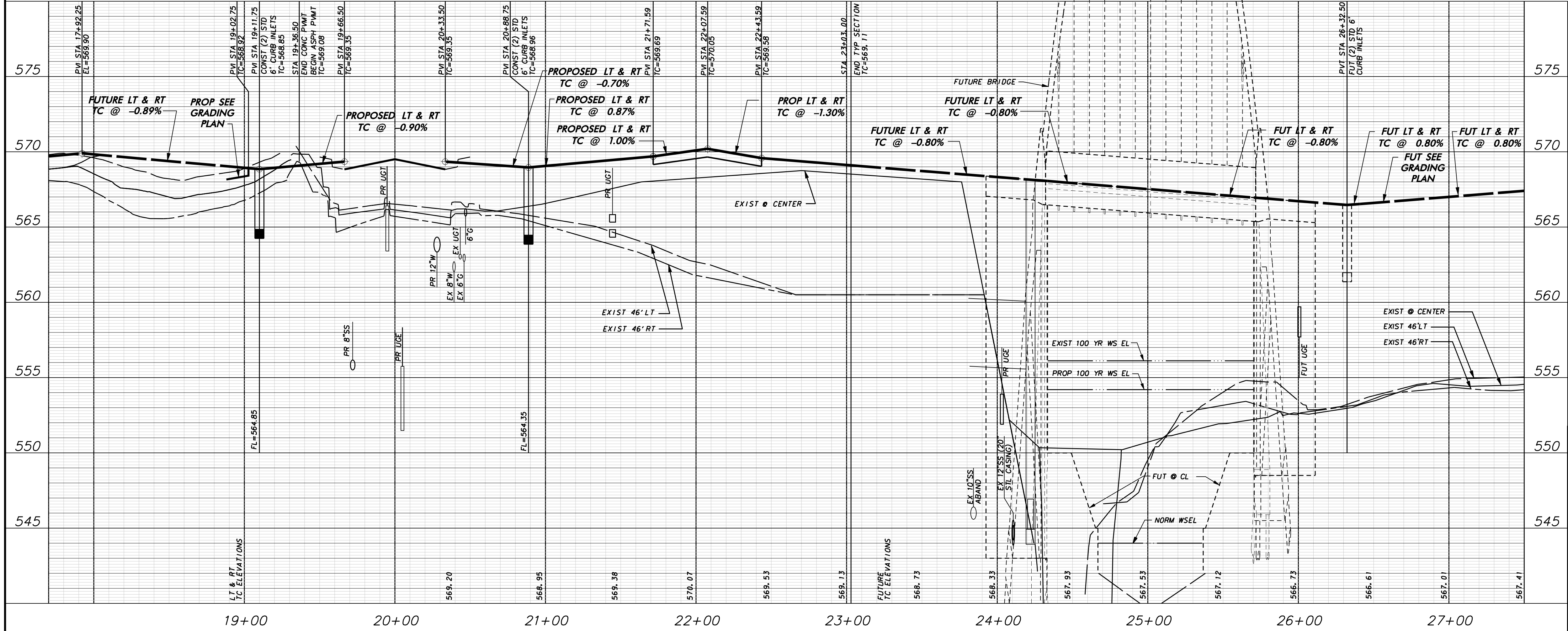
**PAVING PLAN & PROFILE - VW**  
 STA. 30+00.00 TO STA.

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117			
Civil Engineers - Designers - Planners		Southlake, Tx 76092 (817) 552-6210			
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	23

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



CURVE DATA			
NO	DELTA	RADIUS	LENGTH
1	90°00'00"	30.00'	47.12'
2	89°43'28"	25.00'	39.27'
3	90°00'00"	25.00'	39.27'
7	89°28'02"	25.00'	39.27'
8	90°00'00"	25.00'	39.27'
9	90°00'00"	30.00'	47.12'

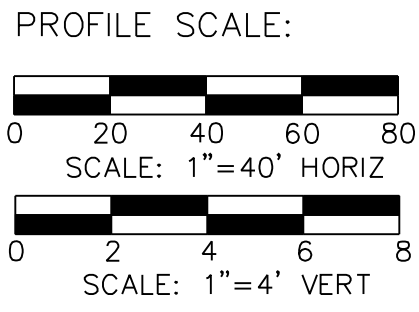


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 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



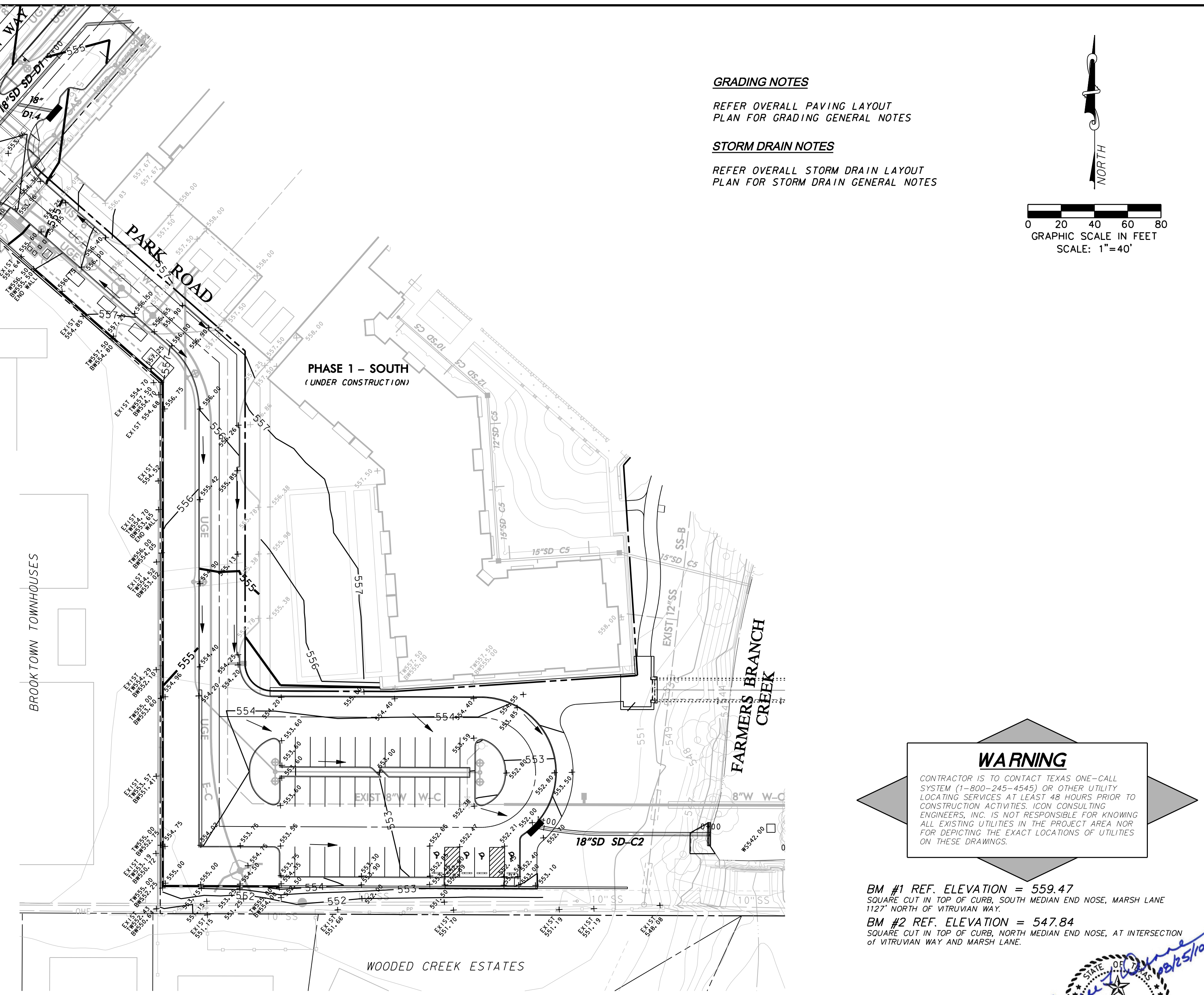
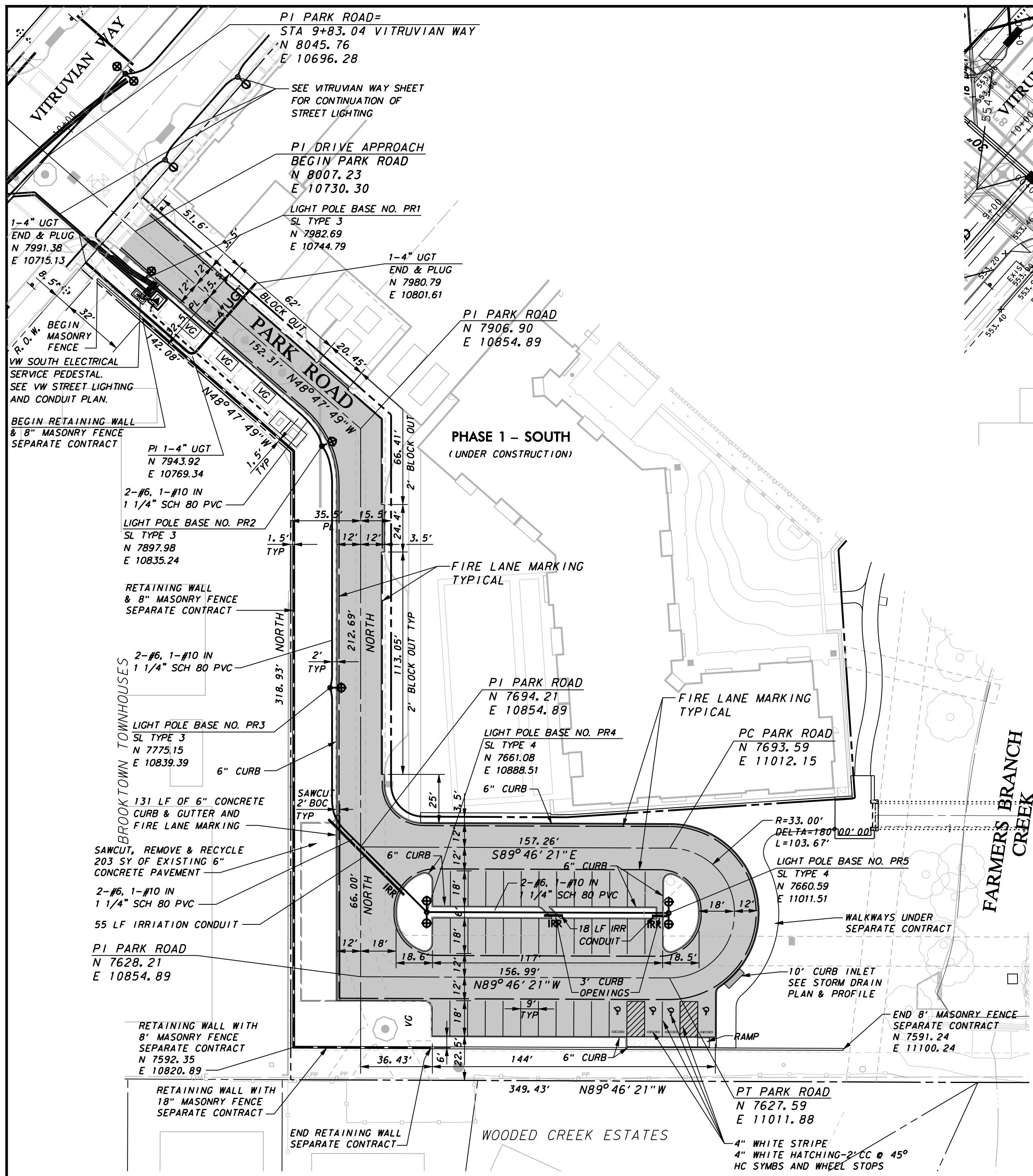
**ADDISON** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**PAVING PLAN & PROFILE - PA**  
 STA 19+02.75 TO STA 26+41.00

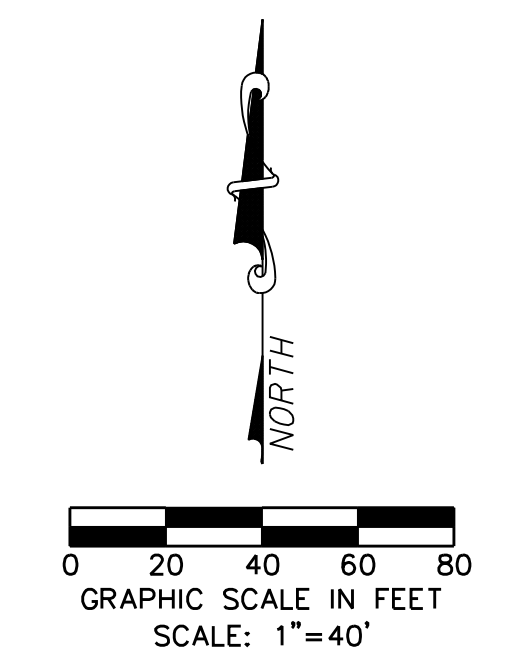
<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	24		





**GRADING NOTES**  
REFER OVERALL PAVING LAYOUT PLAN FOR GRADING GENERAL NOTES

**STORM DRAIN NOTES**  
REFER OVERALL STORM DRAIN LAYOUT PLAN FOR STORM DRAIN GENERAL NOTES



**WARNING**

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BM #1 REF. ELEVATION = 559.47  
SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



LAYOUT, DIMENSION, PAVING, STREET LIGHT & CONDUIT PLAN

GRADING & DRAINAGE PLAN

**GRADING & PAVING NOTES**  
REFER OVERALL PAVING LAYOUT PLAN FOR GRADING & PAVING GENERAL NOTES

**PAVEMENT JOINTING NOTES**  
REFER OVERALL PAVING LAYOUT PLAN FOR PAVEMENT JOINTING GENERAL NOTES

**LAYOUT & DIMENSIONAL CONTROL PLAN**  
REFER OVERALL PAVING LAYOUT PLAN FOR LAYOUT & DIMENSIONAL CONTROL GENERAL NOTES

**STREET LIGHTING AND CONDUIT NOTES**  
REFER TO STREET LIGHT AND CONDUIT PLANS FOR STREET LIGHT AND CONDUIT NOTES

**PAVEMENT MARKINGS & SIGNAGE**  
REFER TO OVERALL VW & PA PAVEMENT MARKING PLANS FOR PAVEMENT MARKING & SIGNAGE NOTES

**LEGEND**

**STANDARD DUTY PAVEMENT:**  
6" (4200 PSI AT 28 DAYS) CONCRETE PAVT. W/ #3 BARS @ 24" O.C.E.W. ON 6" COMPACTED SUBGRADE TO 95% AT OR ABOVE OPTIMUM MOISTURE CONTENT (ASTM D 698) WITH 6" CURB.

**SIDEWALK & FLATWORK:**  
4" REINFORCED CONCRETE SIDEWALKS & FLATWORK (3000 PSI AT 28 DAYS) W/ #3 BARS @ 18" O.C.E.W. ON 6" COMPACTED SUBGRADE TO 95% AT OR ABOVE OPTIMUM MOISTURE CONTENT (ASTM D 698). REFERENCE LANDSCAPE PLANS.

**NOTE**  
FIRELANE MARKING SHALL CONSIST OF 4" SOLID RED STRIPE WITH "NO PARKING - FIRE LANE" STENCILED IN WHITE PAINT AT 25' INTERVALS.

**STREET LIGHT LEGEND**

PVC CONDUIT (LIGHTING) ———

PVC CONDUIT (POWER) ———

TRANSFORMER ON PAD \* [Symbol]

STREET LIGHT - 400W [Symbol]

STREET LIGHT - FUTURE 400W [Symbol]

STREET LIGHT - 100W [Symbol]

STREET LIGHT - FUTURE 100W [Symbol]

DUPLEX 20A GFI RECEPTACLE [Symbol]

\* PROVIDE!

NO.	REVISION	BY	DATE

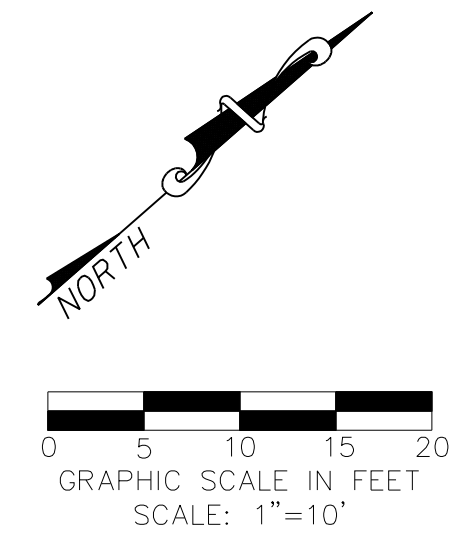
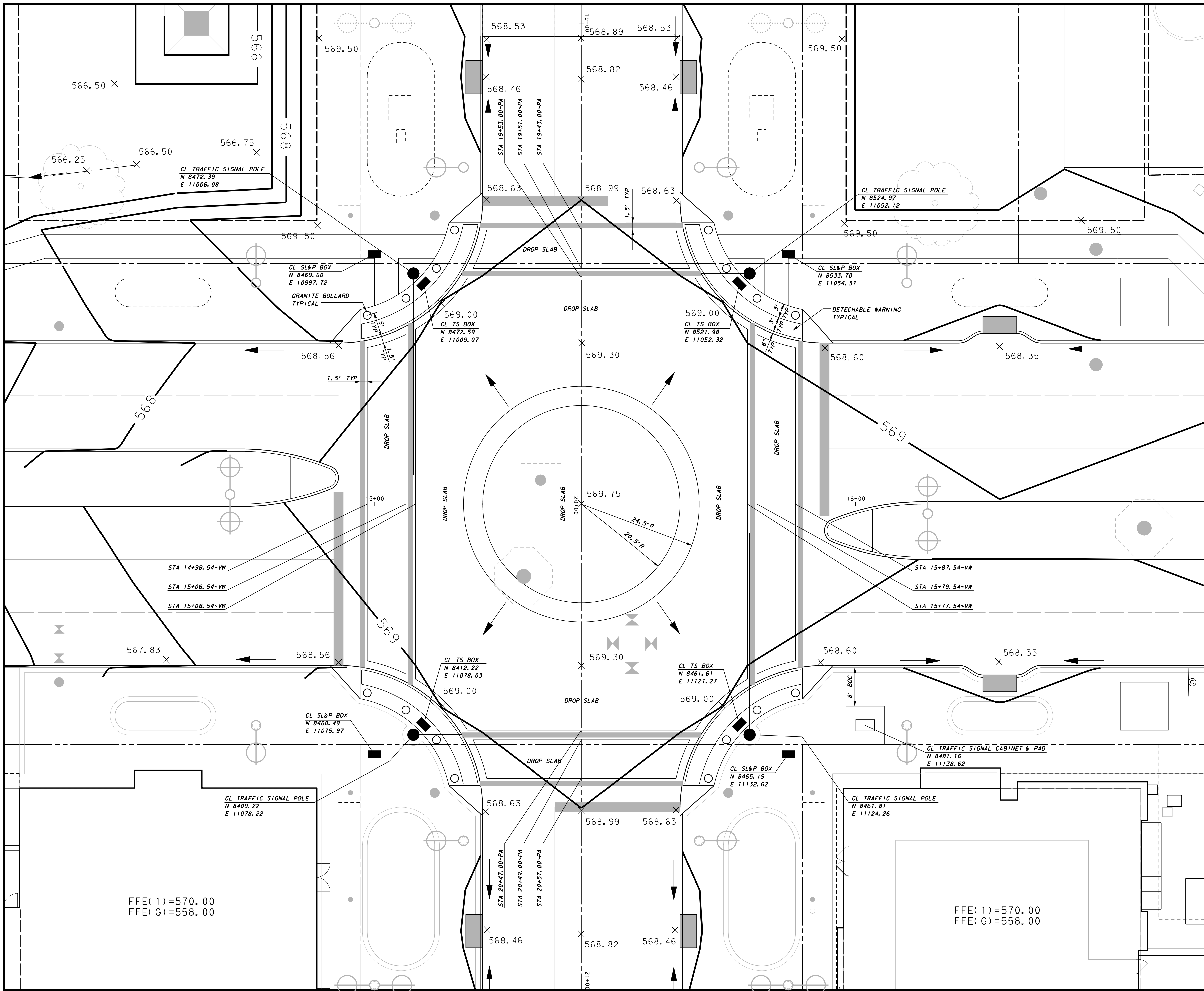
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DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY & PONTE AVENUE

**PAVING, CONDUIT, GRADING & DRAINAGE**  
PARK ROAD

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Civil Engineers - Designers - Planners		Southlake, Tx 76092 (817) 552-6210			
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	25

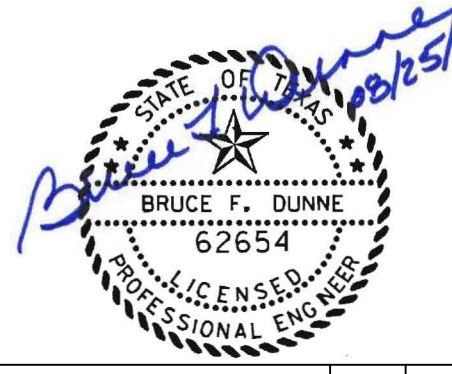
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



REFERENCE LANDSCAPE PLANS FOR PAVEMENT LAYOUT

**WARNING**  
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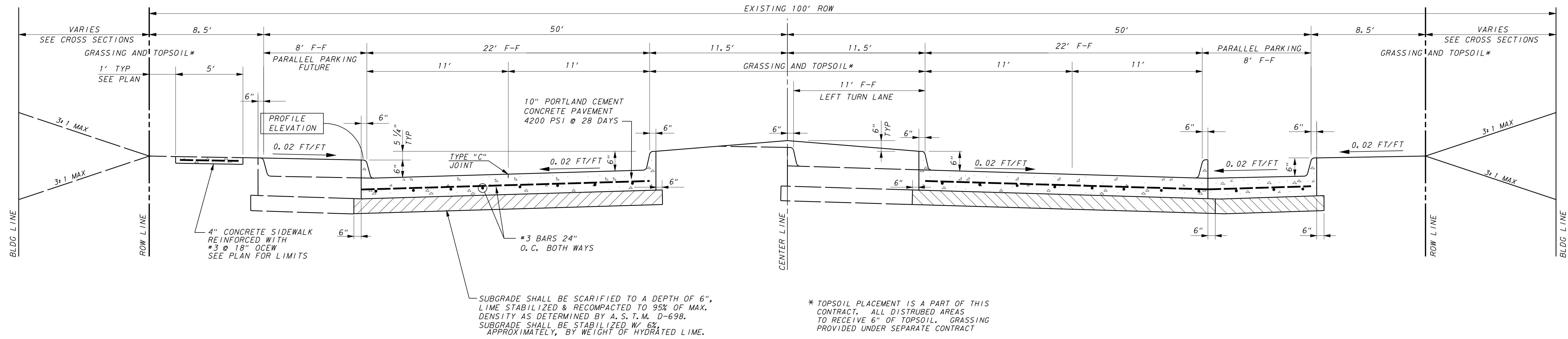
NO.	REVISION	BY	DATE

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 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

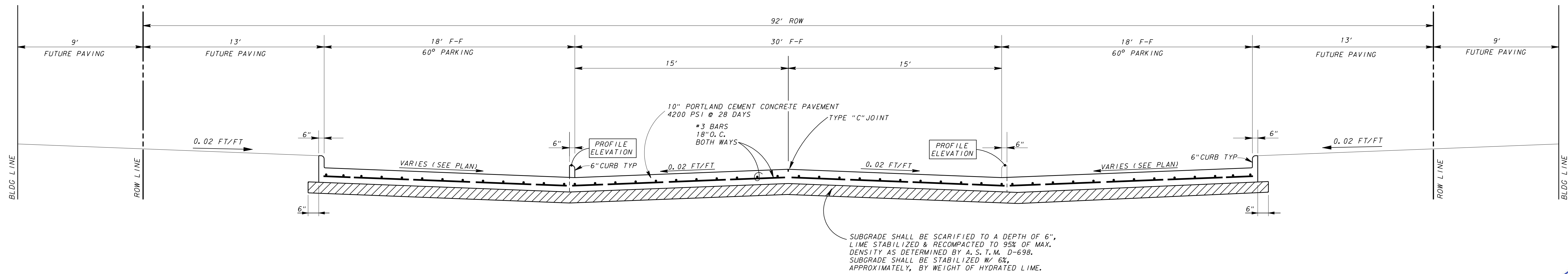
**INTERSECTION PLAN**

<b>icon</b> Consulting Engineers, Inc. Civil Engineers - Designers - Planners		250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210			
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	26

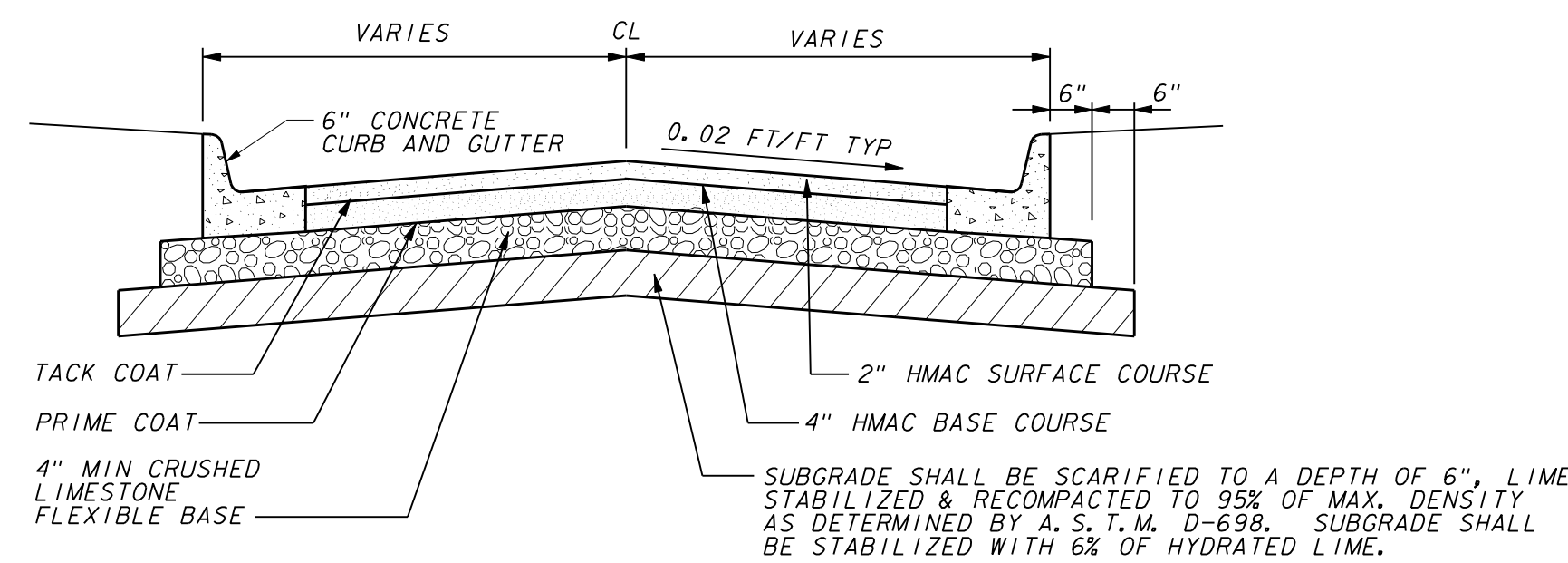
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



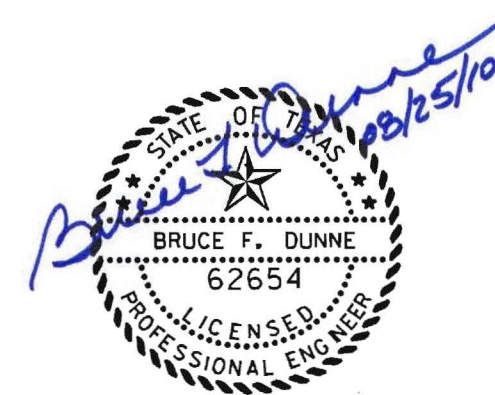
**TYPICAL SECTION - VITRUVIAN WAY**  
NOT TO SCALE



**TYPICAL SECTION - PONTE AVENUE**  
NOT TO SCALE



**TYPICAL SECTION FOR PERMANENT ASPHALT PAVEMENT**  
NOT TO SCALE



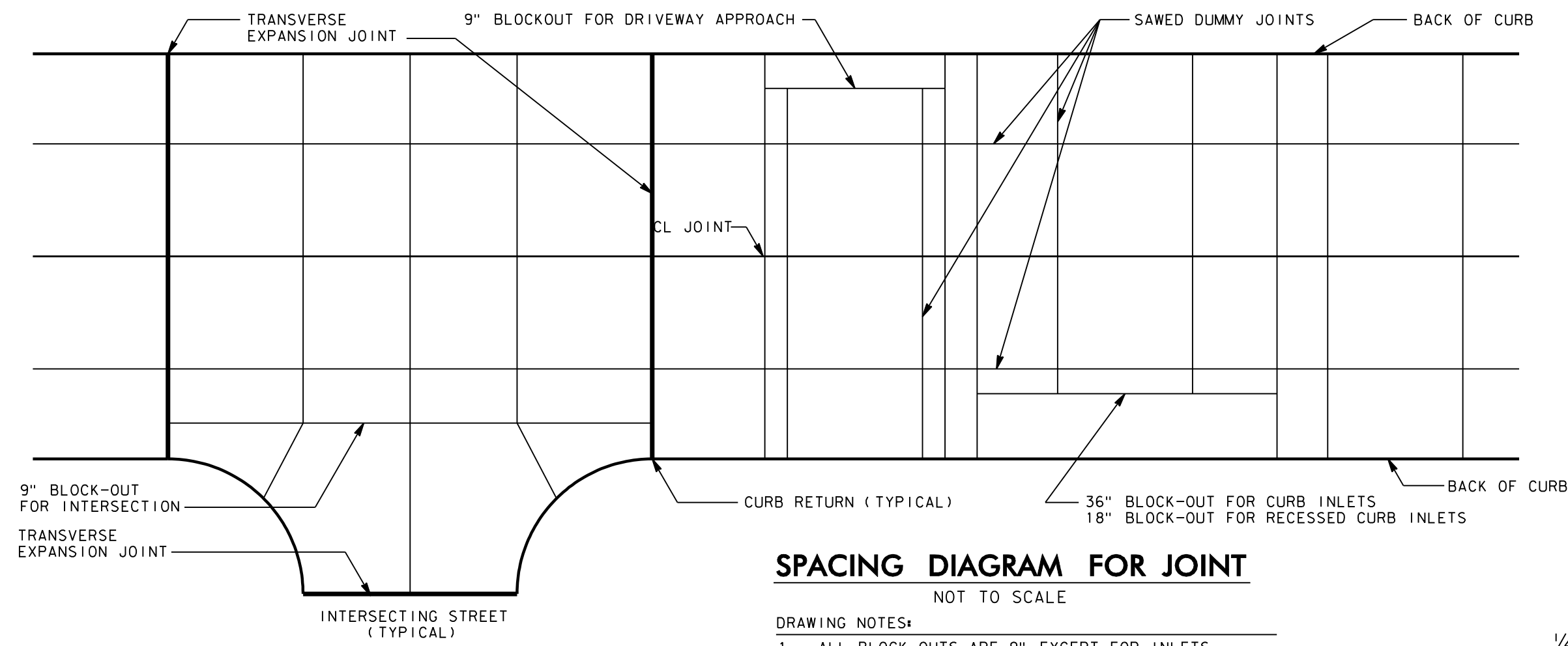
NO.	REVISION	BY	DATE

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PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**PAVEMENT SECTIONS**

PROJECT		DESIGN		DRAWN		DATE		FILE		SHEET	
5029-01	ICE	ICE	MAY 7 2009	ICE	ICE	ICE	MAY 7 2009	PW# 2009-01		27	

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



**SPACING DIAGRAM FOR JOINT**  
NOT TO SCALE

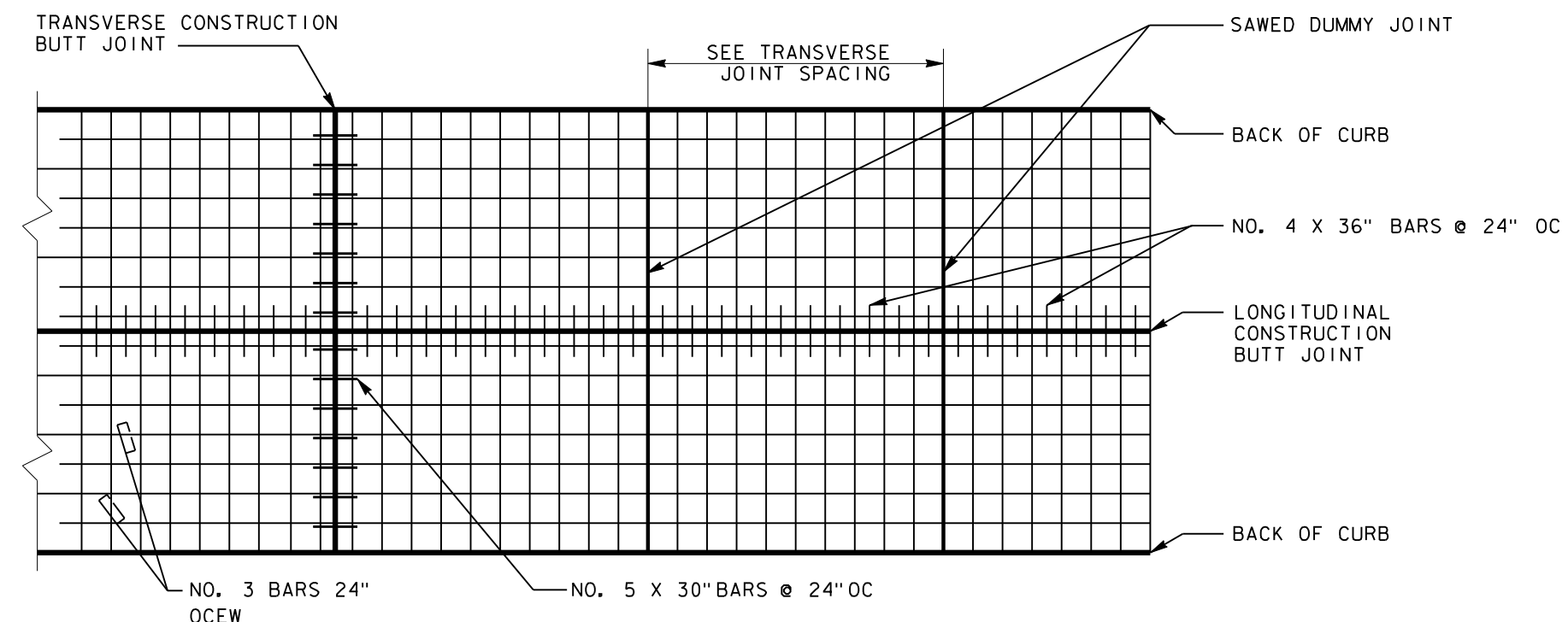
- DRAWING NOTES:
1. ALL BLOCK-OUTS ARE 9" EXCEPT FOR INLETS.
  2. END OF EACH BLOCK-OUT TO HAVE TRANSVERSE JOINT.

TRANSVERSE JOINT SPACING	
PAVEMENT THICKNESS	SPACING
T = 5"	10 FEET
T = 6"	12 FEET
T = 7"	14 FEET
T = 8"	16 FEET

LONGITUDINAL JOINT SPACING	
STREET WIDTH	SPACING
22' TO 30'	ON CL
36' & 40'	ON CL & 8' FROM BACK OF CURB
38'	6' LT & RT OFF CL
44'	ON CL AND 11' OFF CL
48'	ON CL AND 12' OFF CL
60'	6' AND 18' OFF CL
76'	8', 20' AND 32' OFF CL

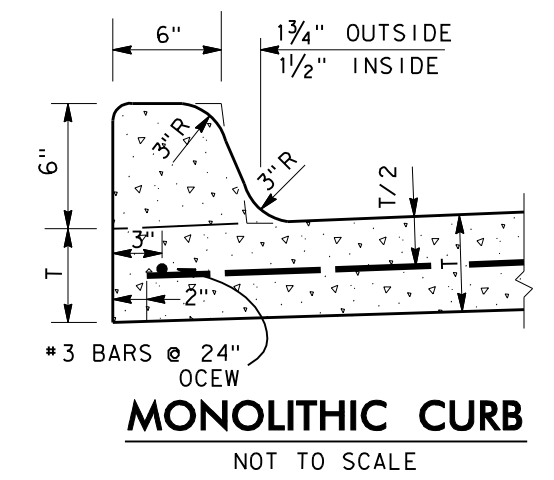
JOINT DEPTH	
PAVEMENT THICKNESS	JOINT DEPTH
T = 5"	1 1/4"
T = 6"	1 1/2"
T = 7"	1 3/4"
T = 8"	2"

TRANSVERSE EXPANSION JT SPACING	
VARIES (200' C-C MAXIMUM)	

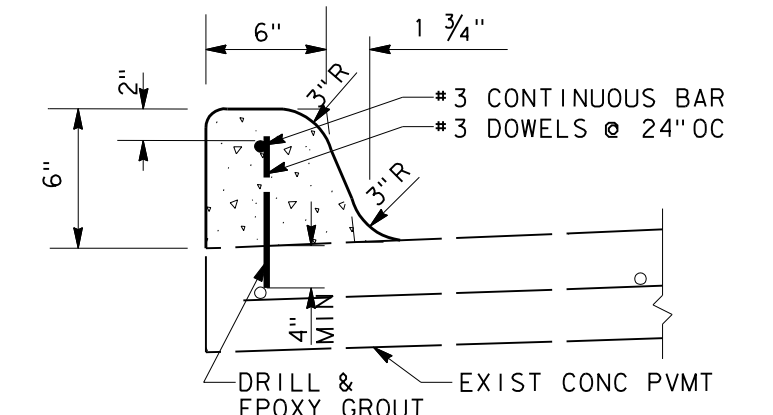


**PLAN OF STEEL LAYOUT**  
NOT TO SCALE

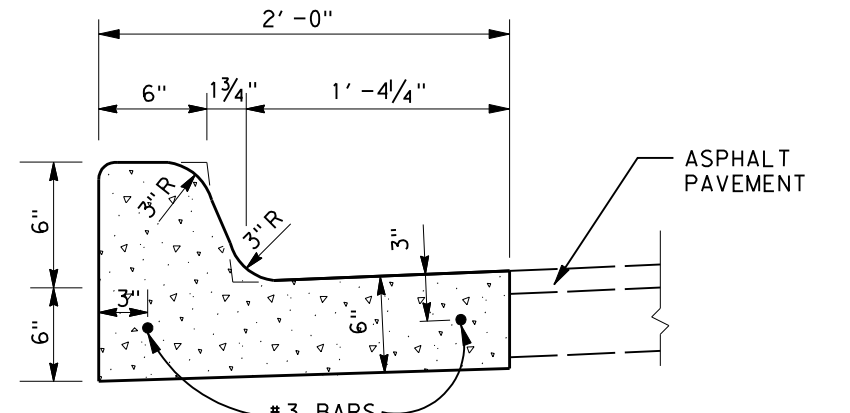
- DRAWING NOTES:
1. THE REINFORCING STEEL WILL EXTEND THROUGH LONGITUDINAL CONSTRUCTION BUTT, SAWED DUMMY, AND TRANSVERSE CONSTRUCTION BUTT JOINTS.



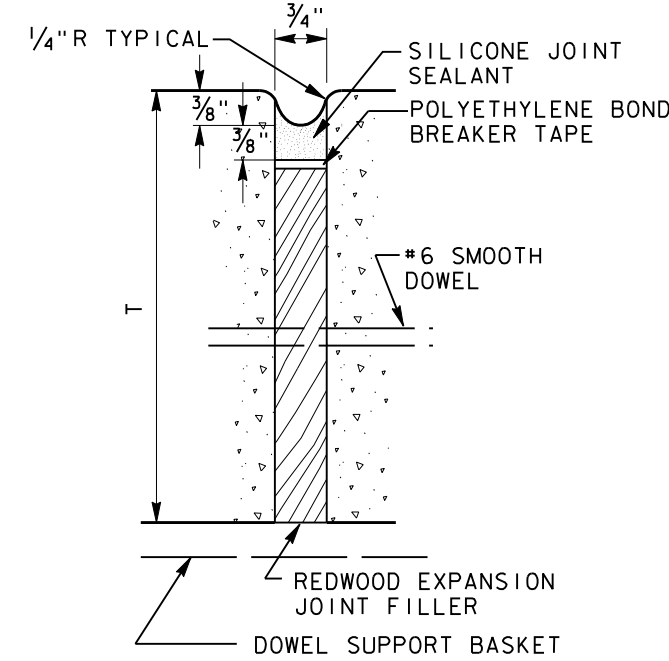
**MONOLITHIC CURB**  
NOT TO SCALE



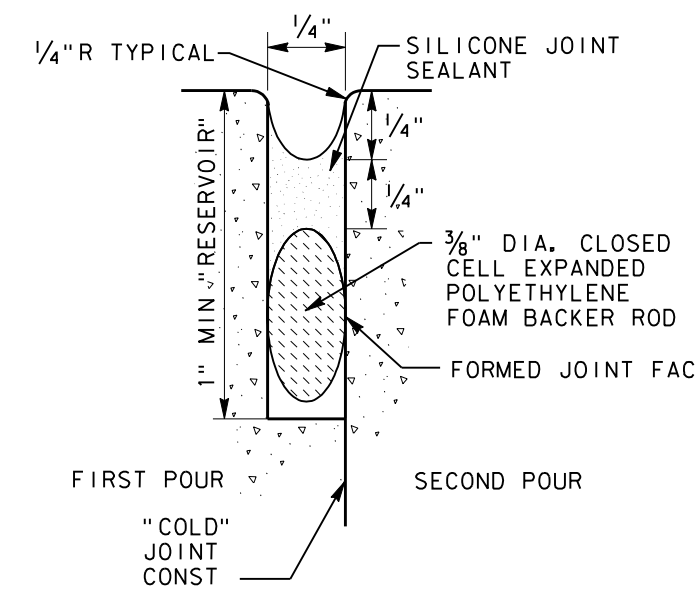
**ATTACHED CURB**  
NOT TO SCALE



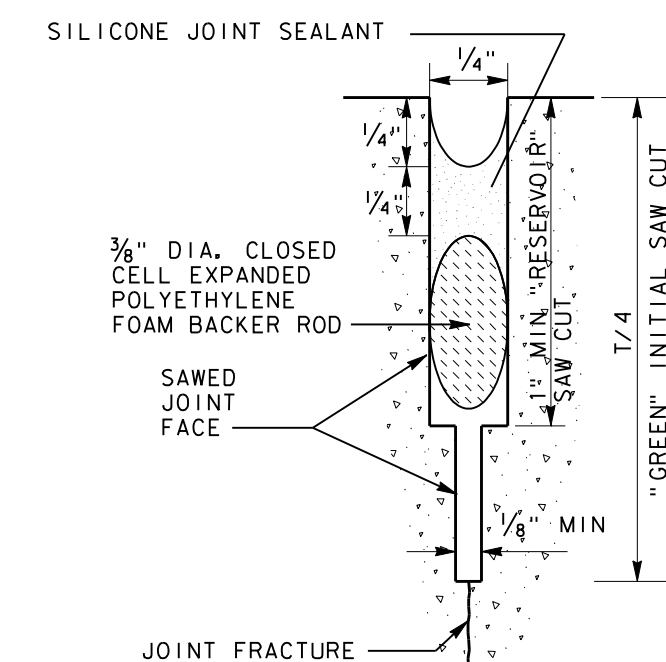
**6" CURB AND GUTTER**  
NOT TO SCALE



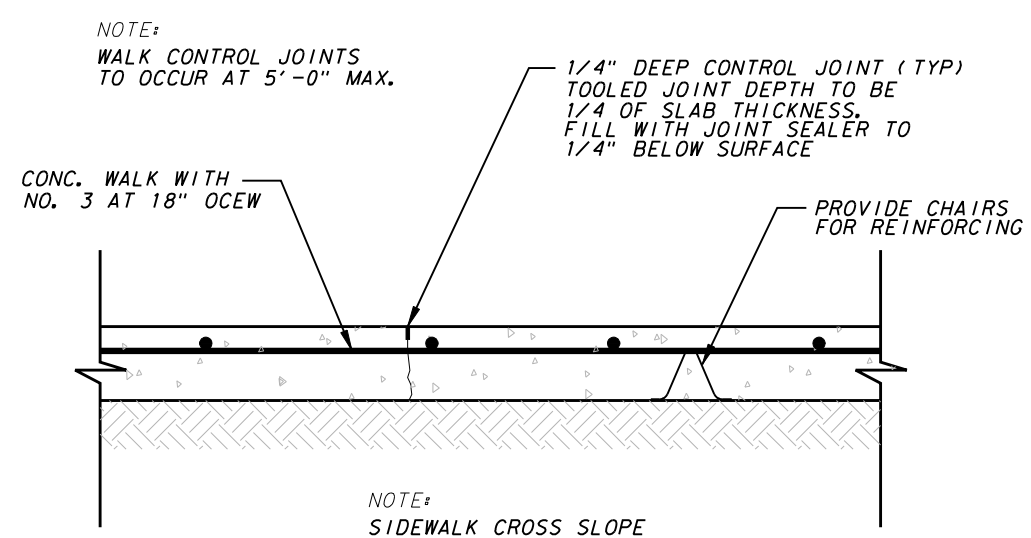
**JOINT DETAIL A SEAL FOR TRANSVERSE EXPANSION JOINT**  
NOT TO SCALE



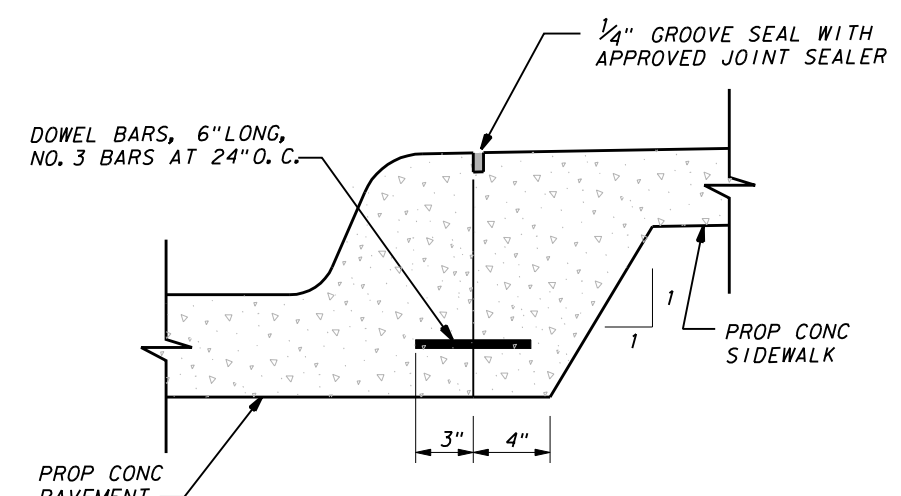
**JOINT DETAIL B SEAL FOR LONGITUDINAL AND TRANSVERSE CONSTRUCTION BUTT JOINT**  
NOT TO SCALE



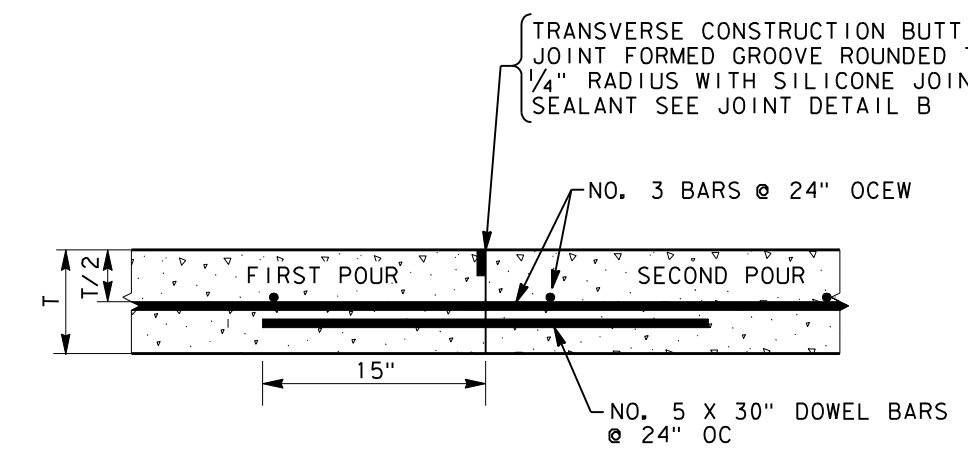
**JOINT DETAIL C SEAL FOR SAWED DUMMY JOINT**  
NOT TO SCALE



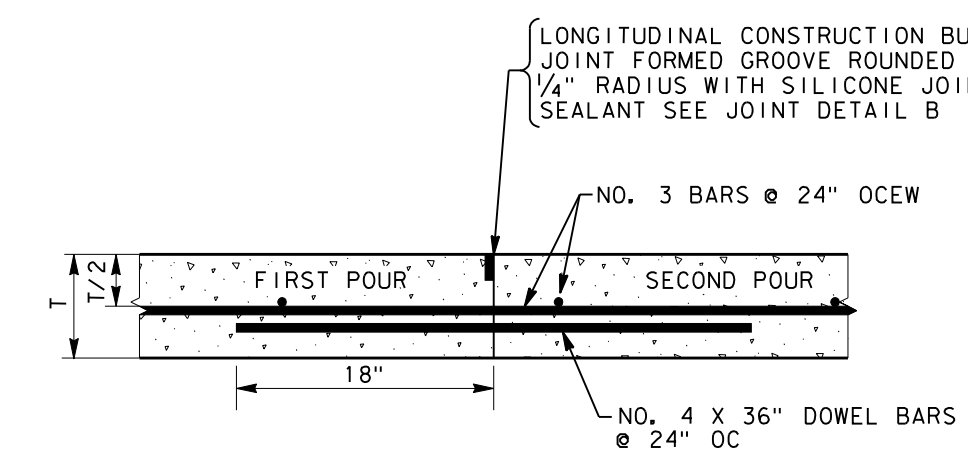
**SIDEWALK CONTROL JOINT**  
NOT TO SCALE



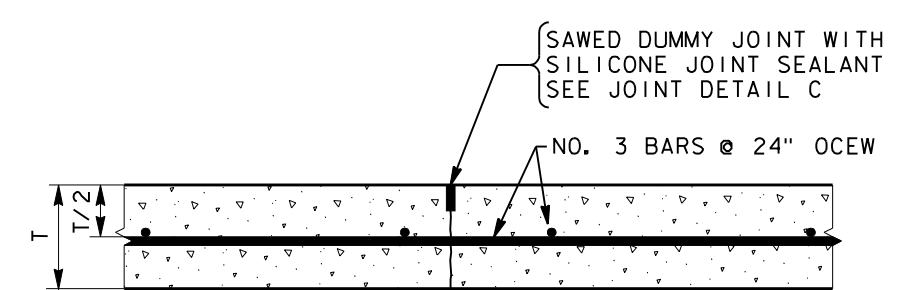
**JOINT DETAIL FOR SIDEWALK ADJACENT TO CURB**  
NOT TO SCALE



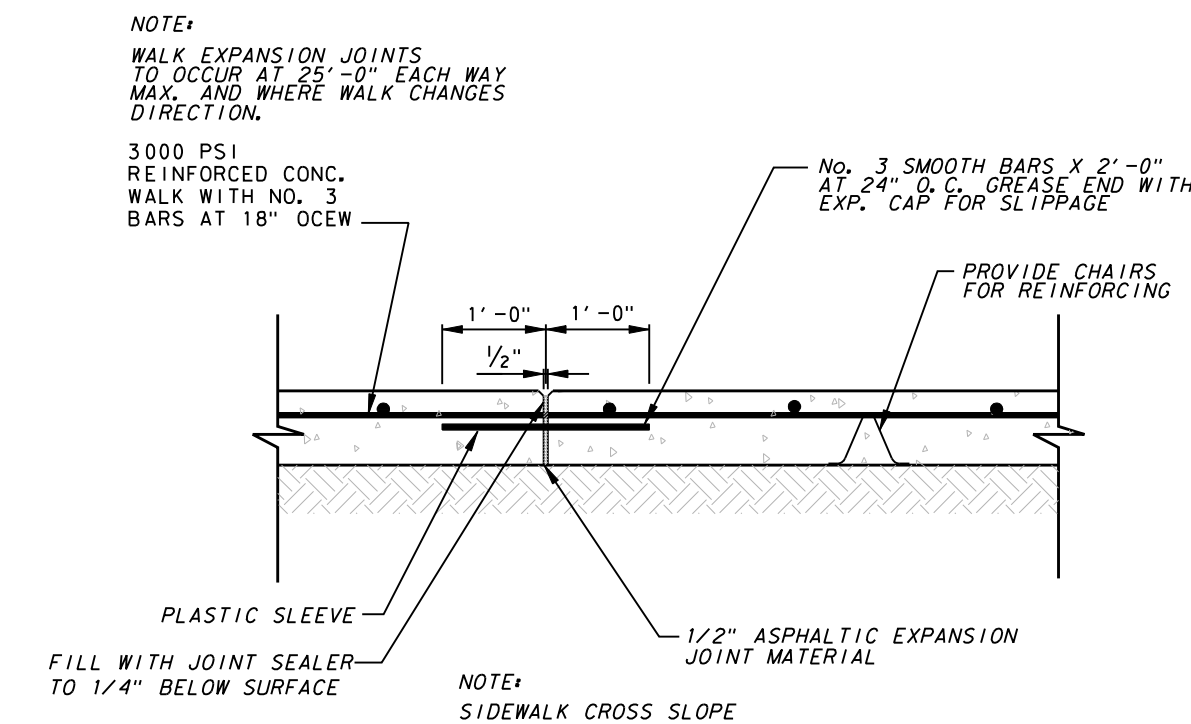
**TRANSVERSE CONSTRUCTION BUTT JOINT**  
NOT TO SCALE



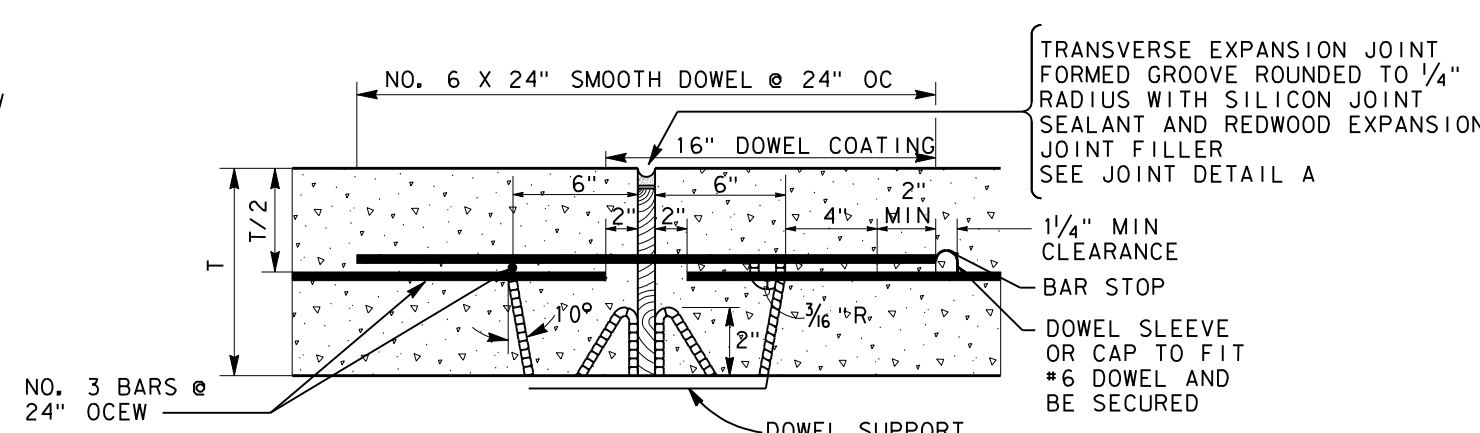
**LONGITUDINAL CONSTRUCTION BUTT JOINT**  
NOT TO SCALE



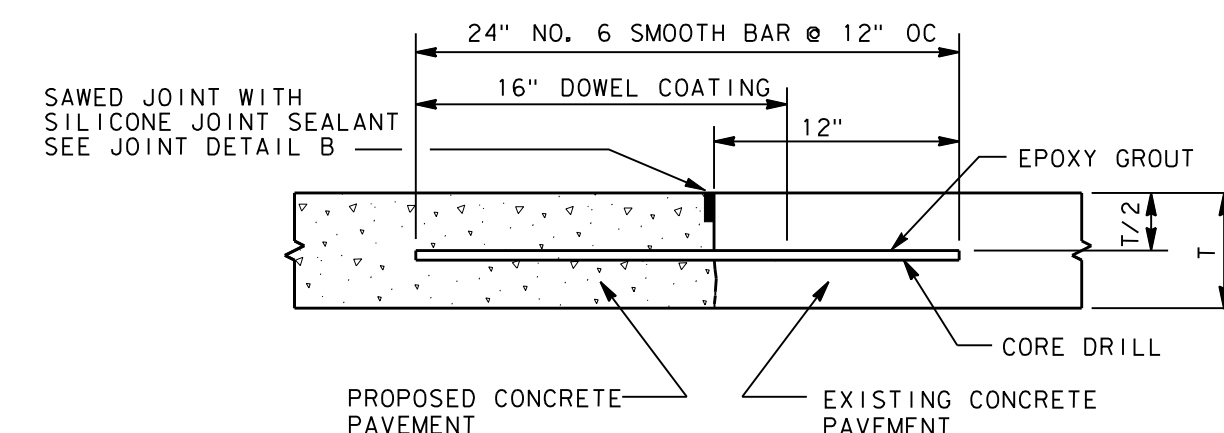
**TRANSVERSE OR LONGITUDINAL SAWED DUMMY JOINT**  
NOT TO SCALE



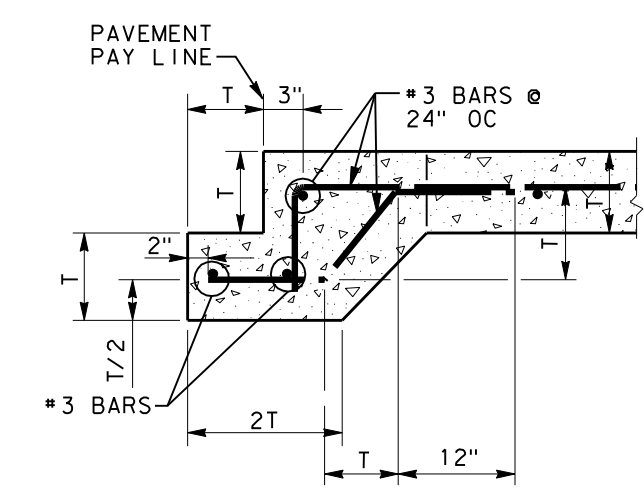
**SIDEWALK EXPANSION JOINT**  
NOT TO SCALE



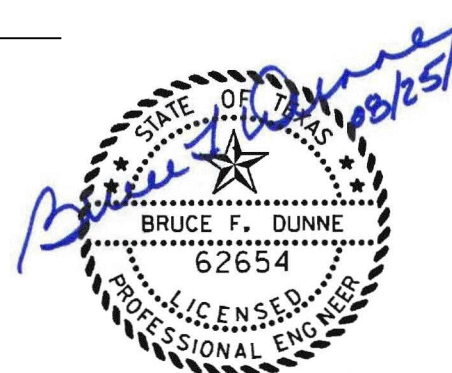
**TRANSVERSE EXPANSION JOINT**  
NOT TO SCALE



**PROPOSED TO EXISTING CONCRETE PAVEMENT**  
NOT TO SCALE



**CONCRETE STREET HEADER**  
NOT TO SCALE



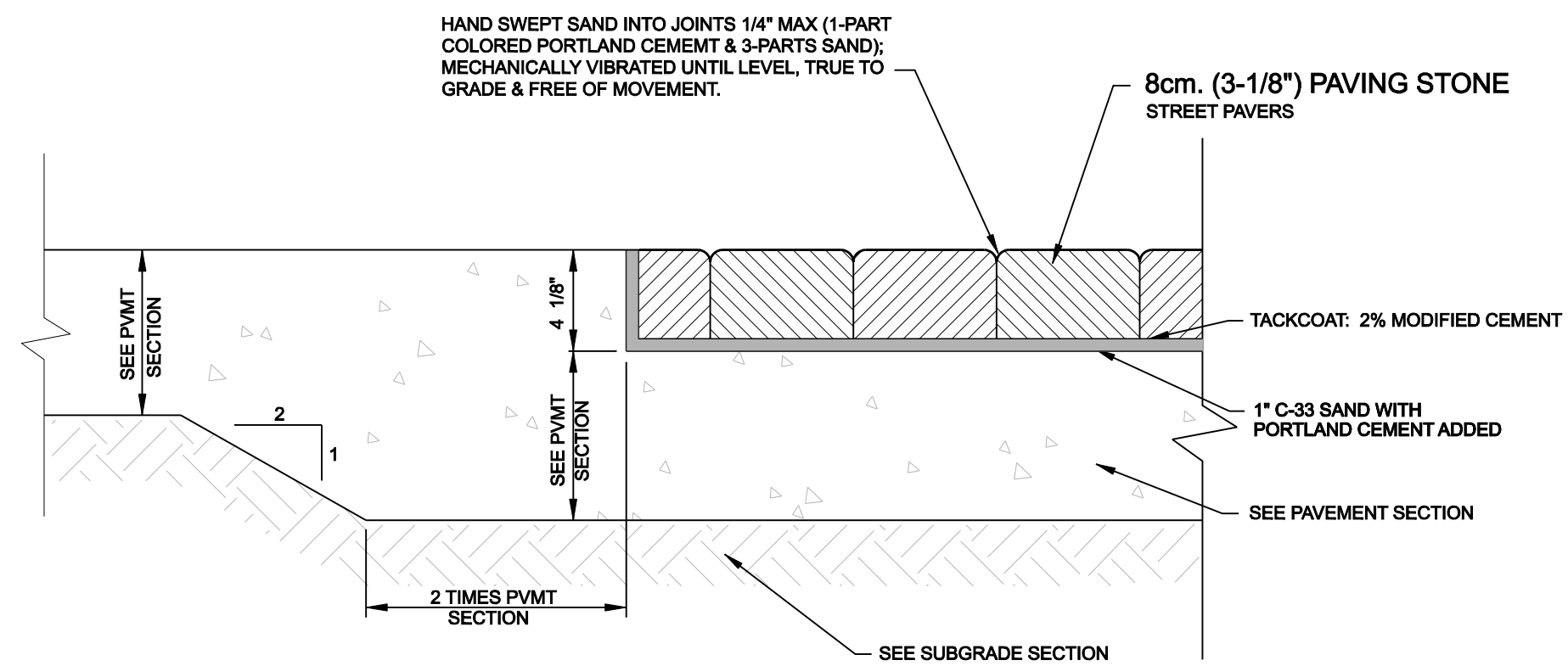
NO.	REVISION	BY	DATE

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DALLAS COUNTY, TEXAS  
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**PAVING DETAILS**

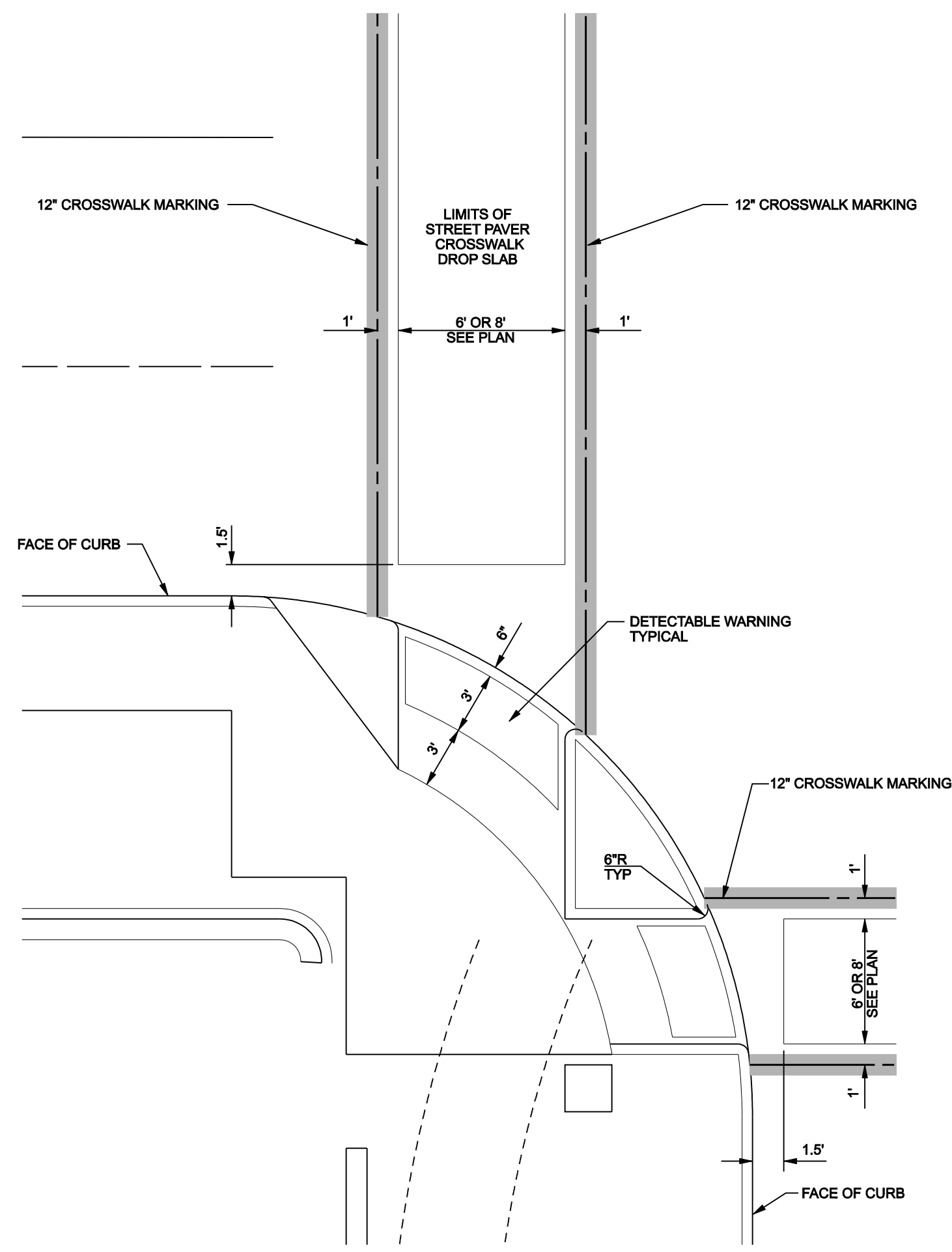
icon Consulting Engineers, Inc.				
Civil Engineers - Designers - Planners		250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210		
PROJECT	DESIGN	DRAWN	DATE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01 28

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

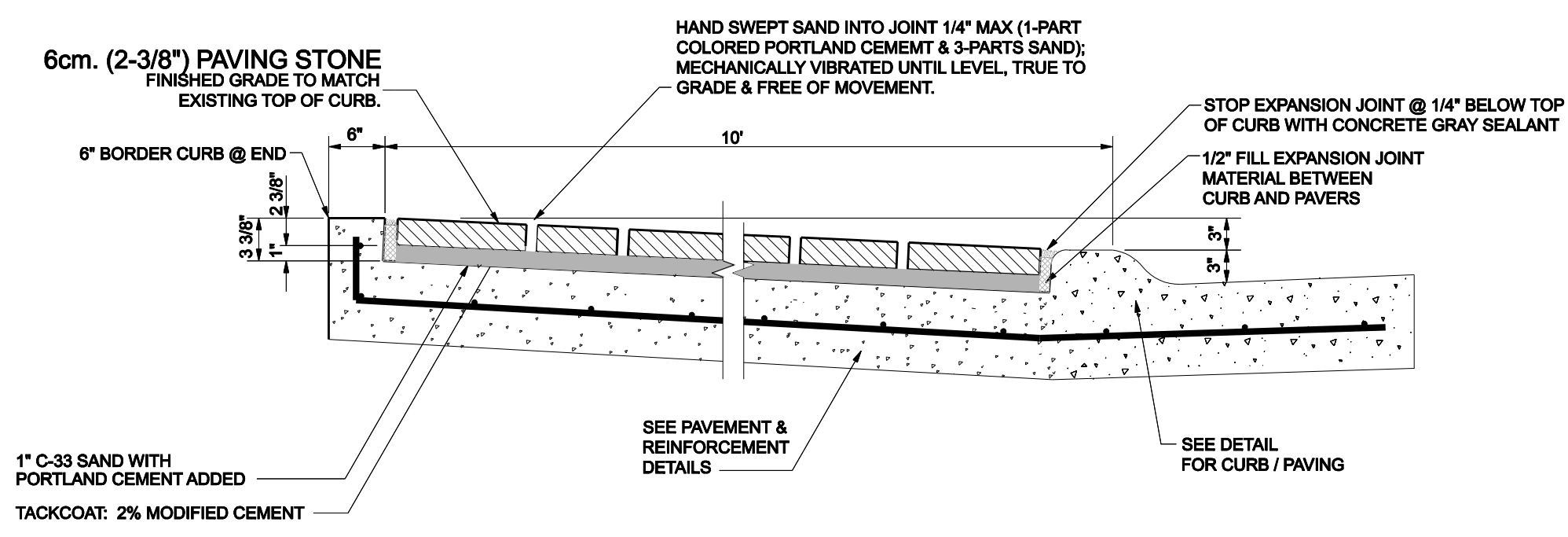


NOTE:  
CONTRACTOR SHALL CONFIRM THICKNESS OF FINAL PAVER SELECTION PRIOR TO POURING DROP SLABS IN THE SIDEWALKS OR STREETS

**STREET PAVERS ON CONCRETE DROP SLAB**  
N.T.S.

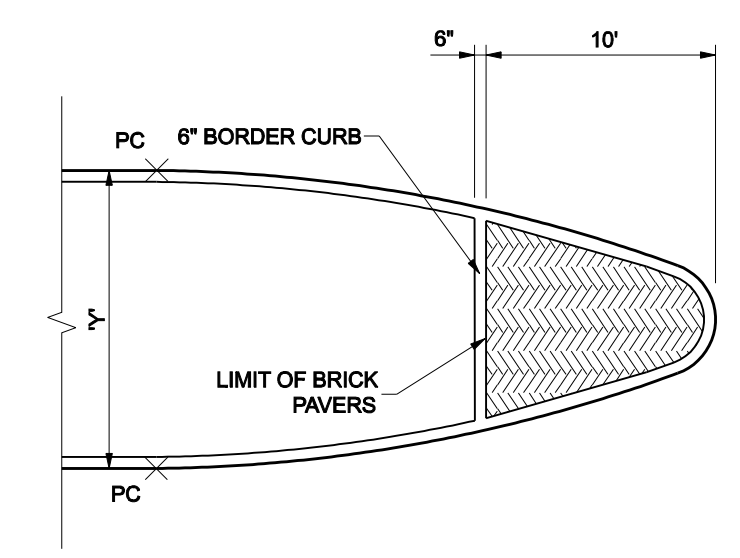


**TYPICAL CROSSWALK STREET PAVER DROP SLAB**  
N.T.S.

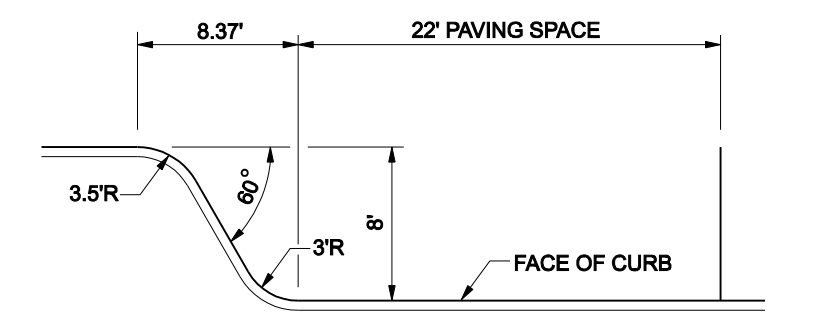


NOTE:  
CONTRACTOR SHALL CONFIRM THICKNESS OF FINAL PAVER SELECTION PRIOR TO POURING DROP SLABS IN THE SIDEWALKS OR STREETS

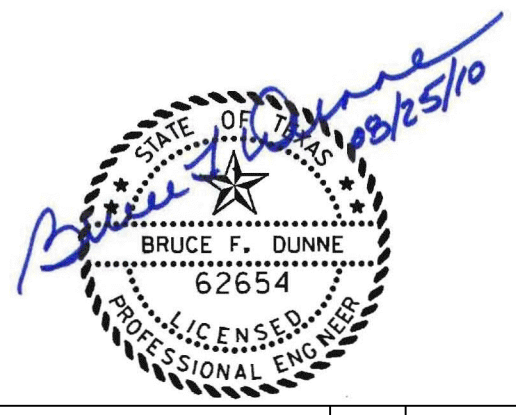
**TYPICAL CROSS SECTION**  
N.T.S.



**DETAIL FOR MEDIAN NOSE TREATMENT WIDER THAN 6' (Y>6')**  
N.T.S.



**TYPICAL PARALLEL PARKING TRANSITION**  
NOT TO SCALE



NO.	REVISION	BY	DATE

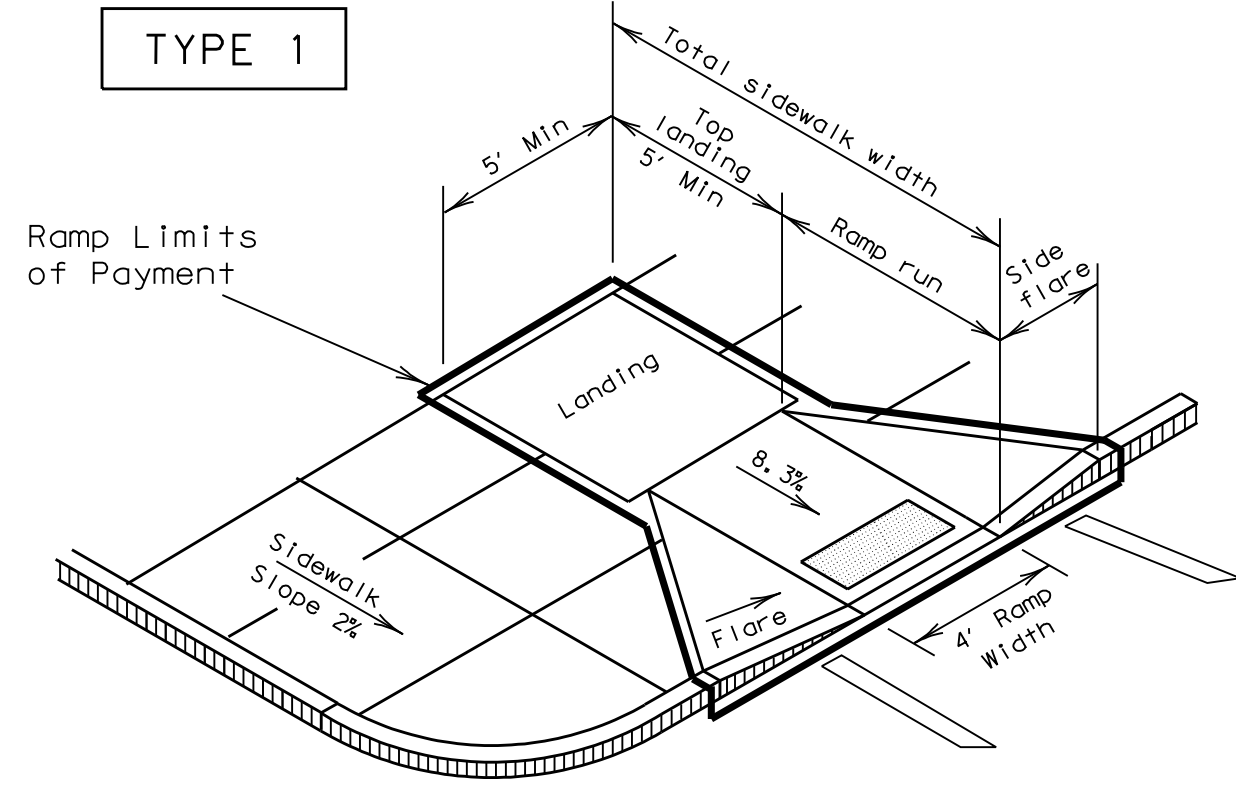
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PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**PAVING DETAILS**

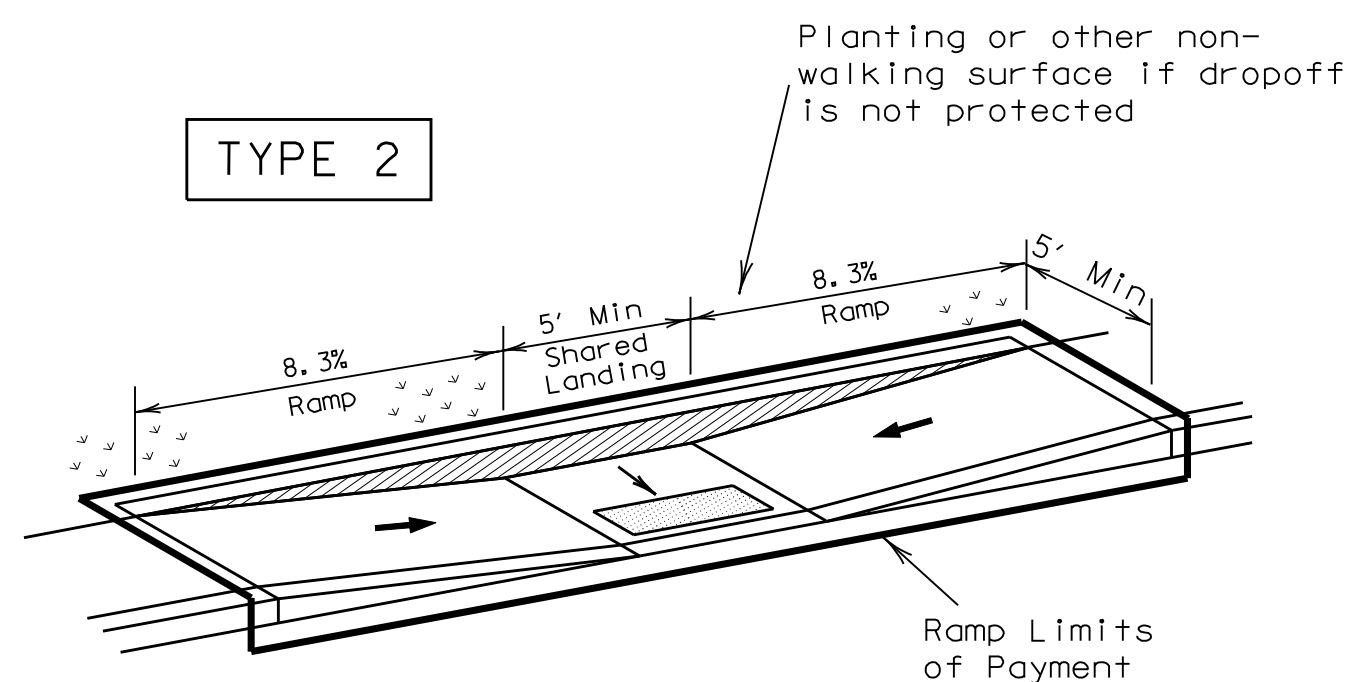
**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	29

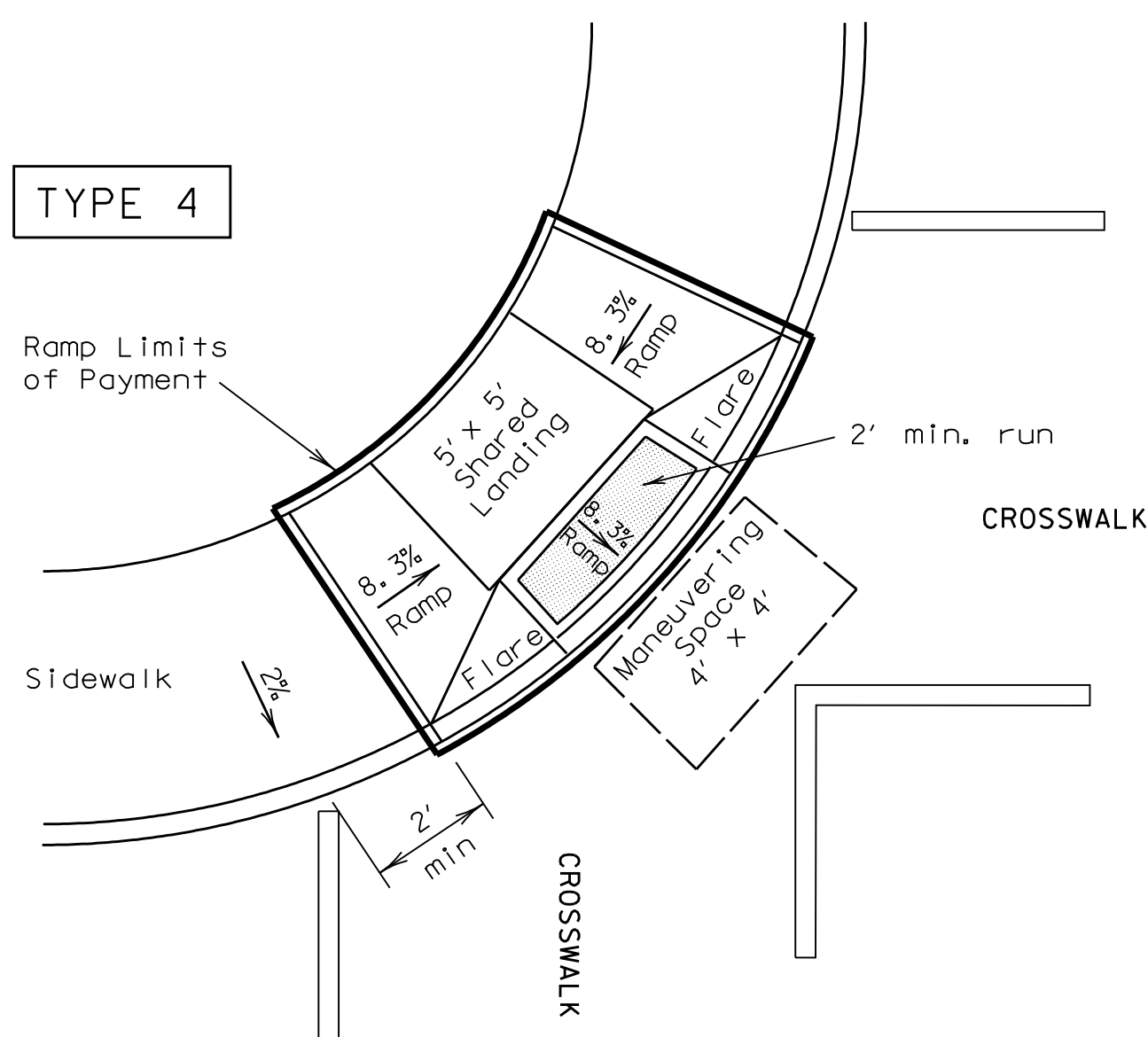
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



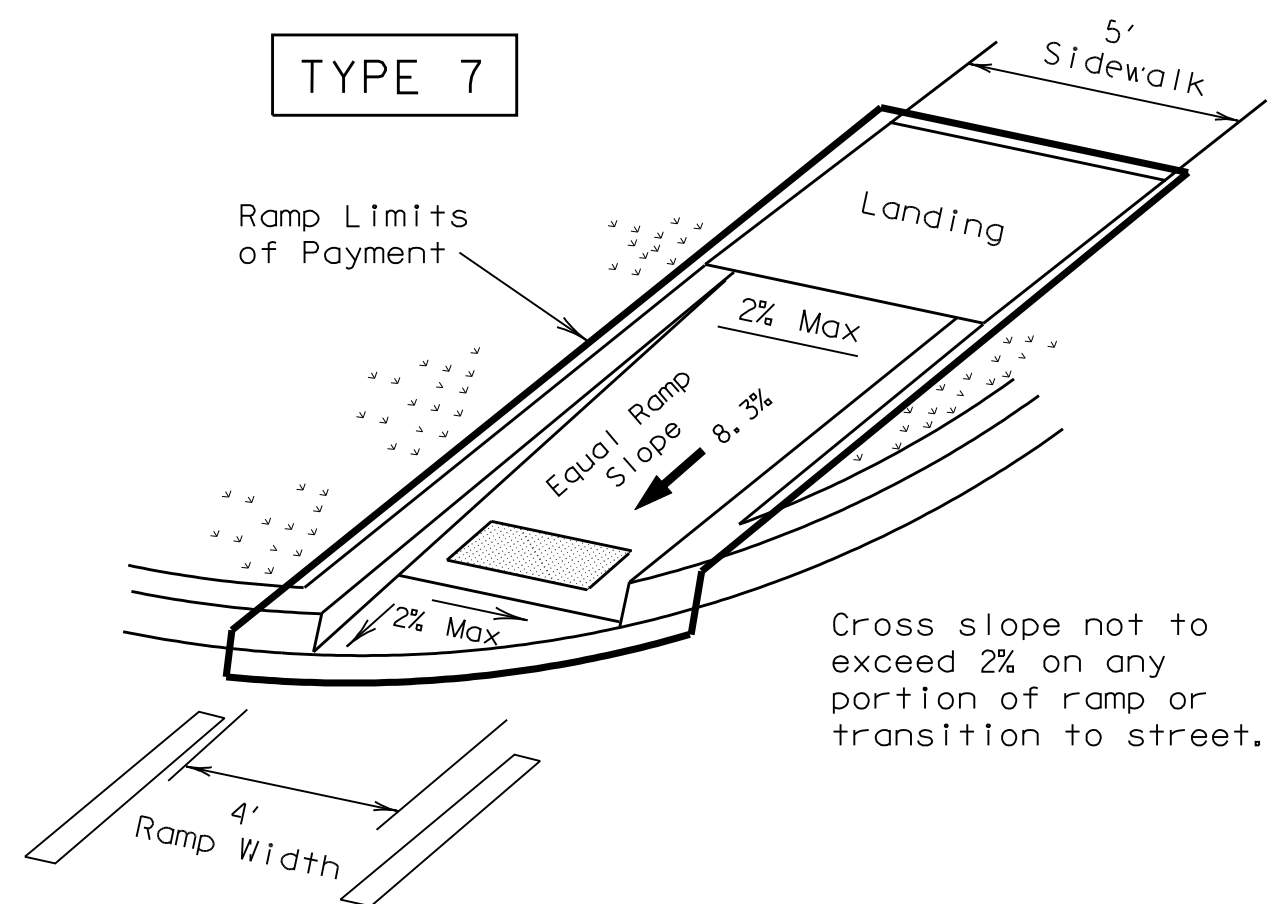
PERPENDICULAR CURB RAMP



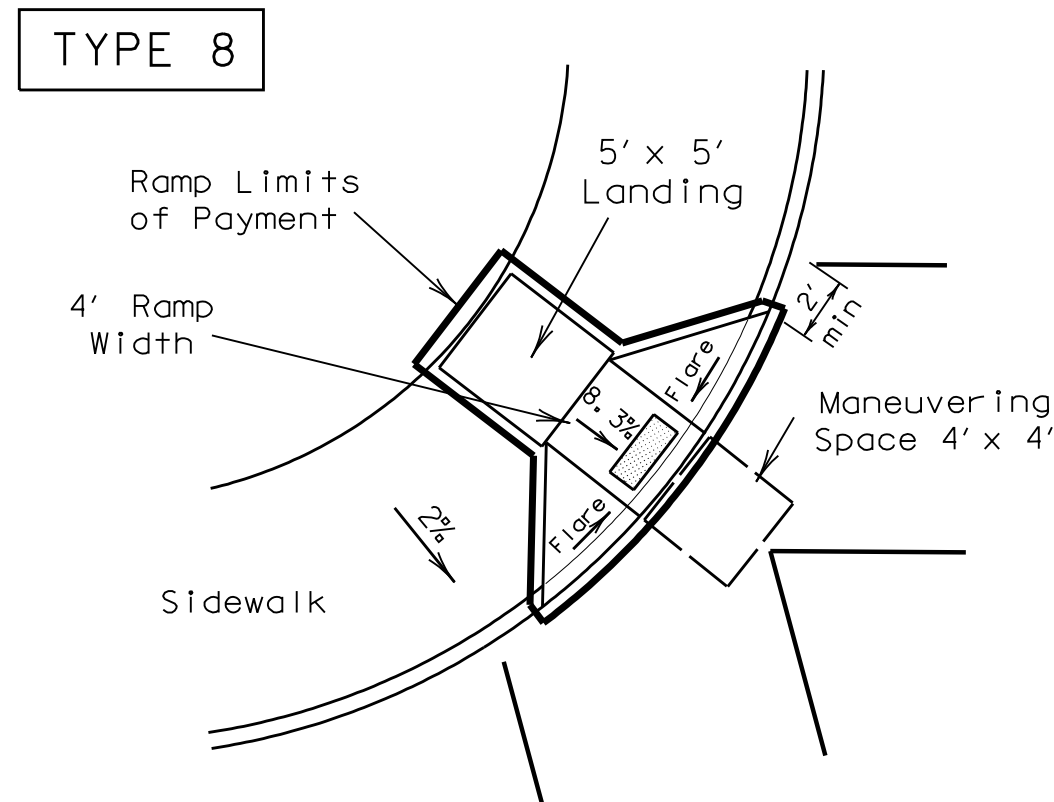
PARALLEL CURB RAMP  
(Use only where water will not pond in the landing.)



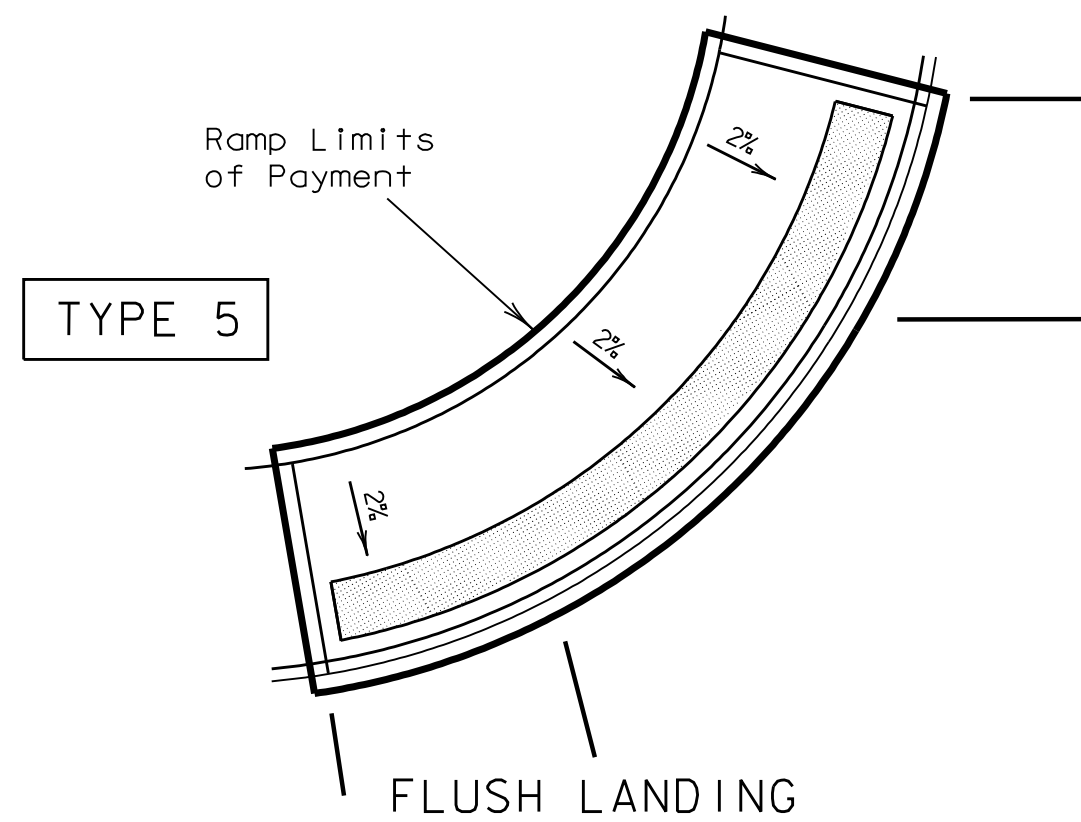
DIAGONAL COMBINATION CURB RAMP  
Perpendicular to the Tangent of the Curb Radius and Contained in Crosswalk



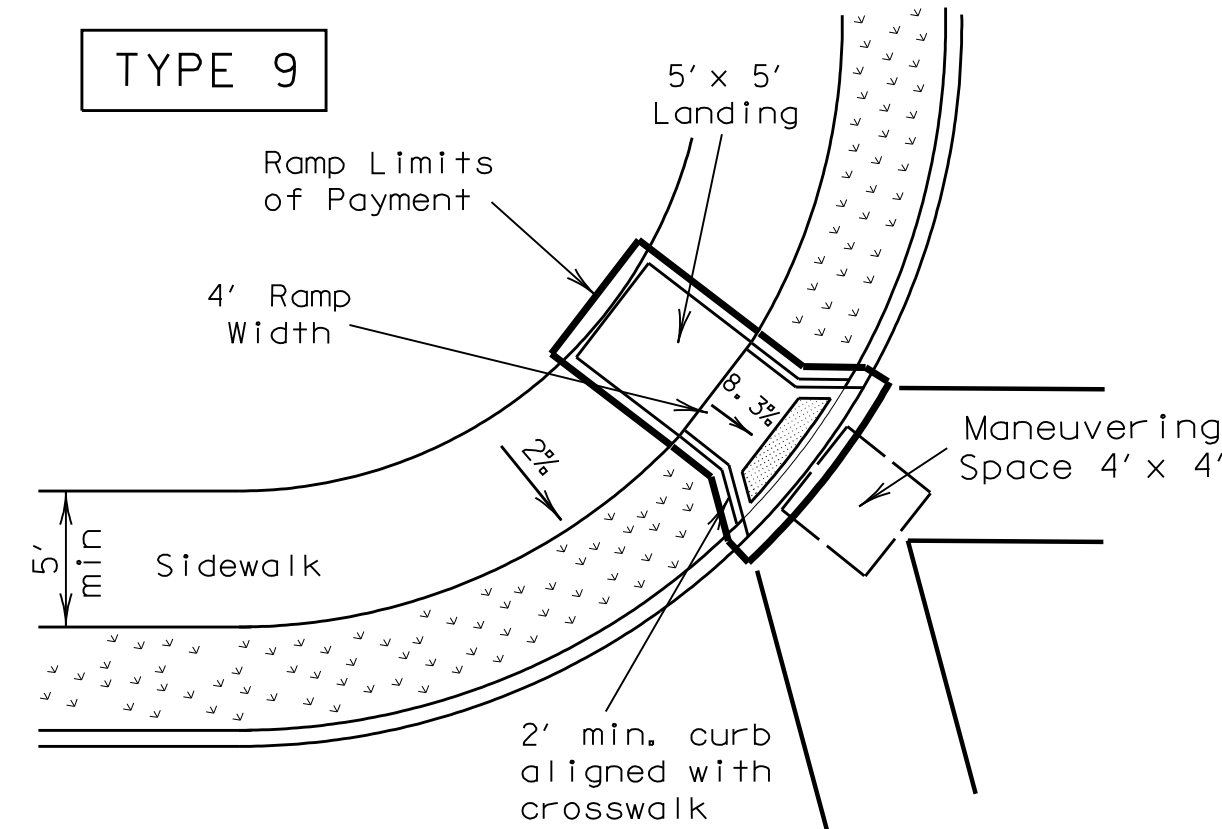
DIRECTIONAL RAMP WITHIN RADIUS  
(Sidewalk set back from curb)



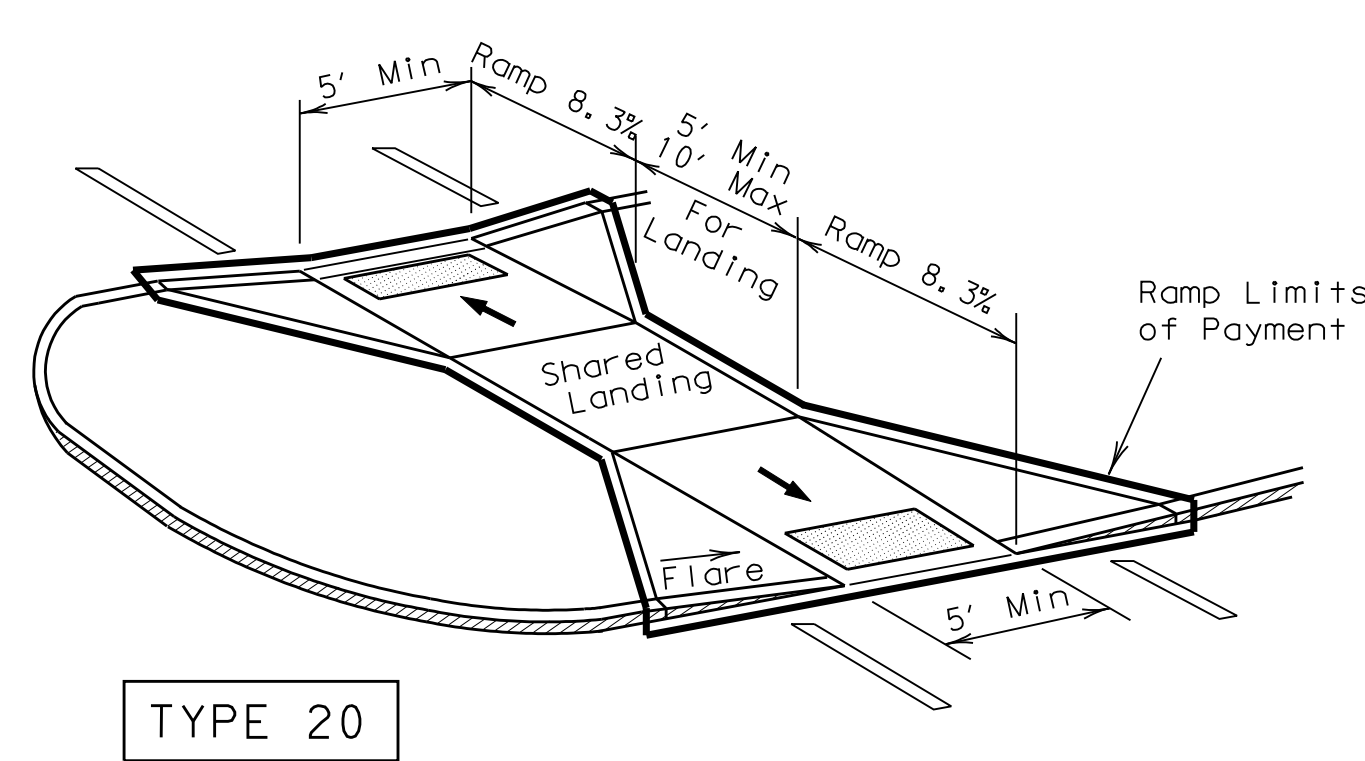
DIAGONAL CURB RAMP (FLARED SIDES)



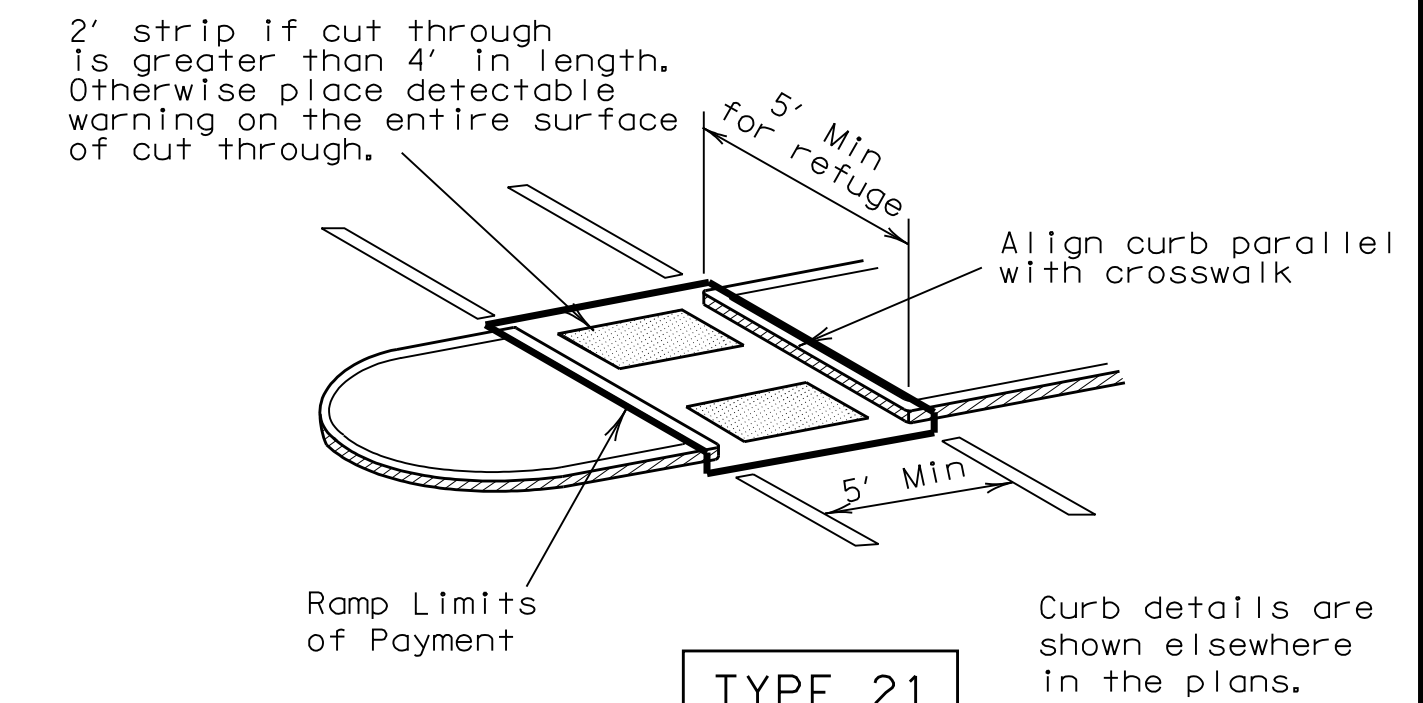
FLUSH LANDING



DIAGONAL CURB RAMP (RETURNED CURB)

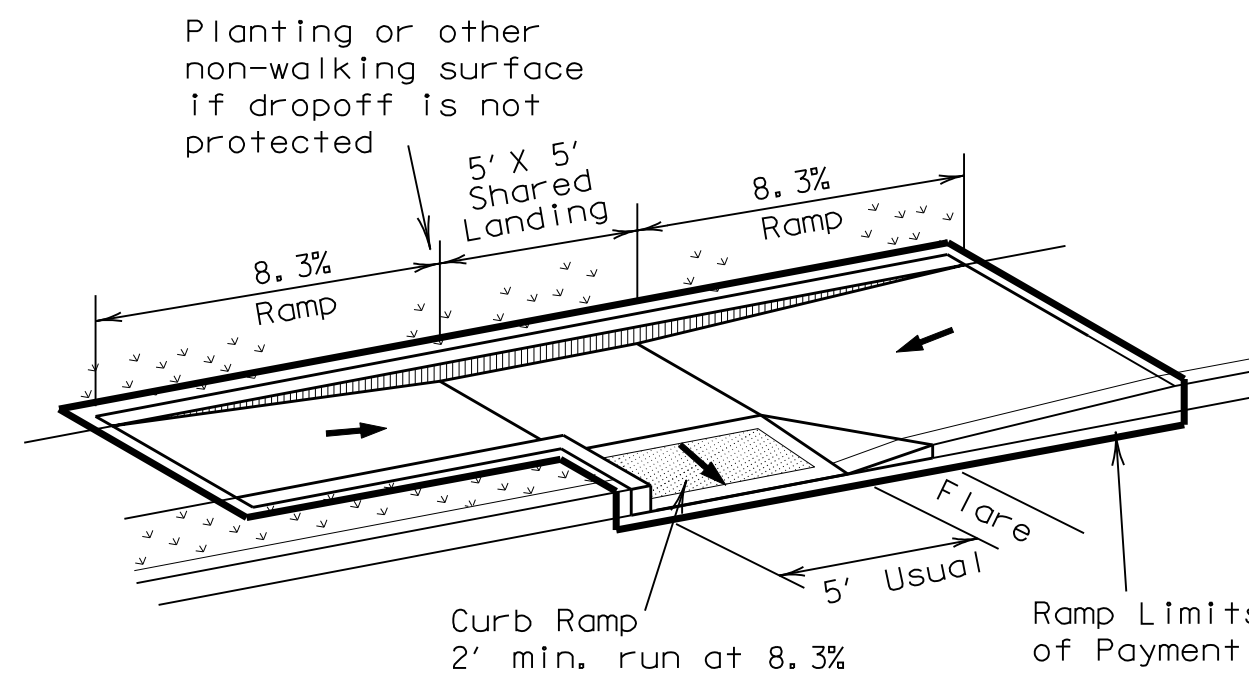


TYPE 20

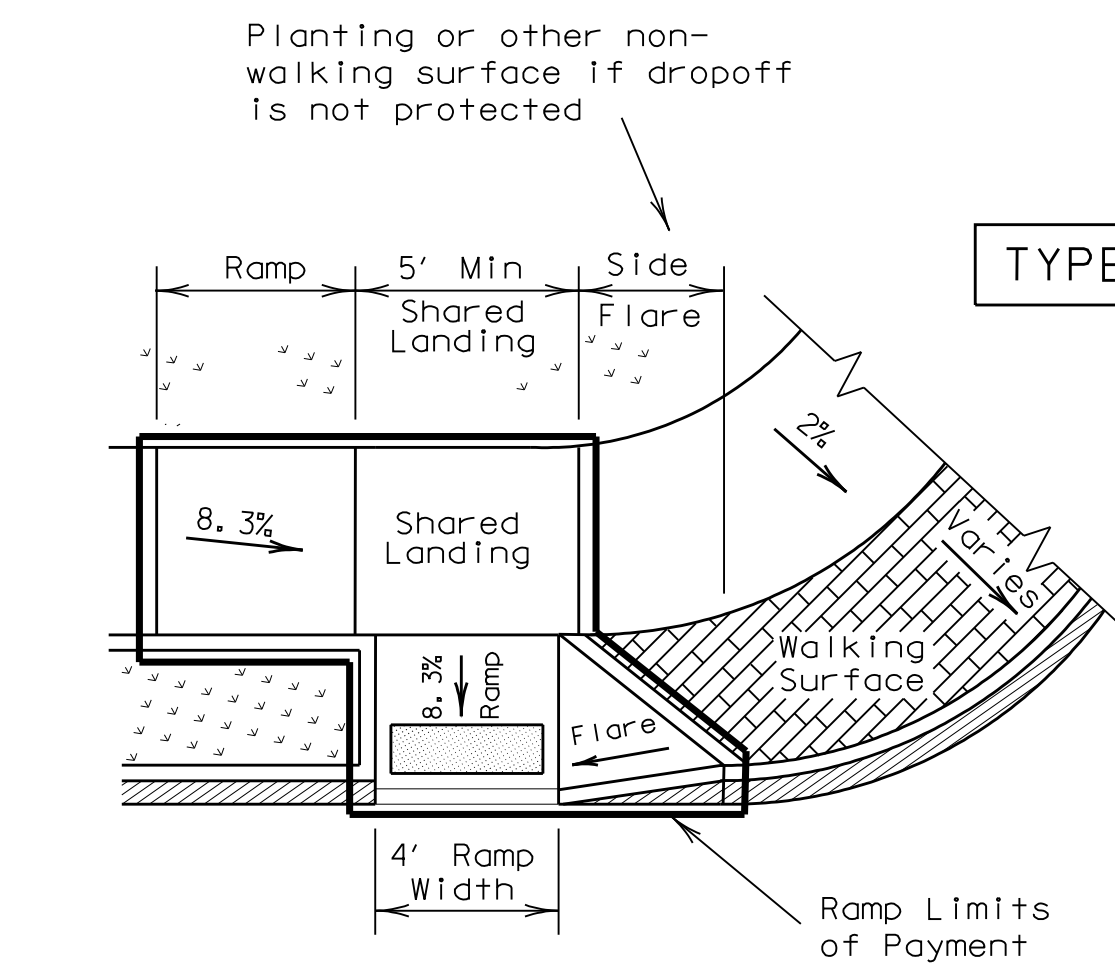


TYPE 21

CURB RAMPS AT MEDIAN ISLANDS

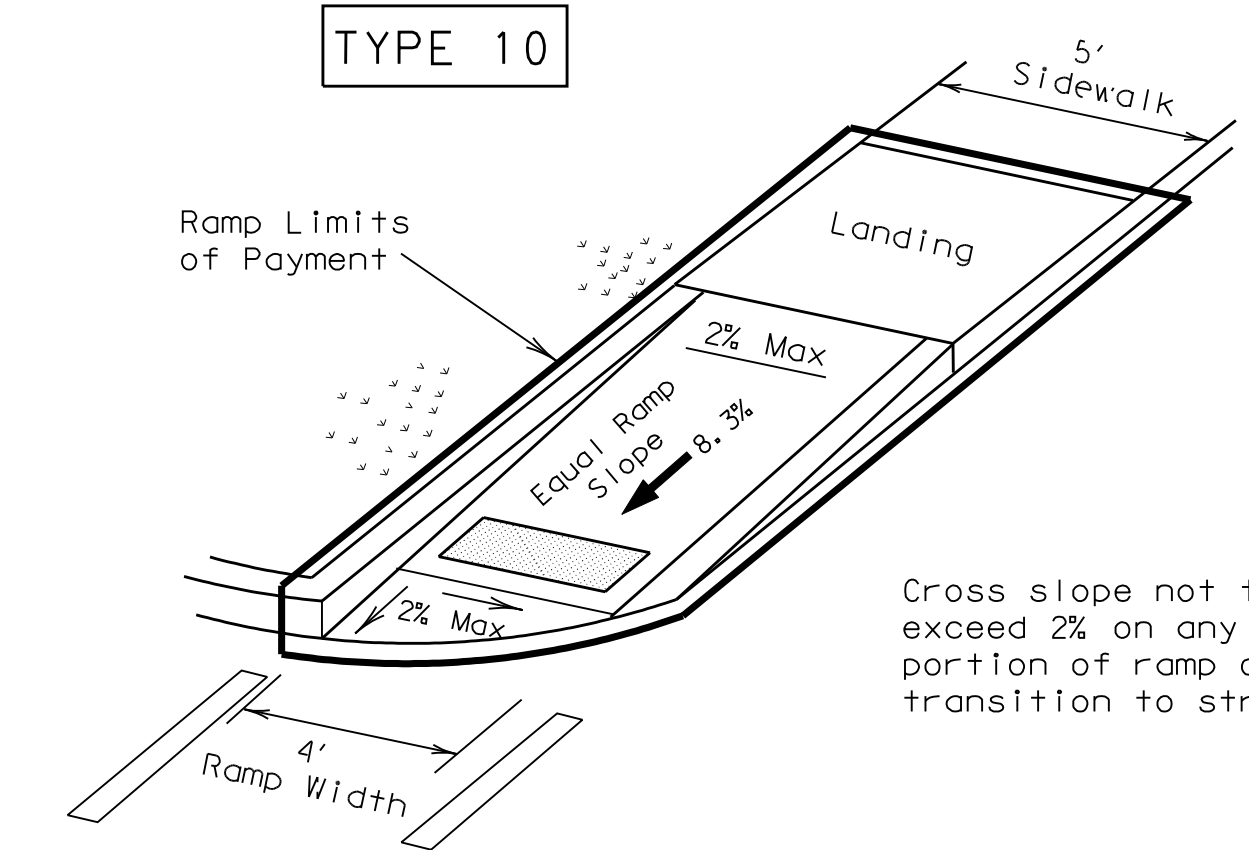


TYPE 3

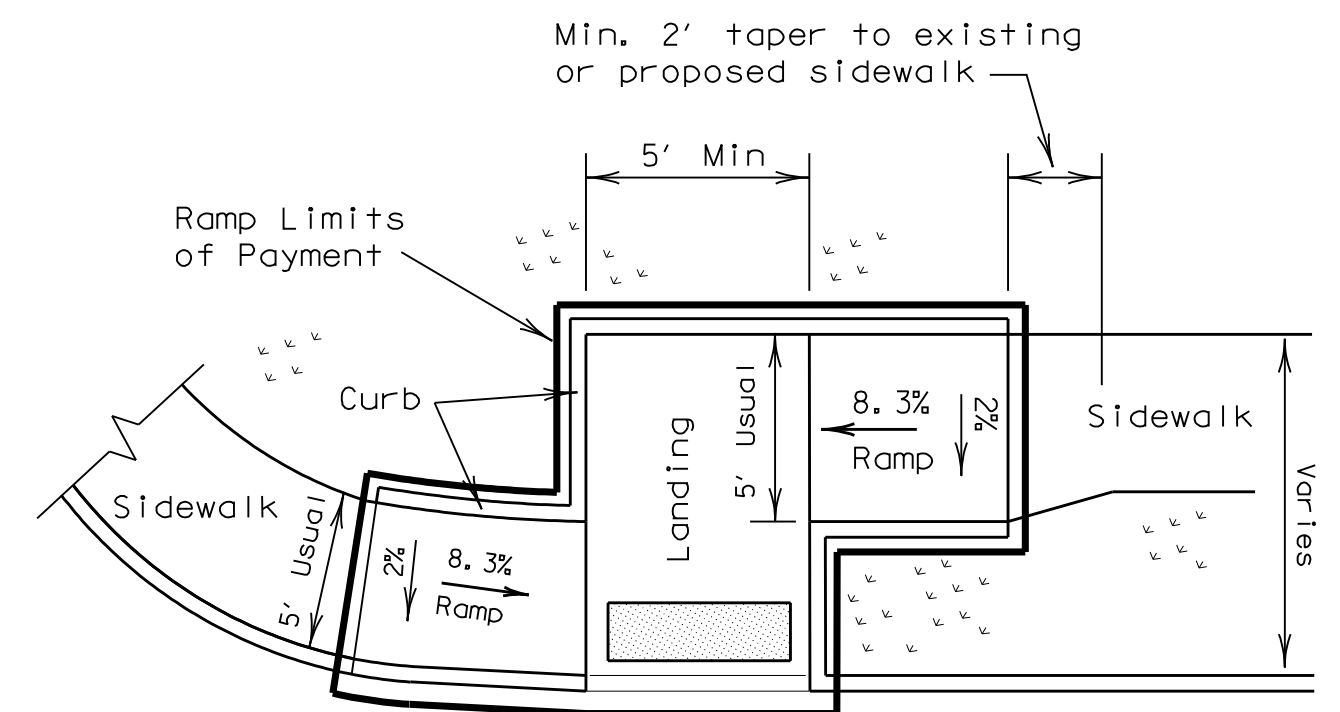


TYPE 6

COMBINATION CURB RAMPS



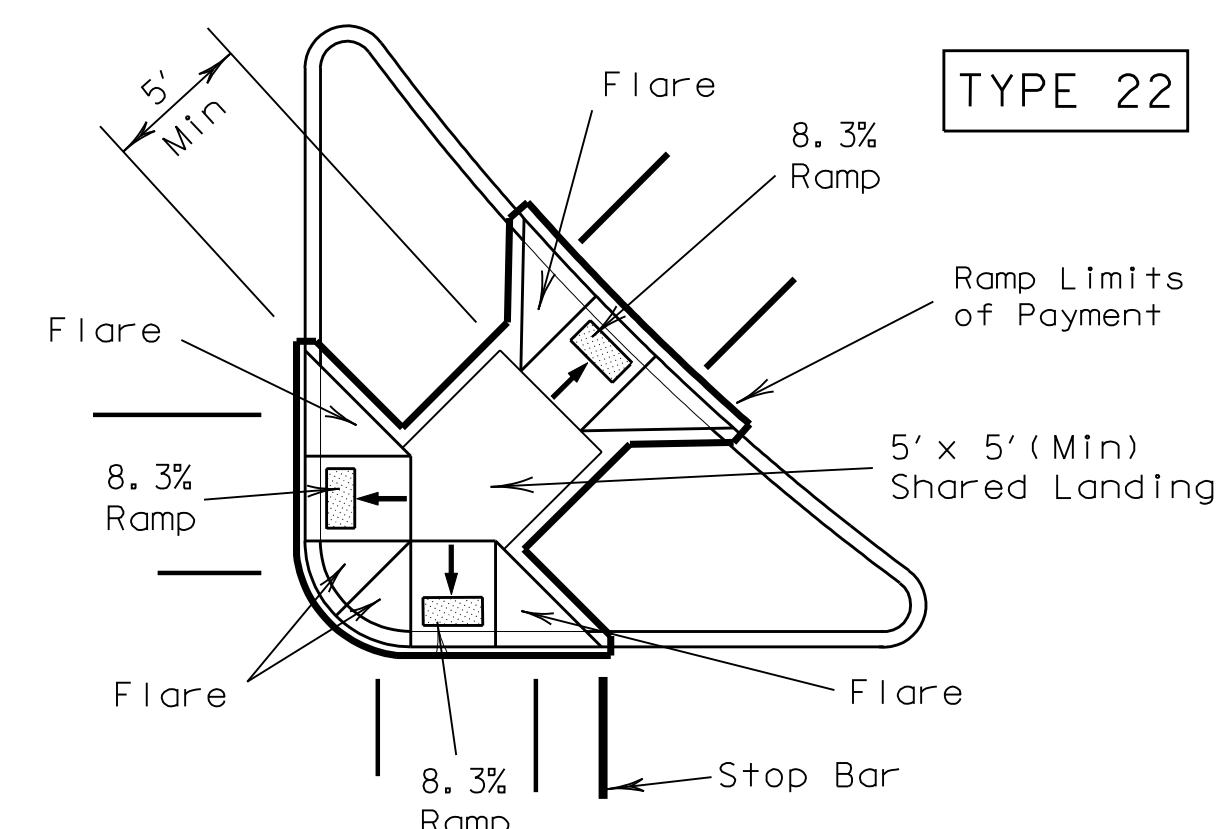
DIRECTIONAL RAMP WITHIN RADIUS  
(Sidewalk adjacent to curb)



TYPE 11

OFFSET PARALLEL CURB RAMP

NOTES:  
See General Notes on sheet 2 of 4 for more information.  
v Denotes planting or non-walking surface.



TYPE 22

COMBINATION ISLAND RAMPS

Texas Department of Transportation  
Design Division (Roadway)

PEDESTRIAN FACILITIES  
CURB RAMPS

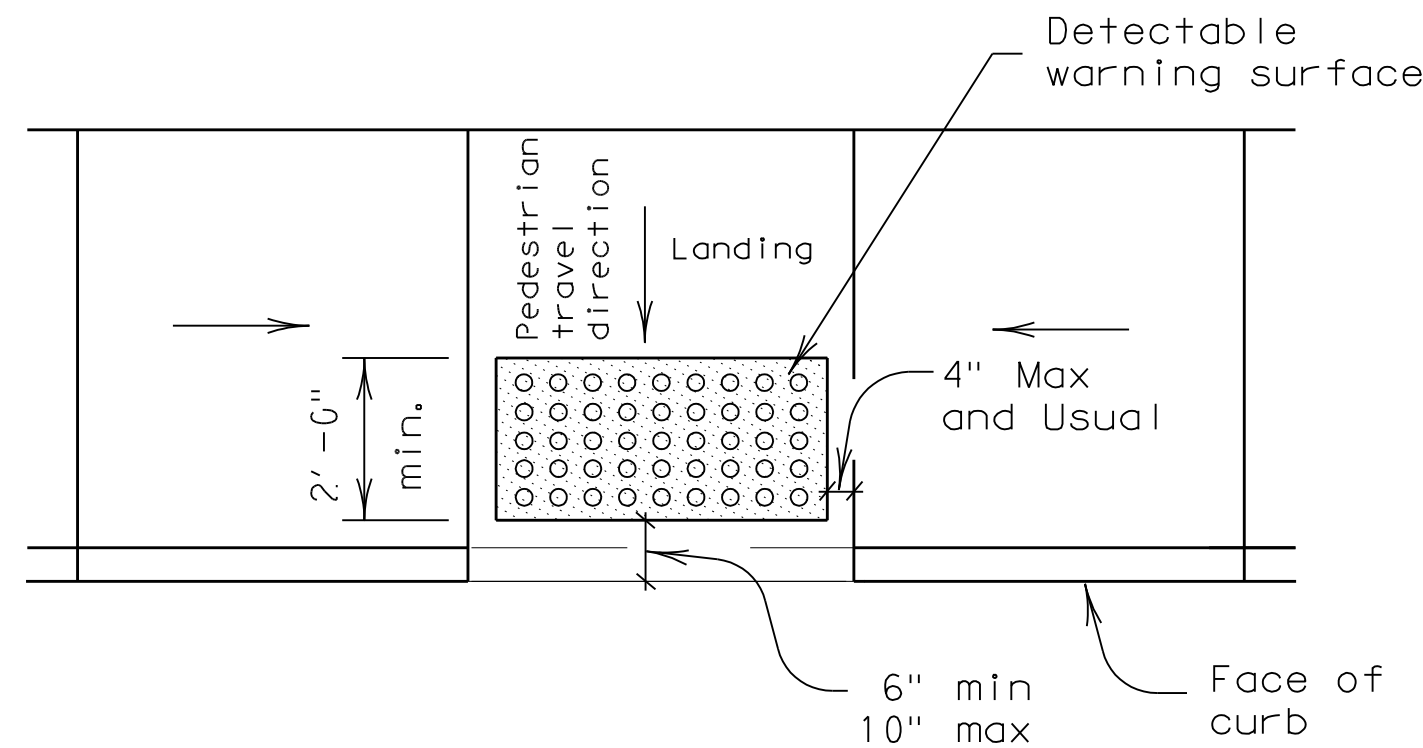
PED-05 SHEET 1 OF 4

FILE#	ped05.dgn	DN#	EH	CK#	DN#	BGD	CK#
©	TxDOT	March	2002	DIST	FEDERAL AID PROJECT		
REVISIONS				COUNTY	CONTROL	SECT	JOB
							SHEET 29A
							HIGHWAY

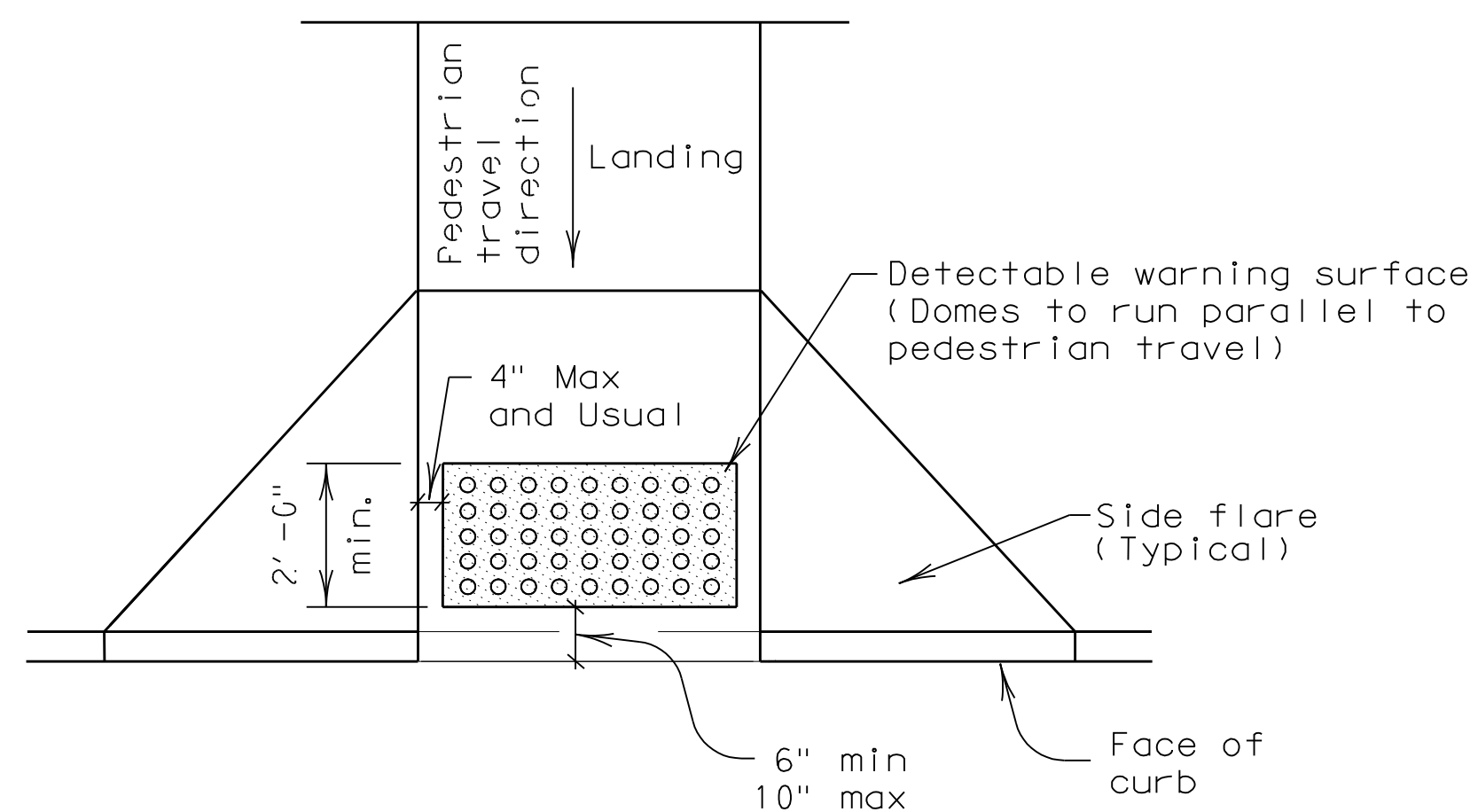
## DETECTABLE WARNINGS

### General Notes for Detectable Warnings

1. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 4.29 of the Texas Accessibility Standards (TAS). The surface must contrast visually with adjoining surfaces, including side flares. Furnish dark brown or dark red detectable warning surface adjacent to uncolored concrete, unless specified elsewhere in the plans.
2. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
3. Align truncated domes in the direction of pedestrian travel when entering the street.
4. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.
5. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
6. Detectable warning surfaces shall be located so that the edge nearest the curb line is a minimum of 6" and a maximum of 10" from the extension of the face of curb. Detectable warning surfaces may be curved along the corner radius.
7. TxDOT maintains a list of Qualified Detectable Warning Materials. Details are provided herein for the placement of landscape pavers. For other materials, refer to the manufacturer's product manual for proper installation.



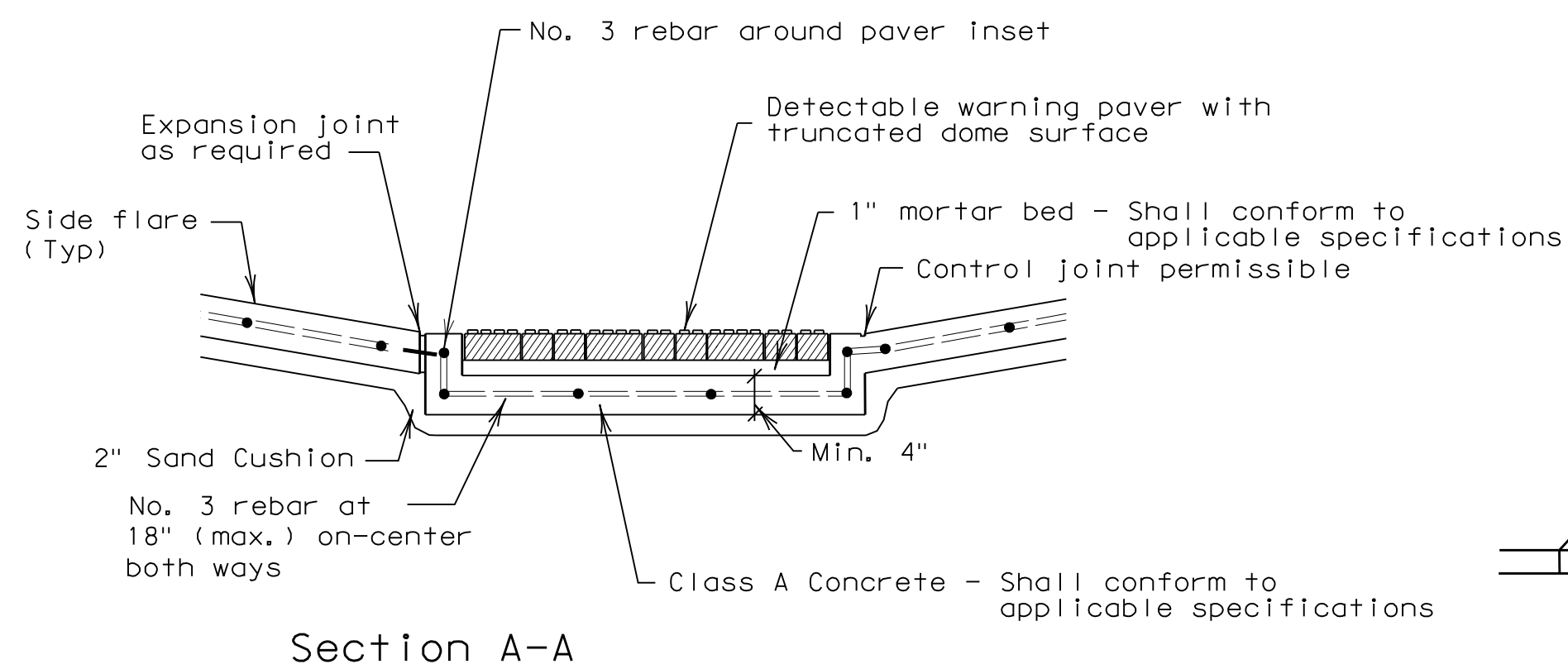
Typical placement of detectable warning surface on landing at street edge.



Typical placement of detectable warning surface on sloping ramp run.

## Pedestrian Facilities General Notes

1. All slopes are maximum allowable. The least possible slope that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
2. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is encouraged. Where a 5' sidewalk can not be provided due to site constraints, a minimum 3' sidewalk with 5' x 5' passing areas at intervals not to exceed 200' is required.
3. Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.
4. Maneuvering space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
5. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
6. Curb ramps with returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planting or other non-walking surface or because the side approach is substantially obstructed. Otherwise, provide flared sides.
7. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC §68.102.
8. To serve as a pedestrian refuge area, the median should be a minimum of 5' wide. Medians should be designed to provide accessible passage over or through them.
9. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
10. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall be aligned with theoretical crosswalks, or as directed by the Engineer.
11. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.
12. Handrails are not required on curb ramps. Provide curb ramps wherever on accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Separate curb ramp and landings from adjacent sidewalk and any other elements with pre-mold or board joint of 3/4" unless otherwise directed by the Engineer.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Flare slope shall not exceed 10% measured along curb line.

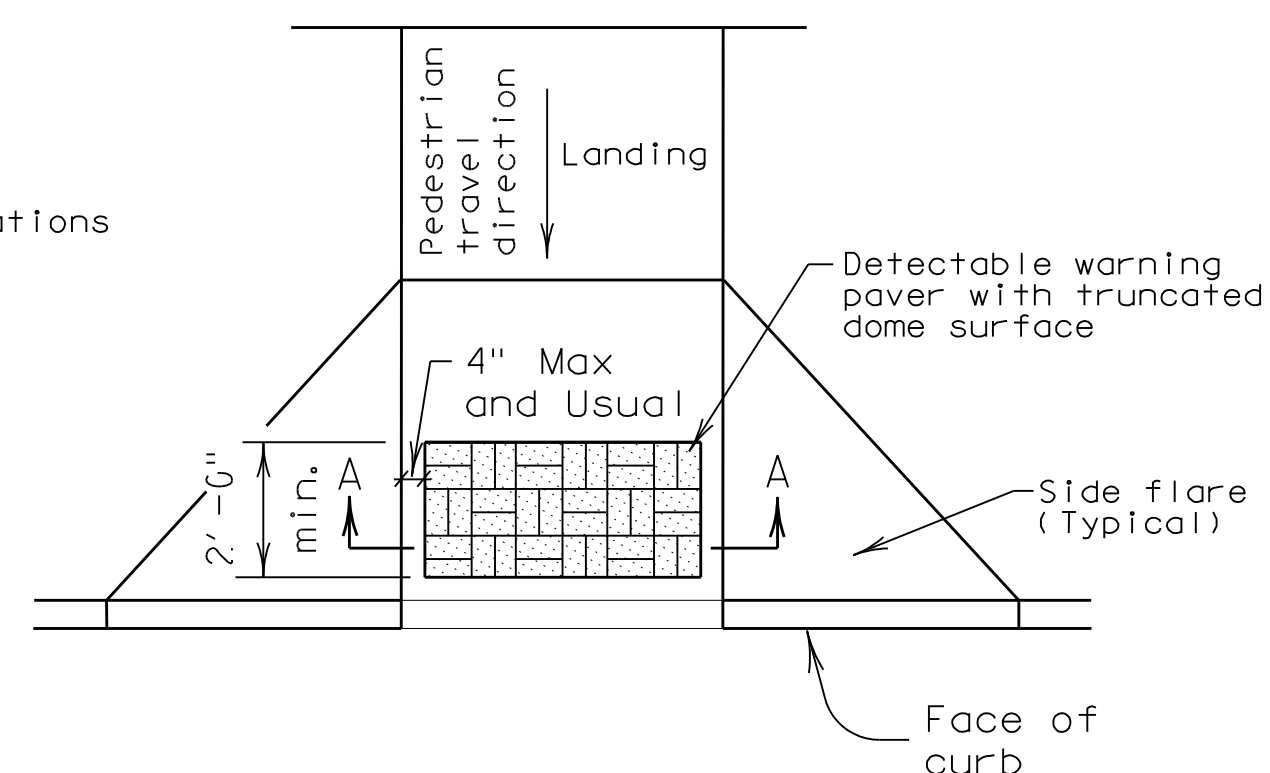


Section A-A

### General Notes (Pavers)

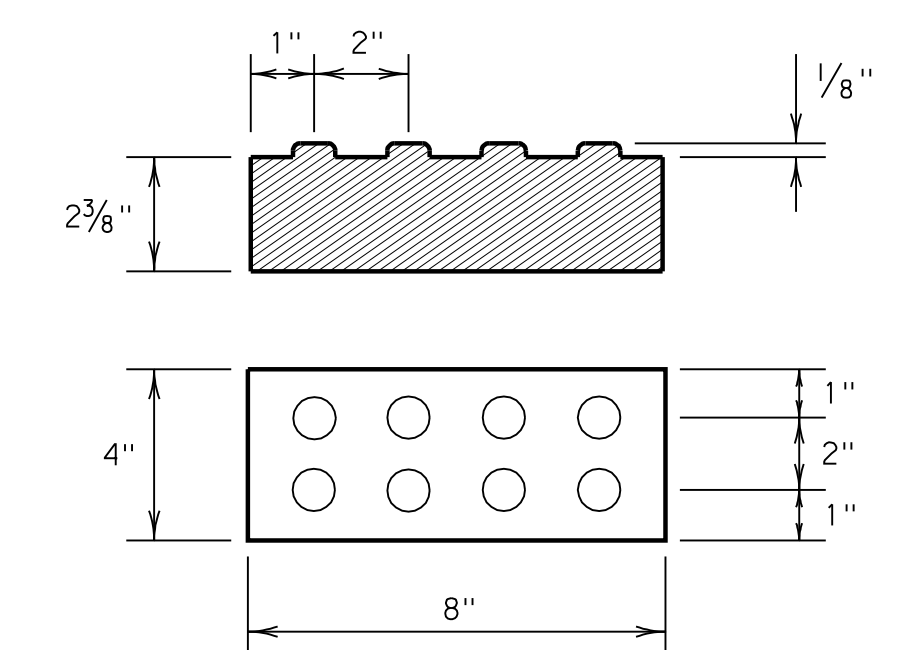
Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.

Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.



Truncated Dome Pattern Curb Ramp

### DETECTABLE WARNING PAVER (OPTION)



Detectable Warning Paver



## PEDESTRIAN FACILITIES

### GENERAL NOTES AND DETECTABLE WARNINGS

## PED-05

SHEET 2 OF 4

FILE# ped05.dgn	DN# EH	CK#	DW# BGD	CK#			
© TxDOT March 2002		DIST		FEDERAL AID PROJECT			
REVISIONS				SHEET 29B			
		COUNTY		CONTROL SECT		JOB HIGHWAY	



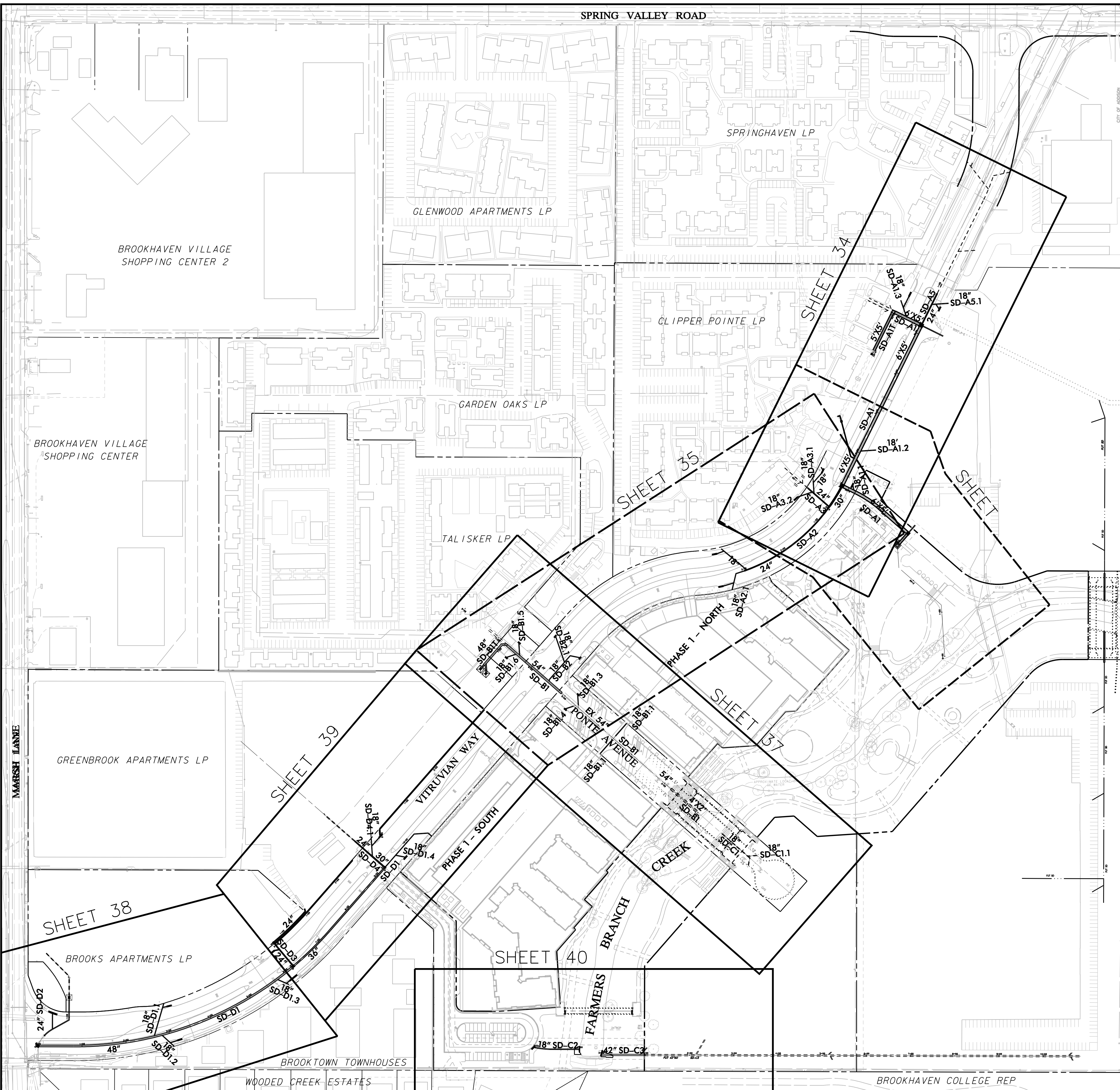




SPRING VALLEY ROAD

STORM DRAIN GENERAL NOTES

- REFER TO SHEET 4 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THIS PROJECT.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR STORM DRAINAGE CONSTRUCTION AS PUBLISHED BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, AND ANY AND ALL AMENDMENTS BY THE TOWN OF ADDISON, AS WELL AS STANDARD CONSTRUCTION DETAILS OF THE TOWN OF ADDISON.
- PRIOR TO COMMENCING CONSTRUCTION, THE TOWN OF ADDISON, THE CONSULTING ENGINEERS, THE SUCCESSFUL CONTRACTOR, UTILITY COMPANIES, AND ANY OTHER AFFECTED PARTIES, SHALL CONVENE FOR A PRE-CONSTRUCTION CONFERENCE AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- THE CONTRACTOR SHALL OBTAIN A RIGHT-OF-WAY PERMIT FROM THE TOWN OF ADDISON PRIOR TO WORKING WITHIN THE PUBLIC RIGHT-OF-WAY.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ANY PUBLIC UTILITY COMPANIES FOR LOCATION OF EXISTING FACILITIES IN OR NEAR THE WORK AREAS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:  
 TOWN OF ADDISON (WATER, SEWER, SIGNALS)    ATMOS ENERGY (GAS)  
 ONCOR ELECTRIC DELIVERY                    VERIZON / MCI  
 AT&T (SOUTHWESTERN BELL)                TIME-WARNER CABLE
- THE CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER (SIX SETS EACH), FOR APPROVAL OF ALL MATERIALS TO BE ADDED TO THE PUBLIC INFRASTRUCTURE, PRIOR TO INCORPORATING MATERIALS INTO THE JOB.
- THE CONTRACTOR SHALL PROVIDE AND SUBMIT TO THE TOWN OF ADDISON (SIX SETS EACH), AN APPROVED TRENCH SAFETY PLAN, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS, FOR THE INSTALLATION OF STORM DRAINAGE FACILITIES GREATER THAN FIVE (5) FEET IN DEPTH.
- THE CONTRACTOR SHALL FULLY COMPLY WITH, AND SUPPLEMENT AS NECESSARY, THE CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, AND SUPPLEMENT AS NECESSARY, THE TRAFFIC CONTROL MEASURES ON THIS PROJECT, INCLUDING PROVIDING ADEQUATE FLAGMEN, SIGNAGE, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION IN ACCORDANCE WITH THE TEXAS MANUAL OF UNIFORM CONTROL DEVICES. THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION DURING WORKING HOURS OR PROVIDE AN ALL-WEATHER DETOUR AROUND THE CONSTRUCTION SITE, INCLUDING PUBLIC NOTIFICATION AND SIGNAGE.
- THE TOWN OF ADDISON PUBLIC WORKS DEPARTMENT WILL APPROVE AND/OR DETERMINE THE TRAFFIC CONTROL PLAN AND WORKING HOURS. CONTACT THE ASSISTANT CITY ENGINEER OR THE PUBLIC WORKS INSPECTOR AT (972) 450-2871.
- TEMPORARY OR PERMANENT BARRICADES SHALL REMAIN AT ALL POINTS OF INGRESS OR EGRESS TO PREVENT PUBLIC USE UNTIL THE WORK RECEIVES FINAL ACCEPTANCE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE AT ALL TIMES DURING CONSTRUCTION, INCLUDING PROVIDING ALL TEMPORARY STRUCTURES OR IMPROVEMENTS AS NECESSARY FOR THE SAFETY OF THE PUBLIC PLATING, DURING NON-WORKING HOURS, ALONG EXISTING ROADWAYS AND TRAFFIC AREAS.
- THE TOWN OF ADDISON WILL PROVIDE A GEOTECHNICAL LABORATORY TO PERFORM APPROPRIATE TESTING DURING CONSTRUCTION ACTIVITIES. ANY TEST THAT FAILS TO MEET CITY REQUIREMENTS SHALL BE RETESTED AT THE CONTRACTORS EXPENSE.
- THE CONTRACTOR SHALL PROVIDE A MAINTENANCE BOND FOR PUBLIC INFRASTRUCTURE WORK IN THE FOLLOWING AMOUNTS:
  - 100% FOR VALUATIONS LESS THAN OR EQUAL TO \$5,000.
  - \$5,000 FOR VALUATION GREATER THAN \$5,000 AND LESS THAN \$50,000.
  - 10% FOR VALUATIONS GREATER THAN \$50,000.
 BONDS SHALL BE FOR A PERIOD OF TWO YEARS BEGINNING WITH THE DATE OF FINAL ACCEPTANCE BY THE TOWN.
- THE CONTRACTOR SHALL VERIFY THE SIZE, TYPE, ELEVATION, CONFIGURATION, AND ANGLATION OF EXISTING STORM DRAIN LINES PRIOR TO CONSTRUCTION OF TIE-IN MATERIALS. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR REPAIRS TO EXISTING FACILITIES DAMAGED BY HIS ACTIVITIES.
- THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, FENCES, TREES, SHRUBS, GAS MAINS, TELEPHONE CABLES, ELECTRIC CABLES, DRAINAGE PIPES, UTILITY SERVICES, AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW THE GROUND, THE COST OF WHICH SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- ROUGH GRADING SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF STORM DRAIN FACILITIES.
- ALL STORM DRAIN STRUCTURES INCLUDING MANHOLES, INLETS AND CLEANOUTS MUST BE ADJUSTED TO FINAL FINISHED GRADE BY THE CONTRACTOR.
- ALL PIPE FOR PUBLIC STORM DRAIN IMPROVEMENTS SHALL BE REINFORCED CONCRETE PIPE (RCP, CLASS II), UNLESS OTHERWISE NOTED. REINFORCED CONCRETE PIPE JOINTS SHALL BE SEALED WITH RAMMECK OR APPROVED EQUAL.
- ALL STORM SEWER SYSTEMS WITH RADII LESS THAN 100' SHALL UTILIZE 4' LONG PIPE JOINTS WITH BEVELED ENDS (B-2 RADIUS PIPE). ALL JOINTS MUST BE TIGHT AND SHALL NOT GAP MORE THAN 1/8" THE JOINT LENGTH.
- ALL PIPE ENTERING PUBLIC STORM DRAIN STRUCTURES SHALL BE GROUTED TO ASSURE WATERTIGHT CONNECTIONS.
- EMBEDMENT FOR STORM DRAIN PIPING SHALL CONSIST OF GRADE 4 CRUSHED STONE (3" BELOW PIPE FOR 24" AND SMALLER PIPES, AND 4" BELOW PIPE FOR 30" PIPES AND LARGER) TO THE CRADLE OF THE PIPE, WITH SELECT NATIVE SOIL LESS THAN 3" IN DIAMETER OR GRANULAR MATERIAL TO 6" OVER THE TOP OF PIPE.
- FINISH BACKFILL SHALL BE NATIVE SOIL FREE OF ALL ROCKS AND CLODS GREATER THAN THREE INCHES IN DIAMETER, COMPACTED TO 95% STANDARD PROCTOR DENSITY, IN SIX (6) INCH MAXIMUM LOOSE LIFTS, WITH ZERO TO PLUS THREE, OPTIMUM MOISTURE.
- CONCRETE COLLARS SHALL BE INSTALLED AT ALL CHANGES IN CONDUIT SIZE AND AT ALL JOINTS THAT ARE PULLED IN EXCESS OF THAT RECOMMENDED BY THE CONDUIT MANUFACTURER.
- THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF EXISTING STORM DRAIN FACILITIES DESIGNATED TO BE REMOVED, UPON COMPLETION AND ACCEPTANCE OF NEW STORM DRAINAGE FACILITIES.
- ALL STORM DRAIN PIPE SHALL BE CAMERA INSPECTED BY THE CONTRACTOR AFTER THE INSTALLATION OF ALL UTILITIES AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHALL CALL (972) 450-2847 TO REQUEST A FINAL WALK-THROUGH INSPECTION OF THE PUBLIC INFRASTRUCTURE WORK.
- ANY ADJACENT PROPERTIES AFFECTED BY THE CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.



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NORTH

0 60 120 180 240  
 GRAPHIC SCALE IN FEET  
 SCALE: 1"=120'

NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE

**OVERALL STORM DRAIN LAYOUT & NOTES**

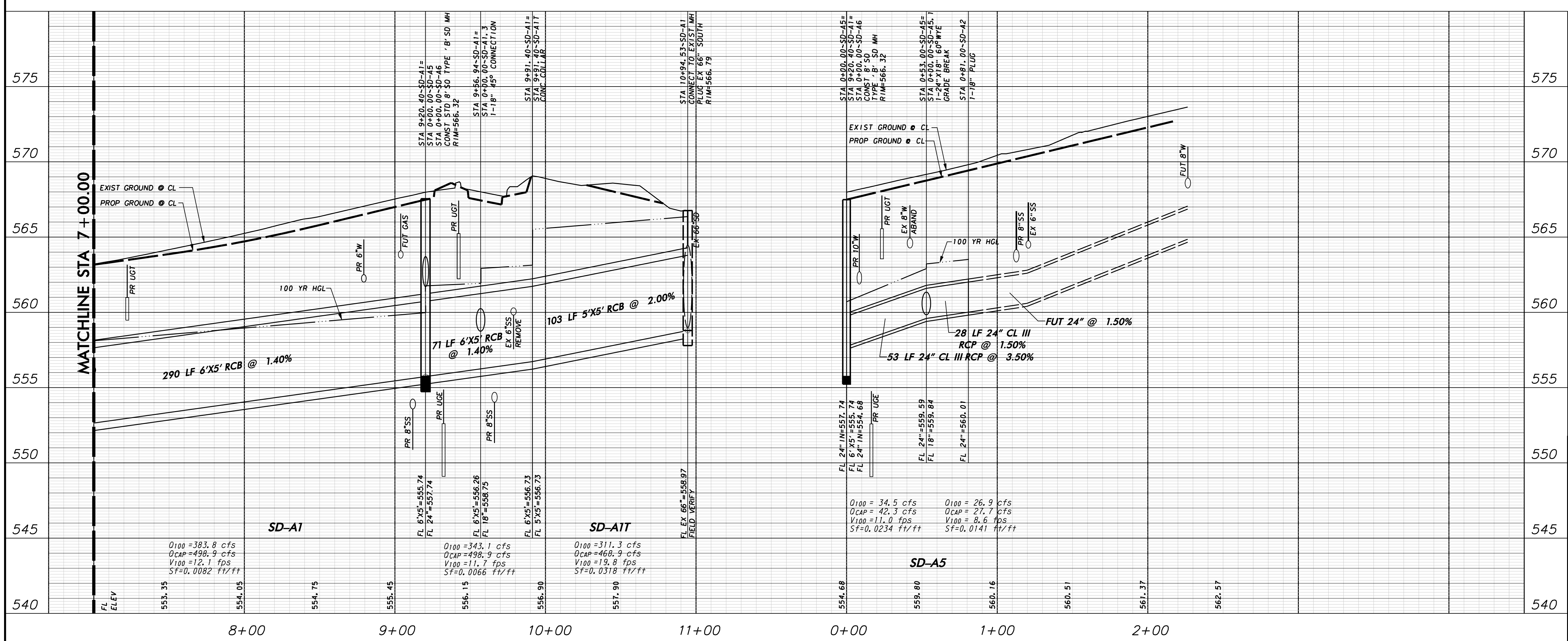
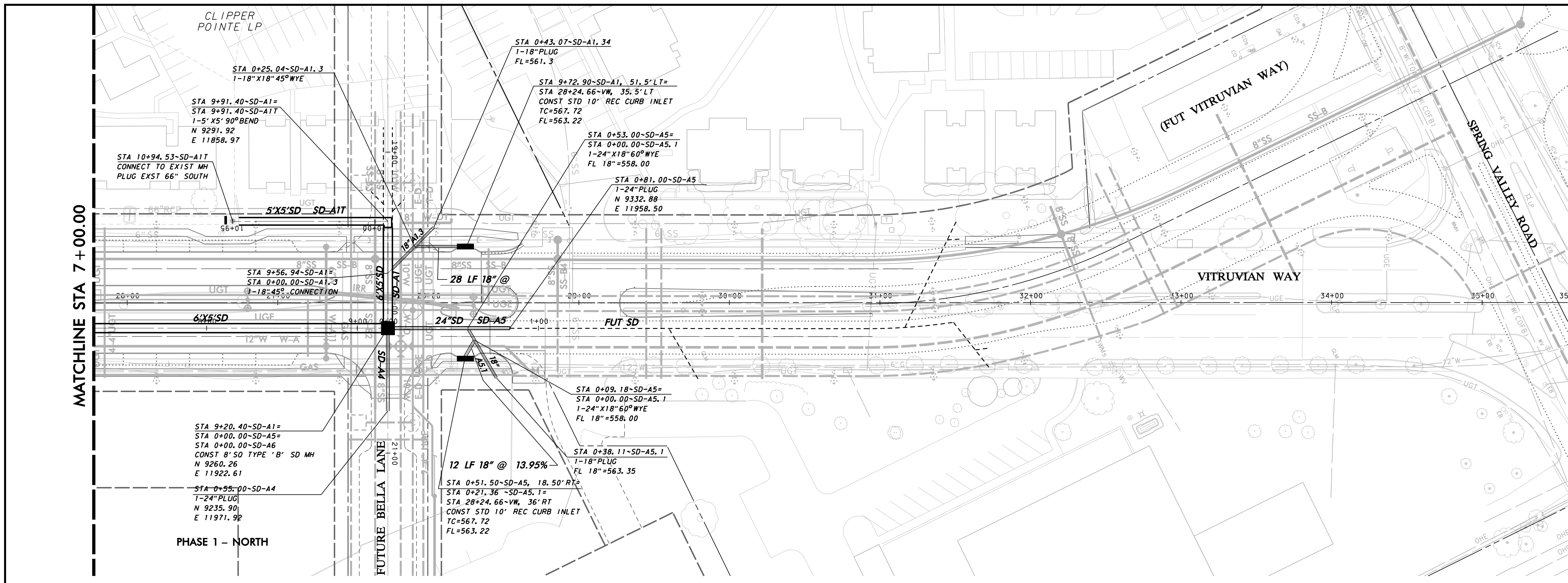
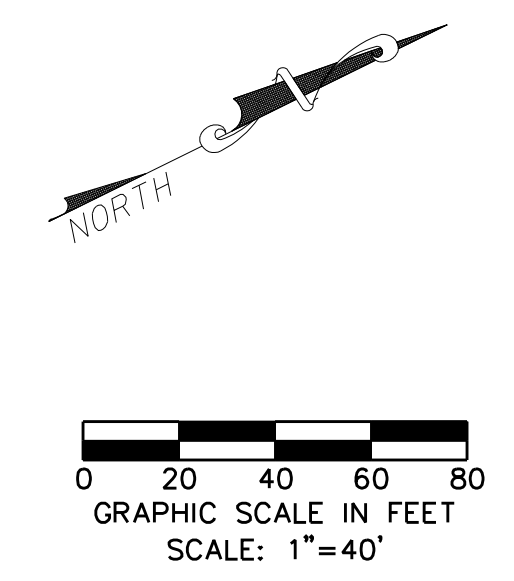
**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	32

RECORD DRAWINGS 08/25/10

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



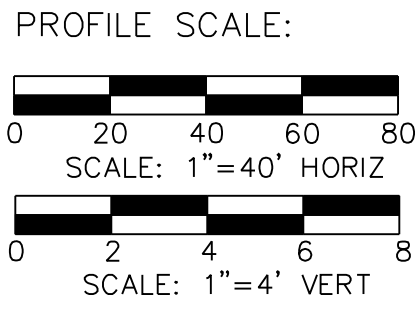


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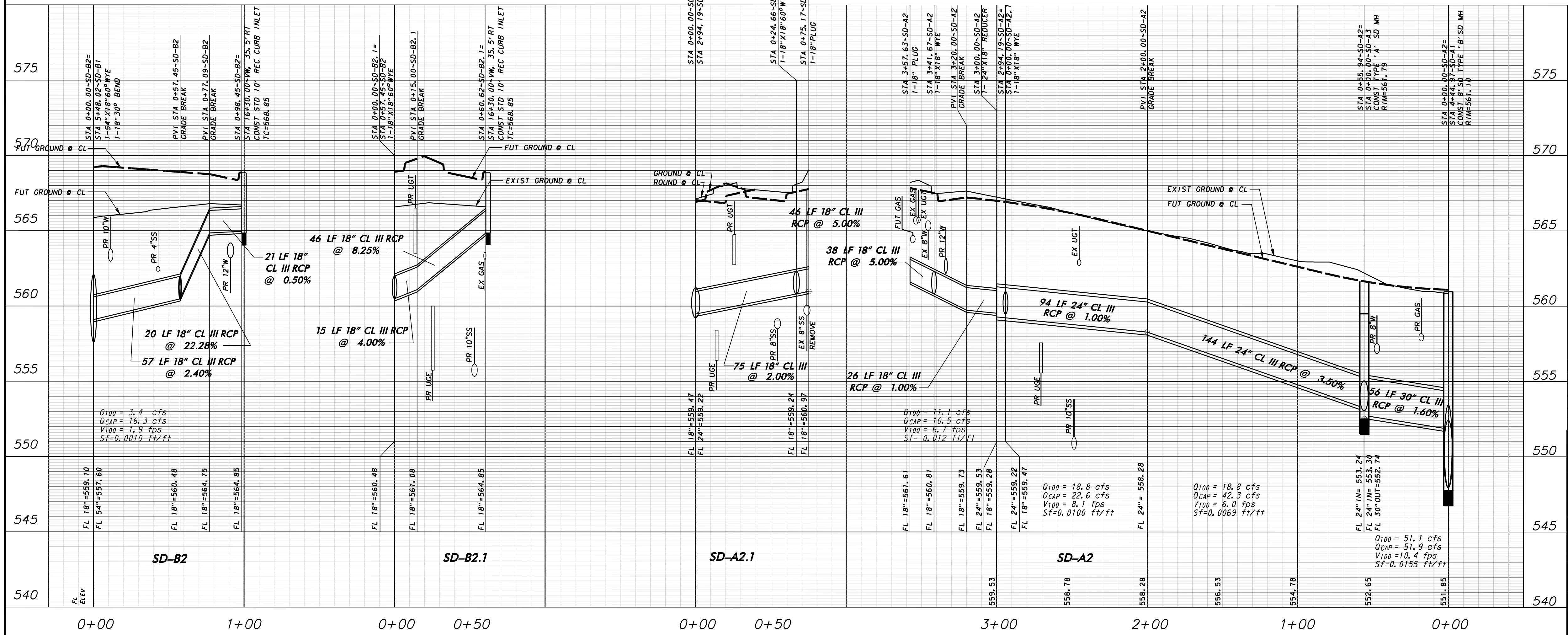
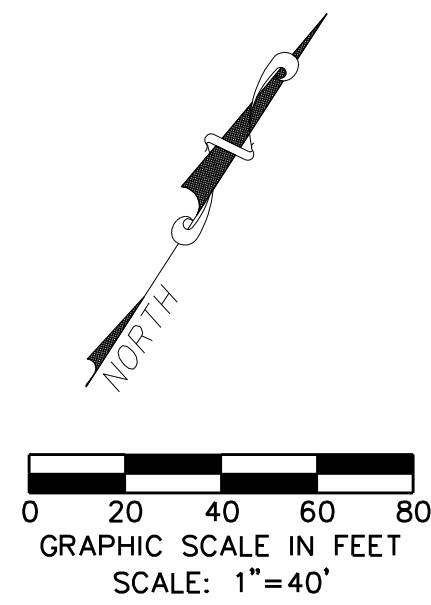
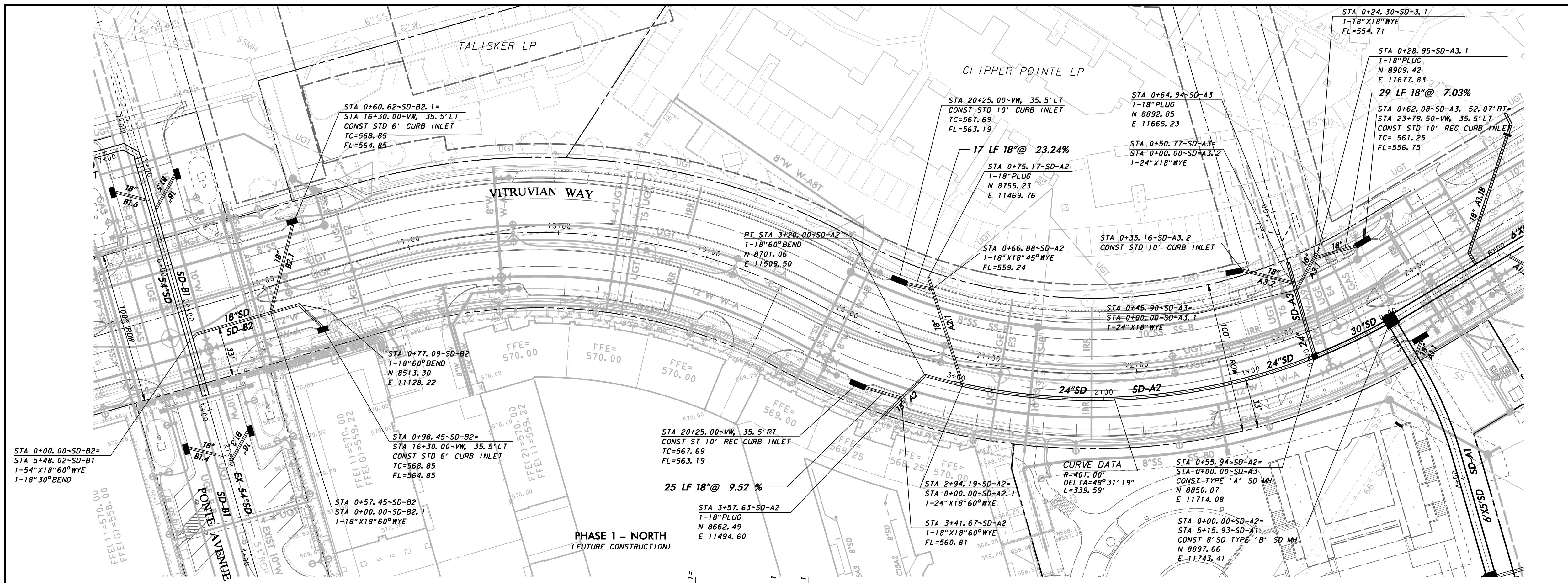
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**STORM DRAIN PLAN & PROFILE-VW**  
 LINE A1-STA. 7+00.00 TO 9+81.00 & LINE A5

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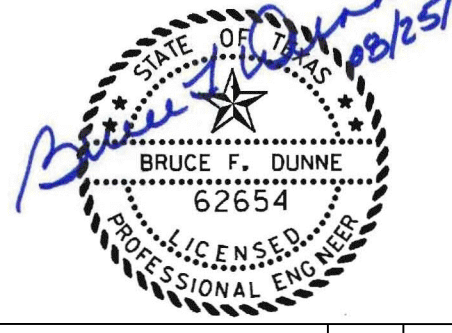
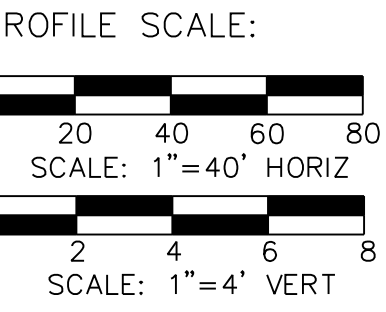
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PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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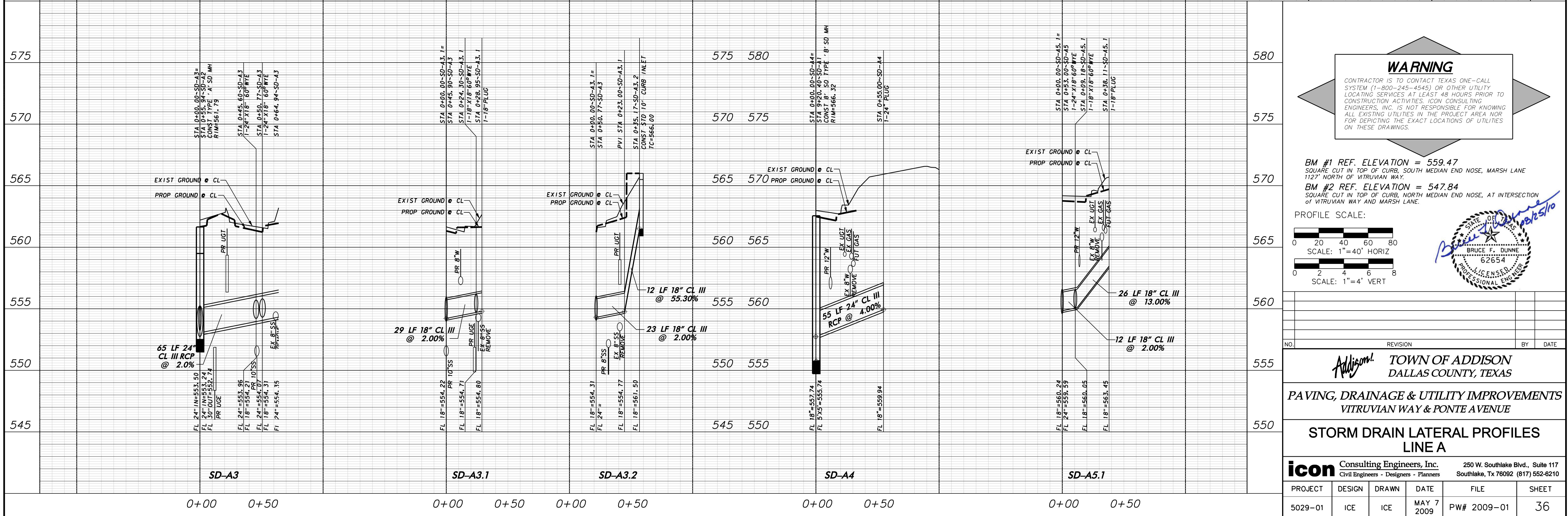
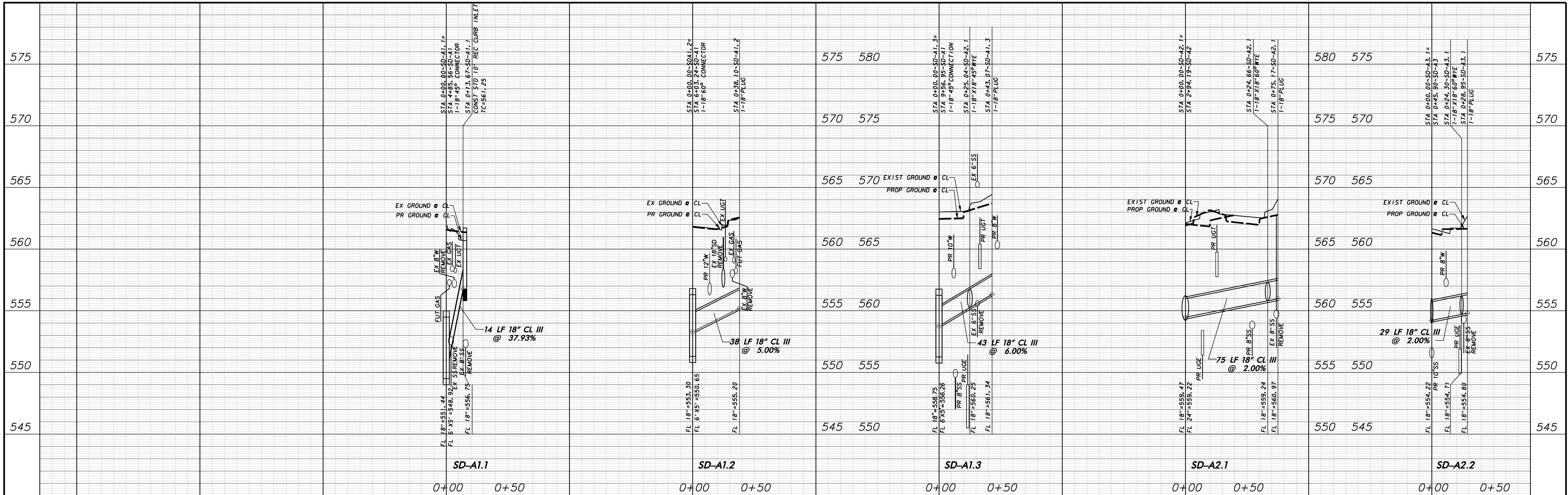
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**STORM DRAIN PLAN & PROFILE-VW  
 LINES A2, A3, A4 & B2**

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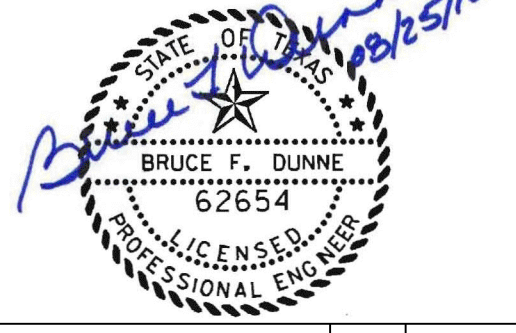
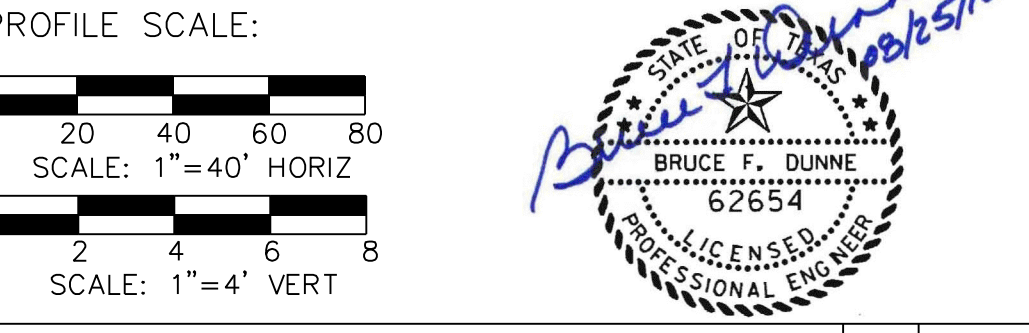
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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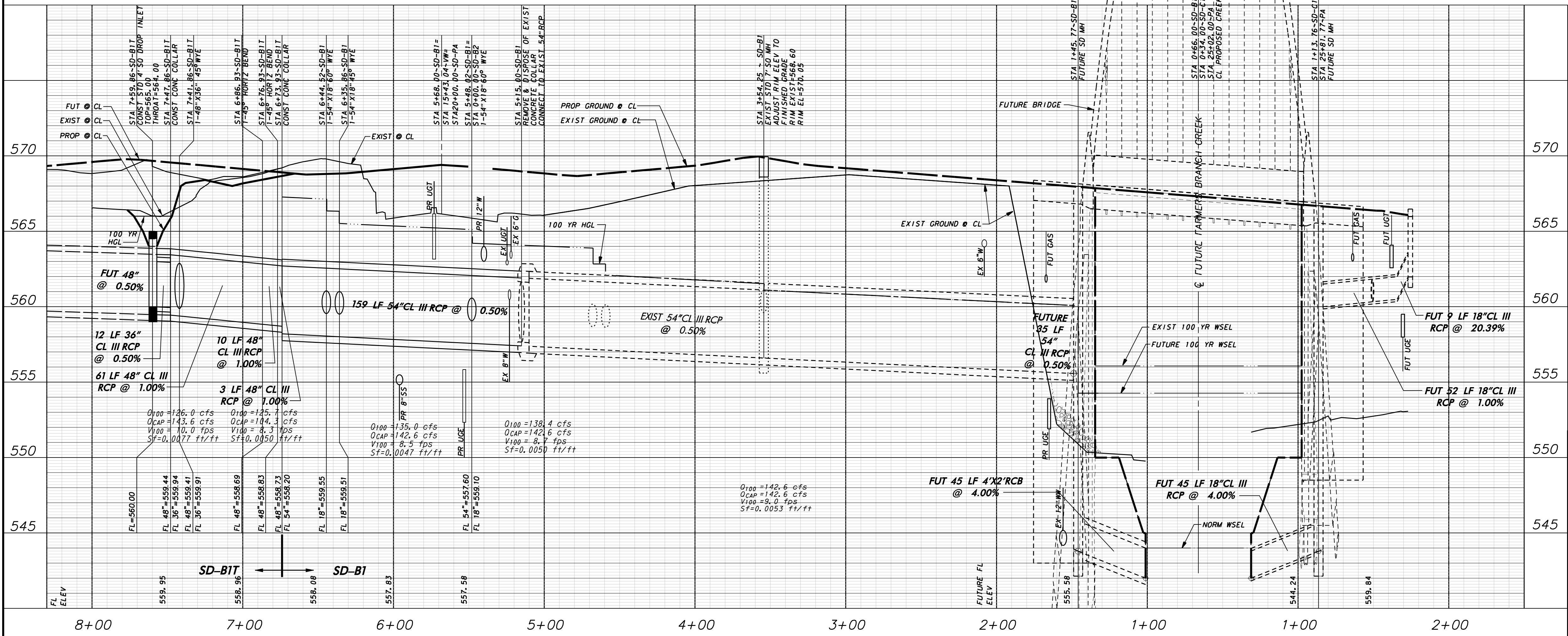
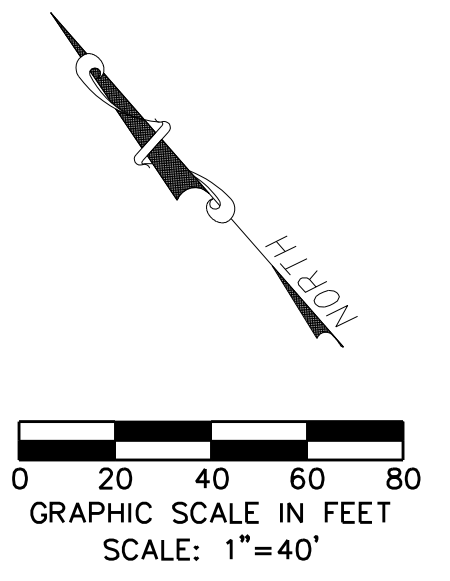
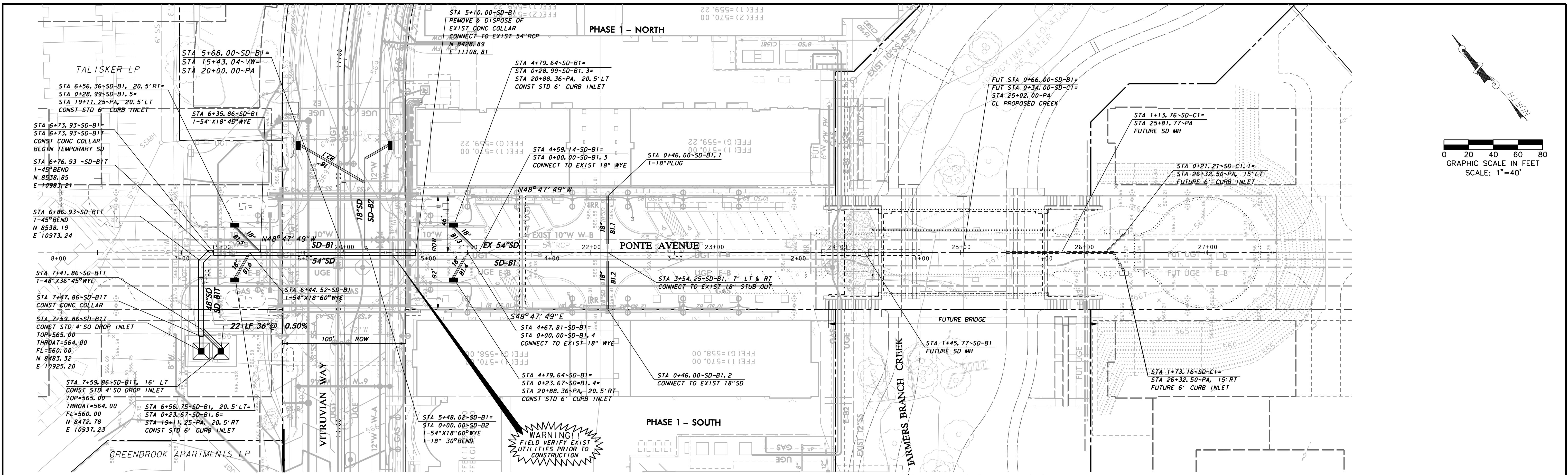
**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**STORM DRAIN LATERAL PROFILES  
 LINE A**

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PW# 2009-01	36		

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

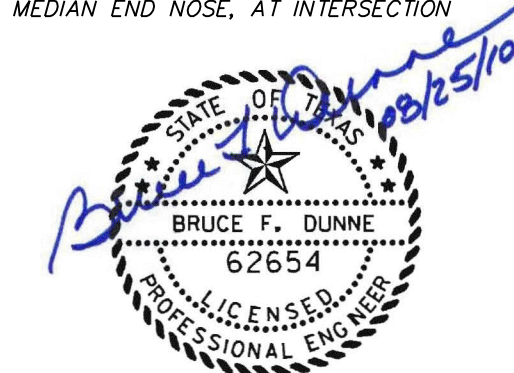
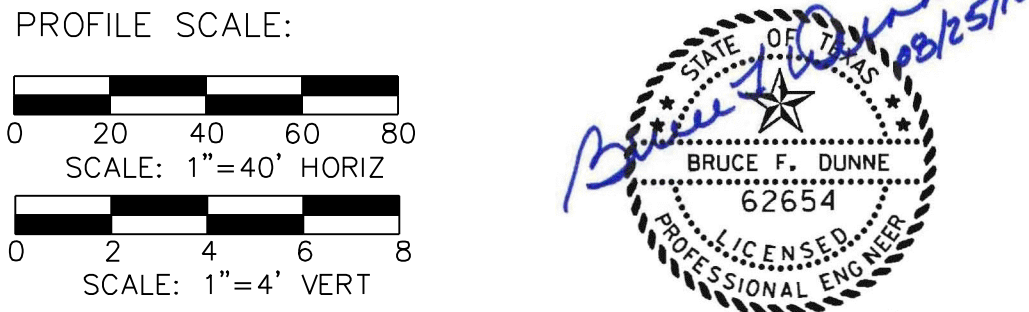


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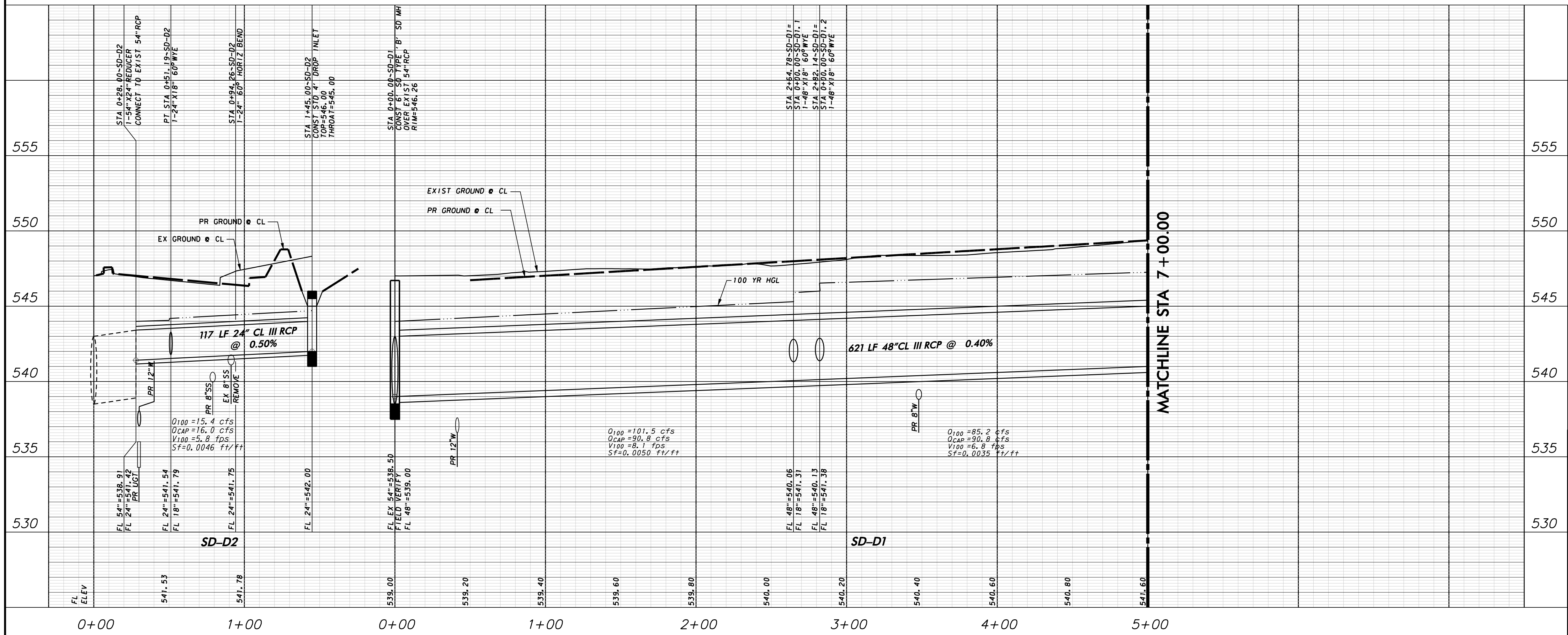
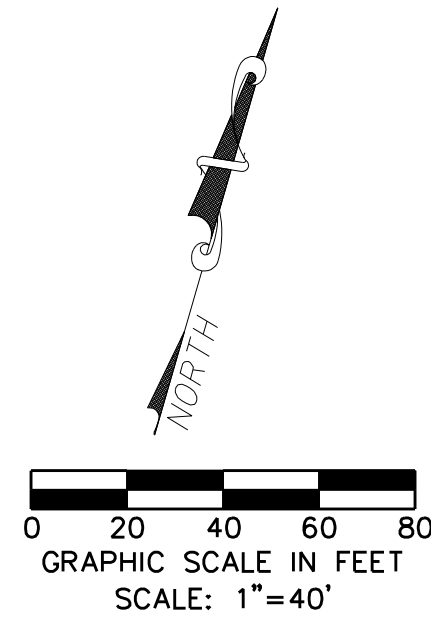
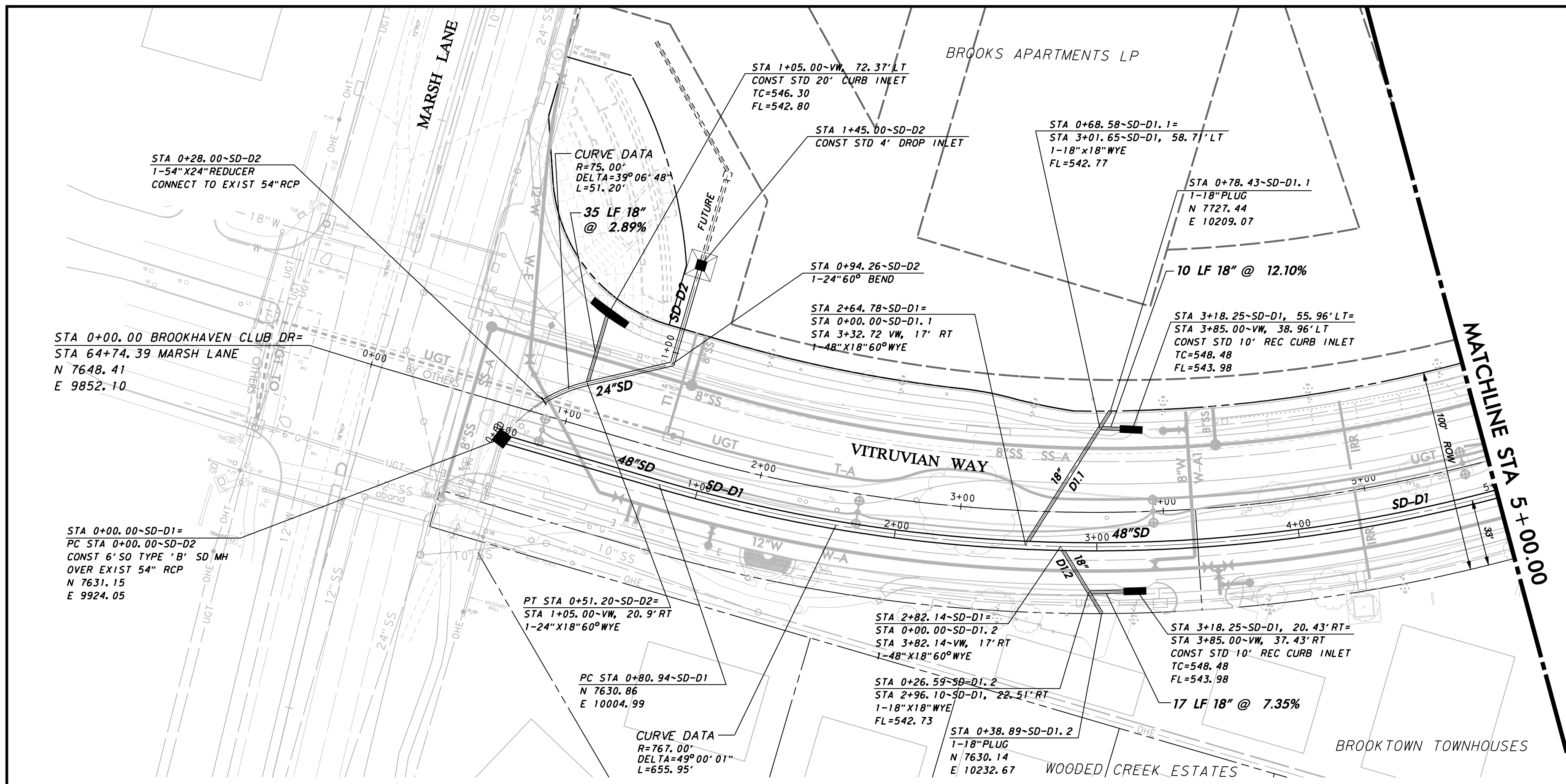
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<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY & PONTE AVENUE							
<b>STORM DRAIN PLAN &amp; PROFILE-PA</b> LINES B1 & C1							
<b>icon</b>		Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117		Southlake, Tx 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET		
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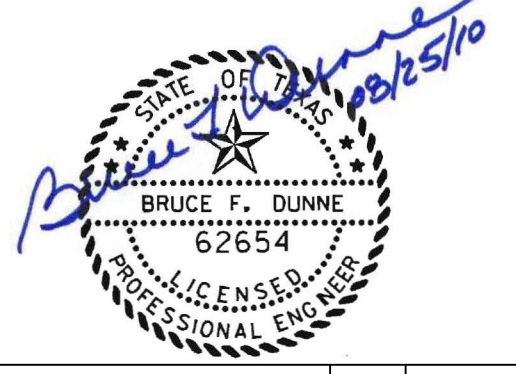
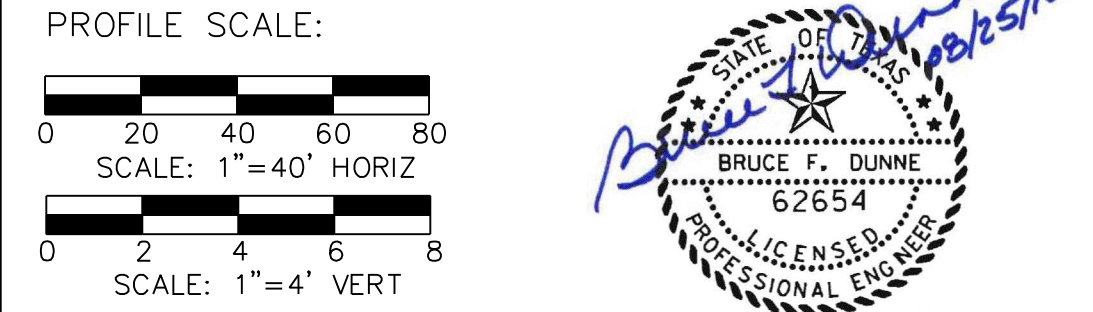
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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**Addison!** TOWN OF ADDISON  
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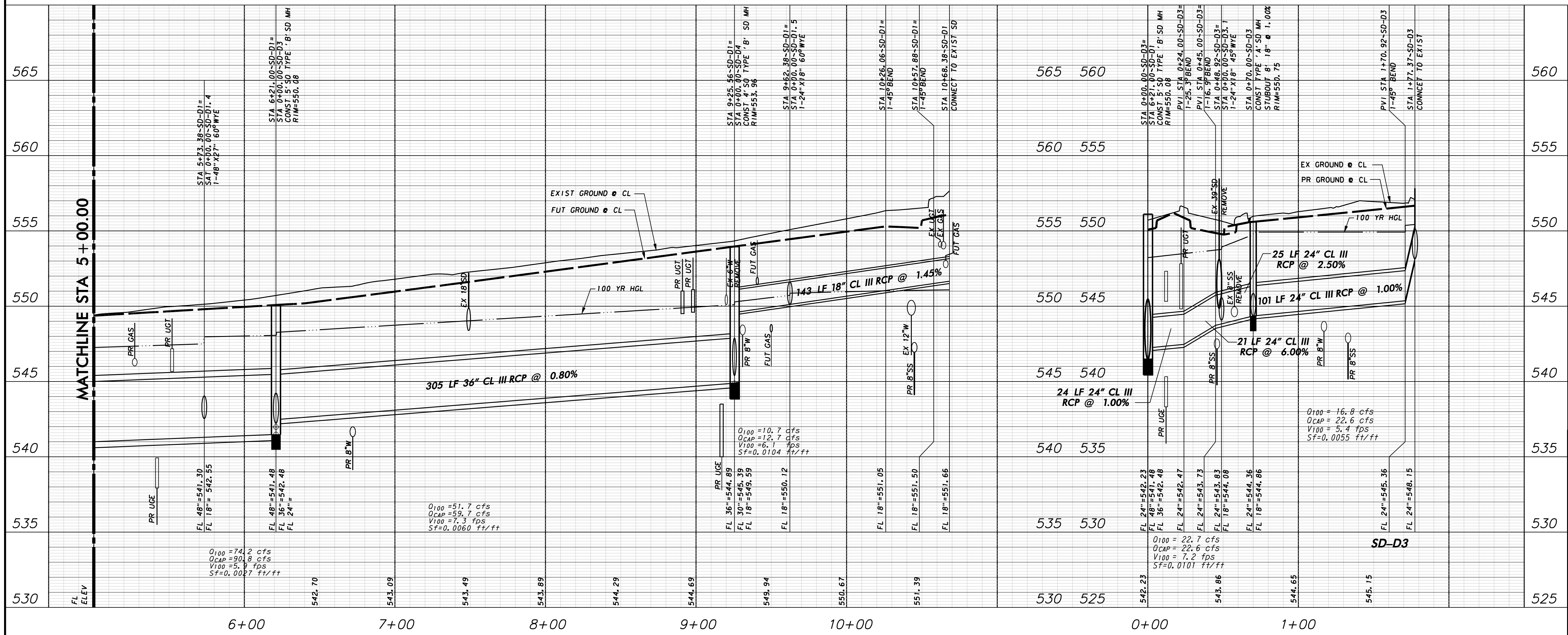
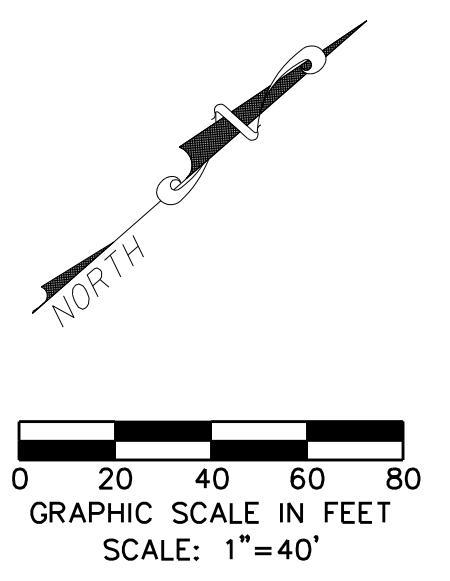
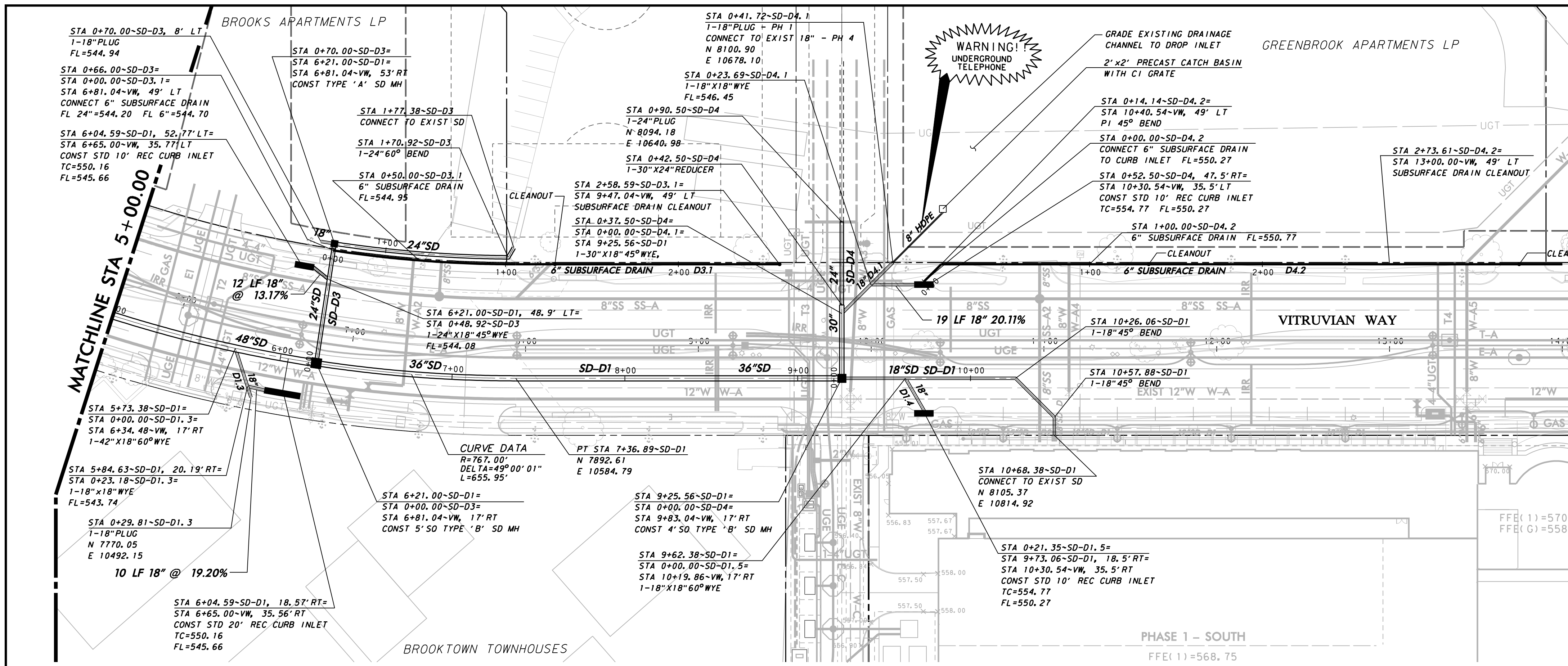
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**STORM DRAIN PLAN & PROFILE-VW**  
**LINE D1-STA. 0+00.00 TO 5+00.00 & LINE D2**

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PROJECT	DESIGN	DRAWN	DATE
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FILE	SHEET		
PW# 2009-01	38		

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



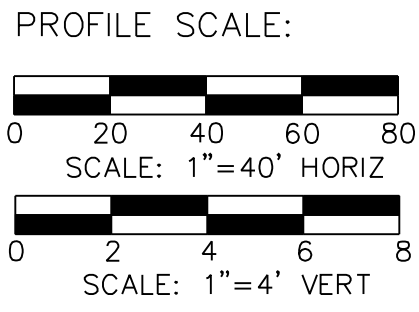


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BM #1 REF. ELEVATION = 559.47  
 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

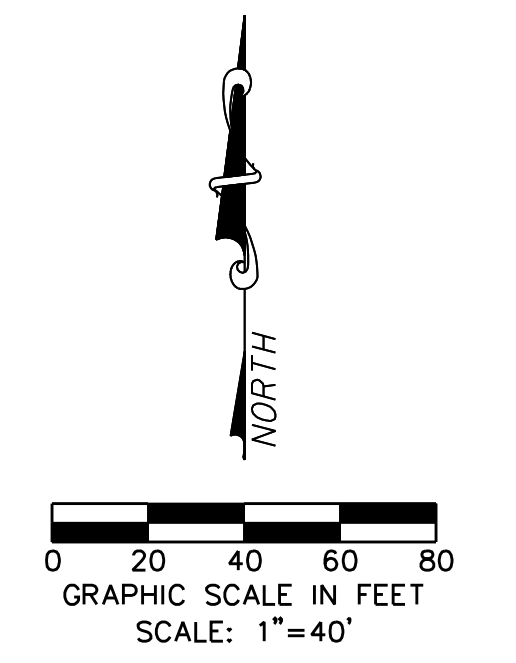
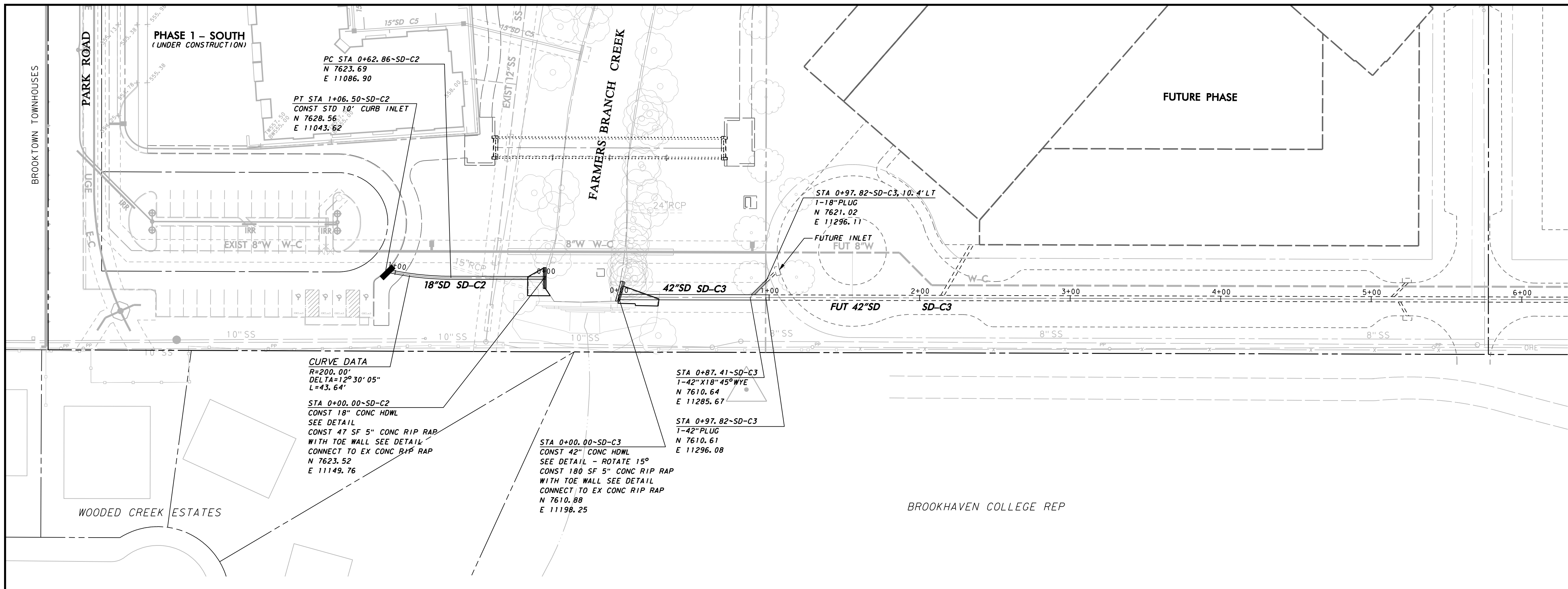
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**STORM DRAIN PLAN & PROFILE-VW**  
LINE D1-STA. 5+00.00 TO 11+29.06 & LINE D3

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, TX 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	39

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

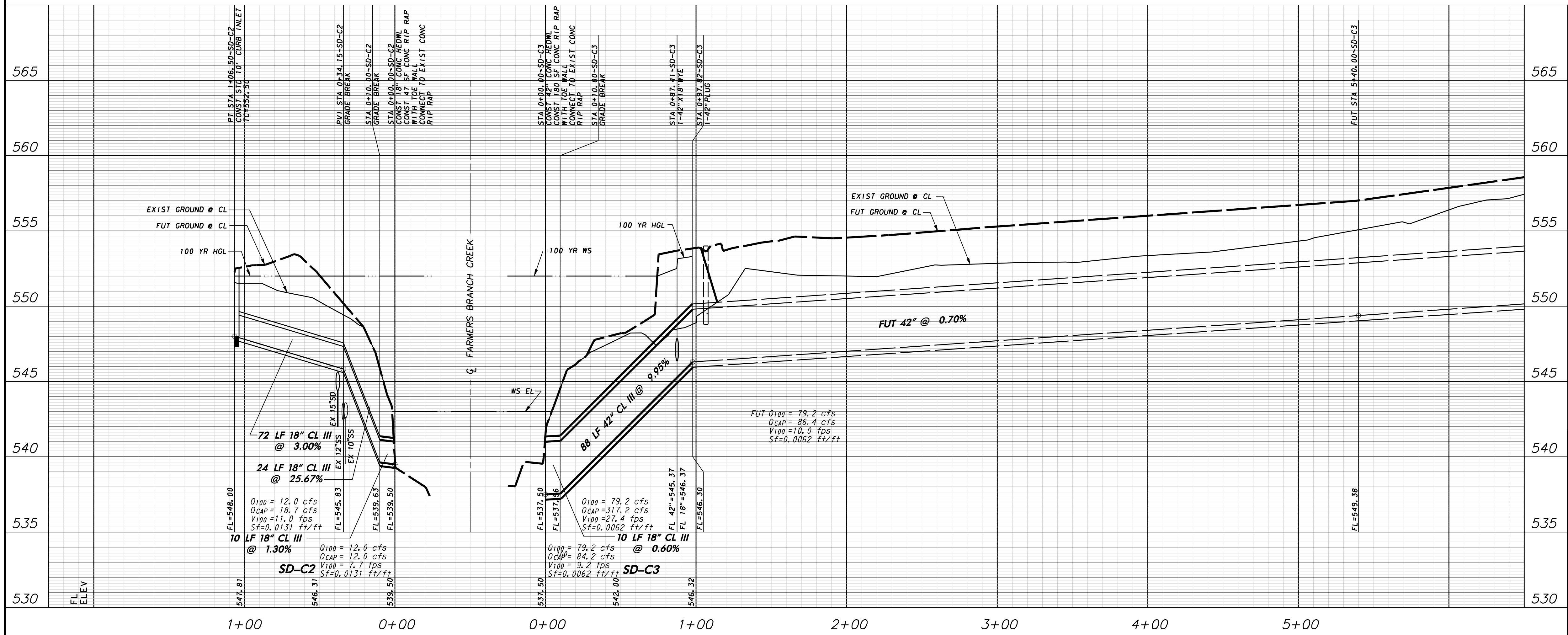


**CURVE DATA**  
 R=200.00'  
 DELTA=12° 30' 05"  
 L=43.64'  
 STA 0+00.00-SD-C2  
 CONST 18" CONC HDWL  
 SEE DETAIL  
 CONST 47 SF 5" CONC RIP RAP  
 WITH TOE WALL SEE DETAIL  
 CONNECT TO EX CONC RIP RAP  
 N 7623.52  
 E 11149.76

STA 0+00.00-SD-C3  
 CONST 42" CONC HDWL  
 SEE DETAIL - ROTATE 15°  
 CONST 180 SF 5" CONC RIP RAP  
 WITH TOE WALL SEE DETAIL  
 CONNECT TO EX CONC RIP RAP  
 N 7610.88  
 E 11198.25

STA 0+87.41-SD-C3  
 T-42" X 18" 45° WYE  
 N 7610.64  
 E 11285.67

STA 0+97.82-SD-C3  
 T-42" PLUG  
 N 7610.61  
 E 11296.08

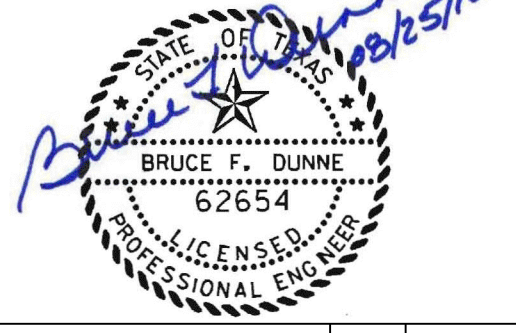
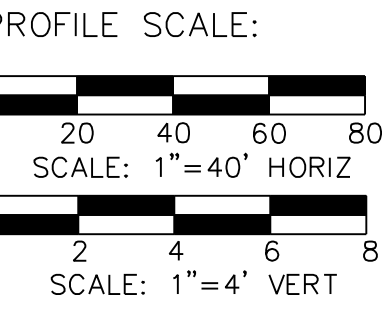


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 1127' NORTH OF VITRUVIAN WAY.

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 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION  
 OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

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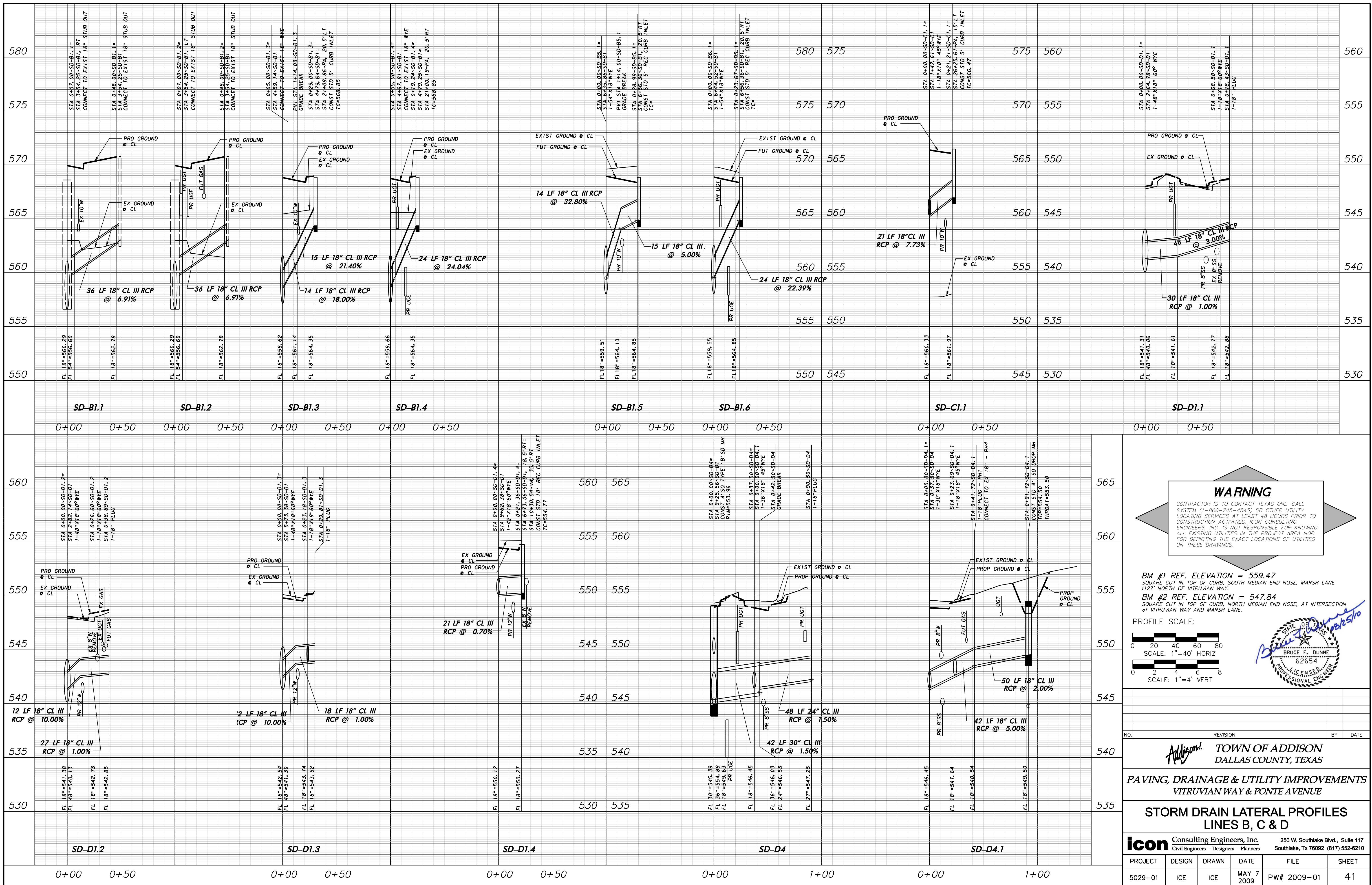
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE

**STORM DRAIN PLAN & PROFILE-PARK RD**  
 LINES C2 & C3

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	40

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

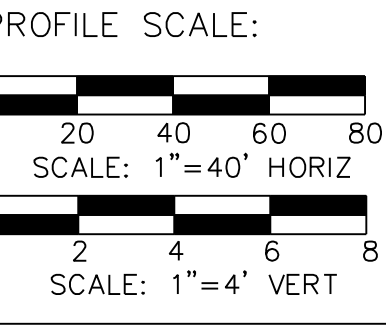


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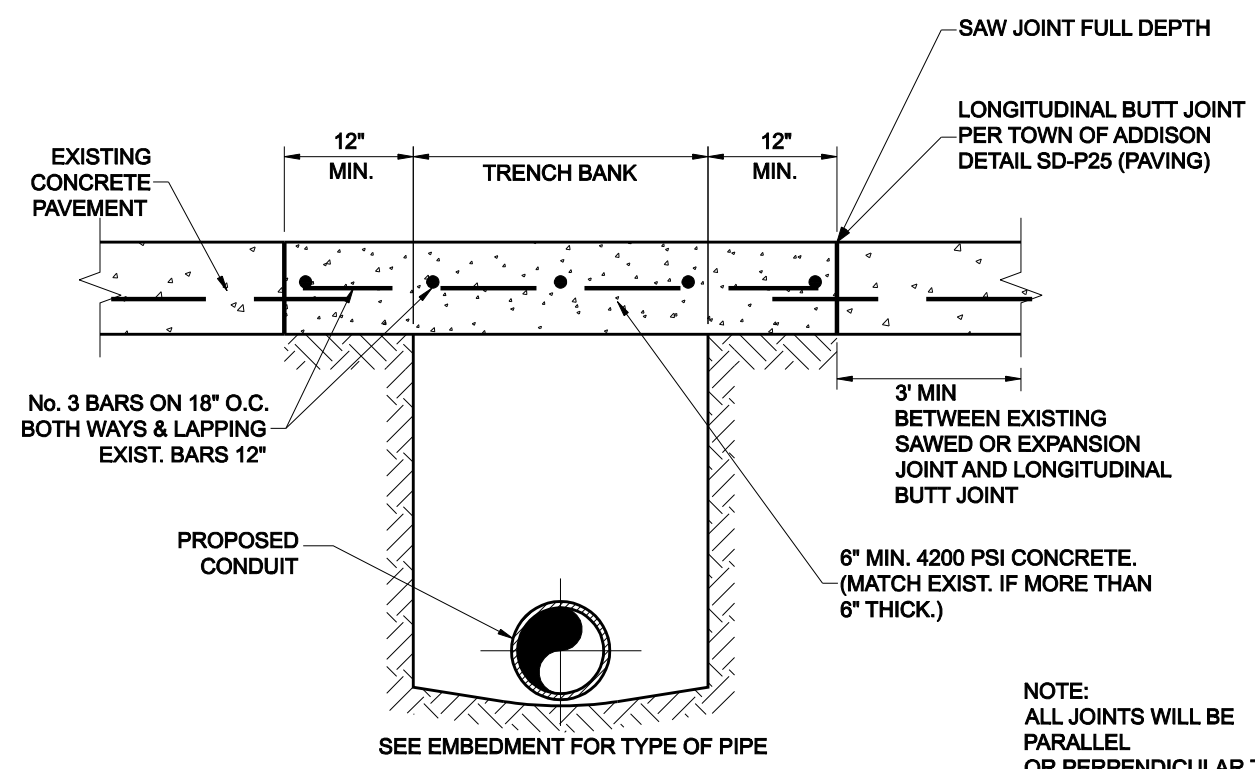
**ADDISON!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

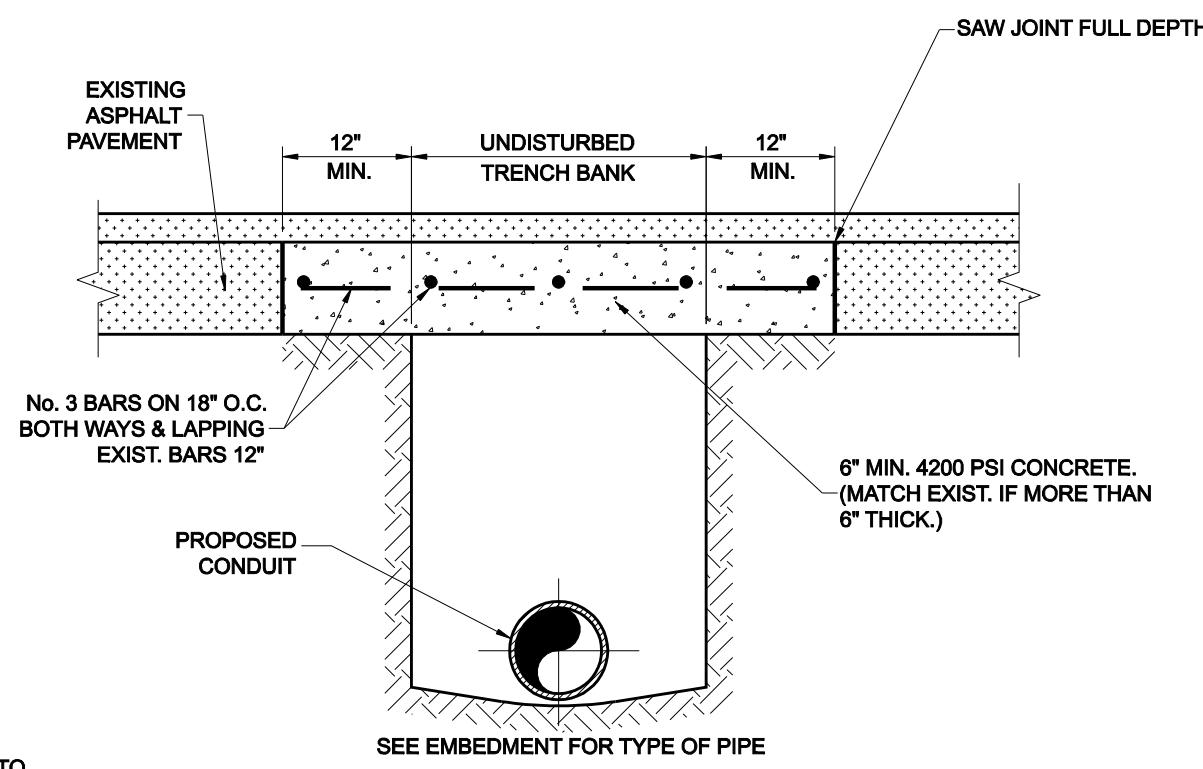
**STORM DRAIN LATERAL PROFILES  
 LINES B, C & D**

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
			FILE
			PW# 2009-01
			SHEET
			41

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

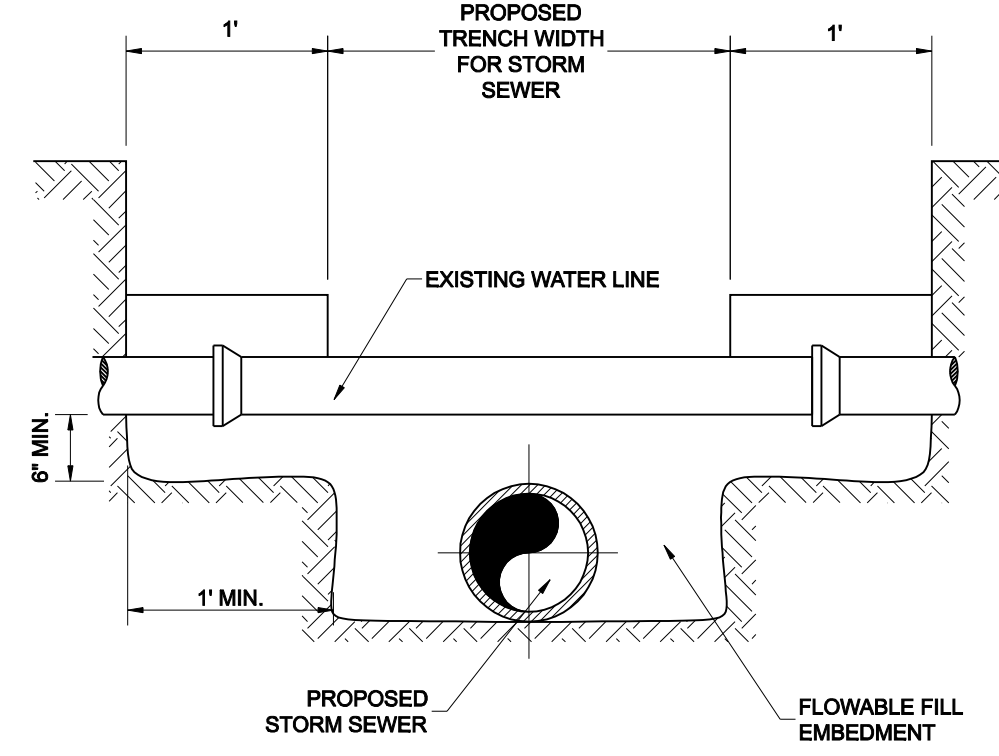


**CONCRETE STREET OR DRIVEWAY REPAIR**  
N.T.S.

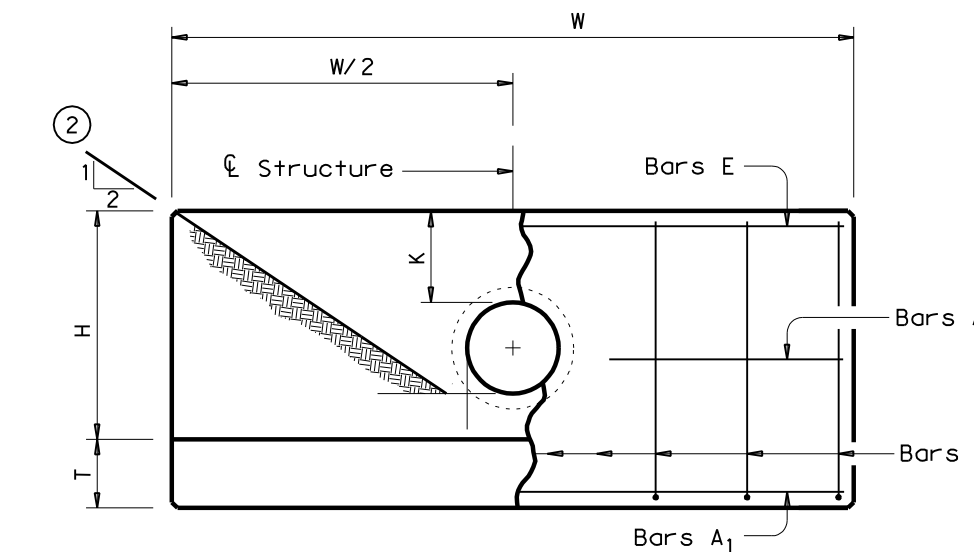


**ASPHALT STREET OR DRIVEWAY REPAIR**  
N.T.S.

NOTE:  
ALL JOINTS WILL BE PARALLEL OR PERPENDICULAR TO DIRECTION OF TRAVEL



**DETAIL OF UTILITY SUPPORT**

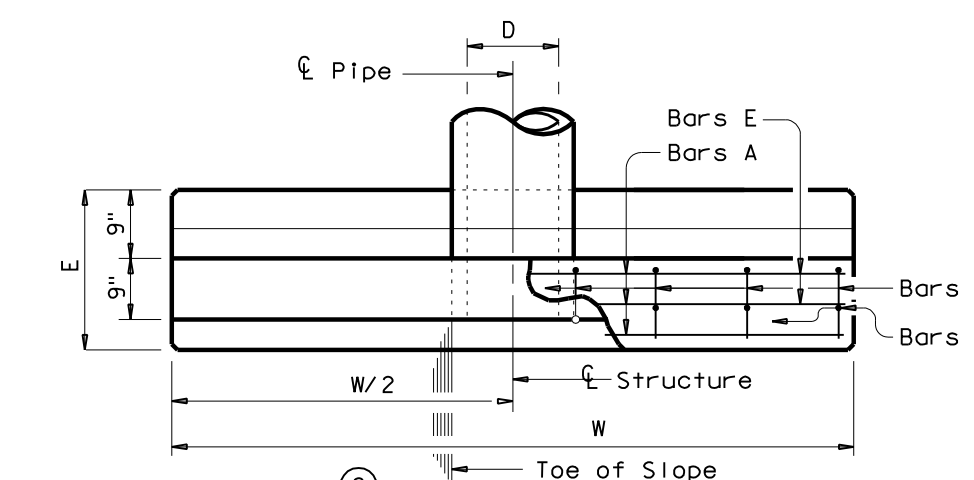


**ELEVATION**

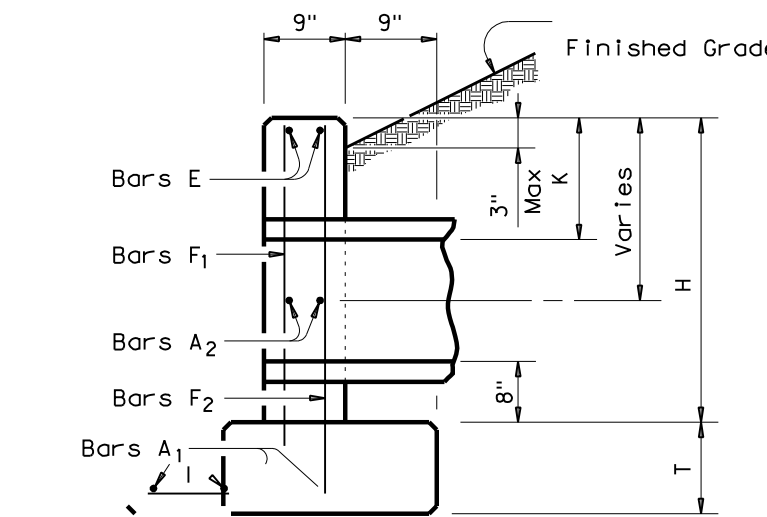
DIA. OF PIPE, D	W	K	H	T	E
12"	9'-0"	1'-0"	2'-8"	9"	1'-9"
15"	10'-3"	1'-0"	2'-11"	9"	1'-9"
18"	11'-6"	1'-0"	3'-2"	9"	1'-9"
21"	12'-9"	1'-0"	3'-5"	9"	2'-0"
24"	14'-0"	1'-0"	3'-8"	9"	2'-0"
30"	16'-6"	1'-0"	4'-2"	9"	2'-3"
36"	19'-0"	1'-0"	4'-8"	1'-0"	2'-6"
42"	21'-6"	1'-0"	5'-2"	1'-0"	2'-9"

Bar	Size	Spa	No.
A1	# 5	~	2
A2	# 5	1'-6"	~
E	# 5	~	2
F	# 5	1'-0"	~

Quantities shown are for one structure end. (One headwall)



**PLAN OF NON-SKEWED PIPE**



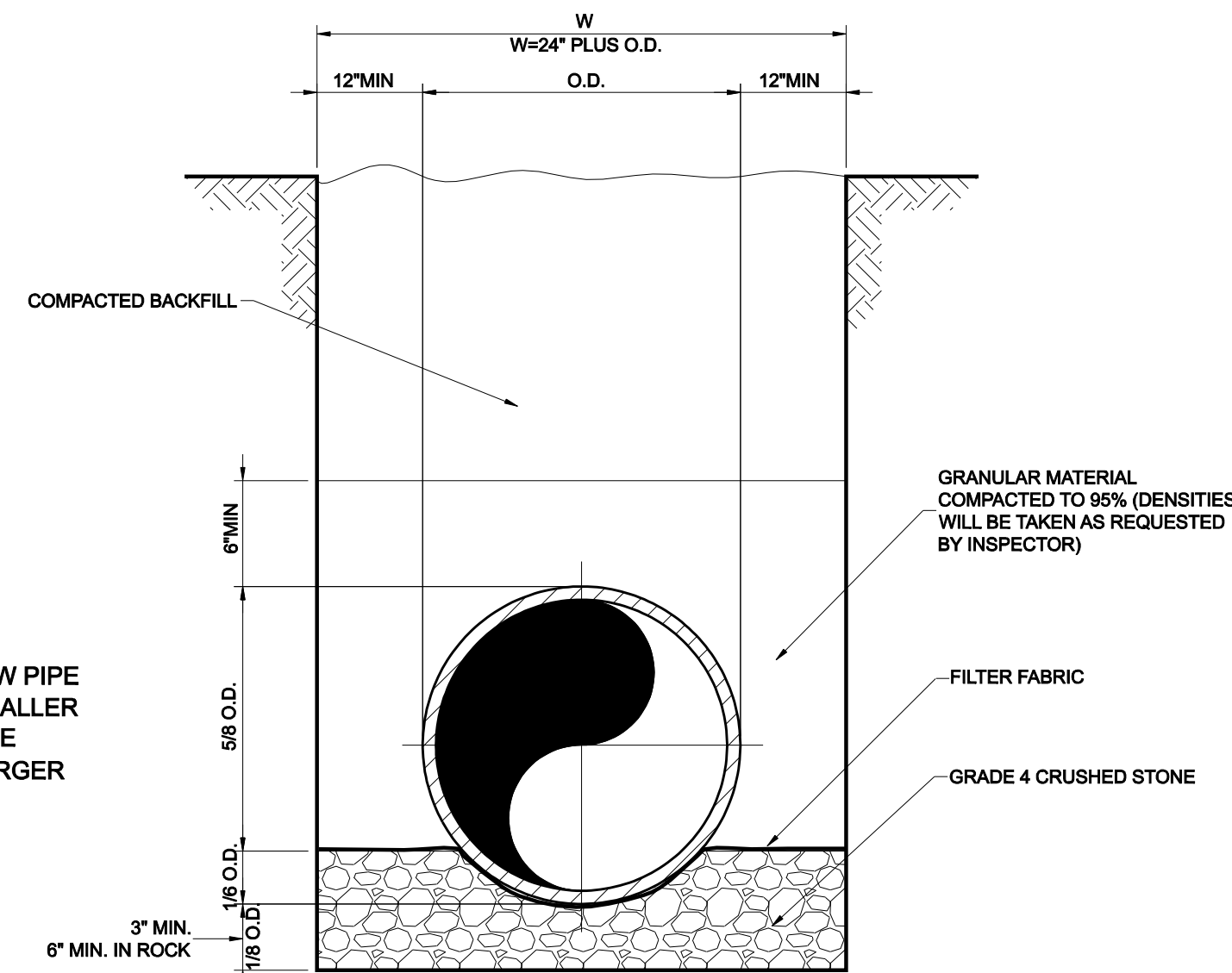
**SECTION**

**GENERAL NOTES:**  
Designed according to current AASHTO Standard and Interim Specifications.  
Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete.  
All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.  
No bridge rails of any type may be mounted directly to these culvert headwalls.

**CONCRETE HEADWALL WITH PARALLEL WINGS FOR NON-SKEWED PIPE CULVERT**  
NOT TO SCALE

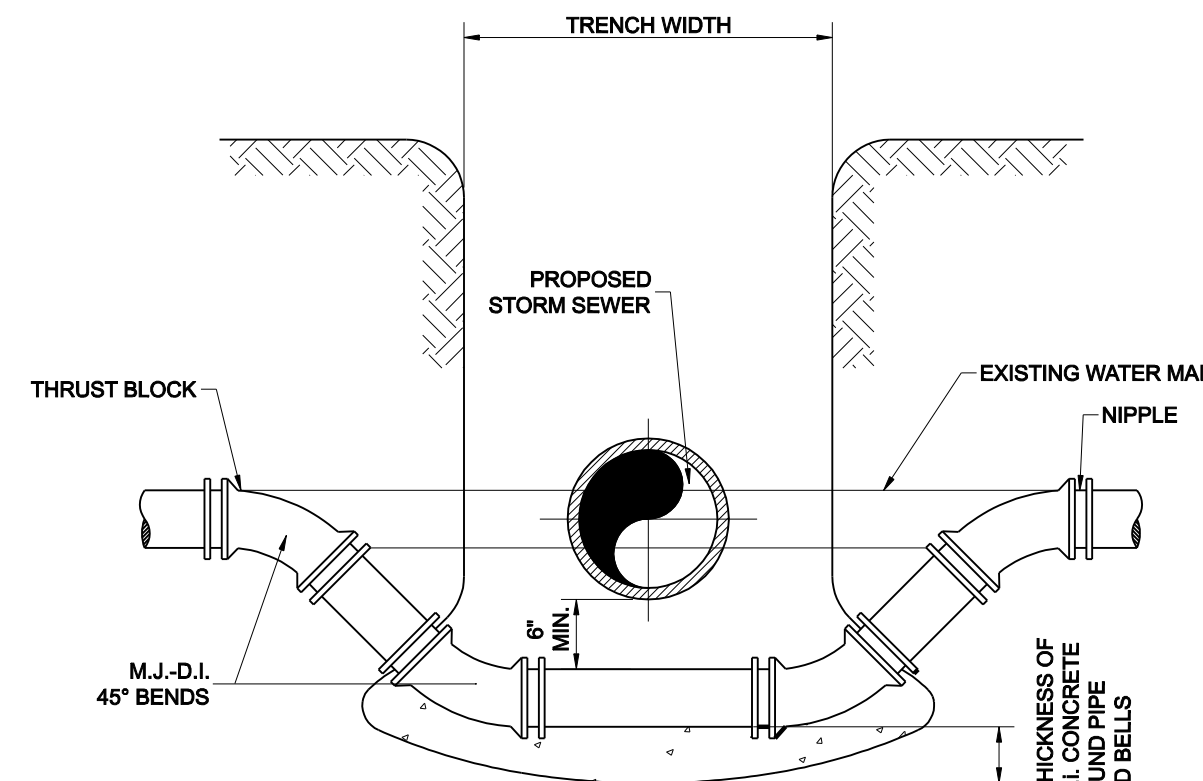
**GENERAL NOTES**

- ALL CONCRETE DRAINAGE STRUCTURES SHALL HAVE A MINIMUM COMPRESSED STRENGTH OF 3600 P.S.I.
- ALL CRUSHED STONE SHALL BE 3/4", PASSING #4 SIEVE.
- ALL FIELD JOINTS WILL BE APPROVED BY THE CITY ENGINEER IF NECESSARY. FIELD JOINTS SHALL BE WIPED ON THE INSIDE AND OUTSIDE TO PROVIDE FOR SMOOTH FLOW OF WATER.
- RAMNECK COMPOUND OR APPROVED EQUAL SHALL BE USED FOR JOINT SEALS.
- ALL STORM SEWER PIPE SHALL BE CAMERA INSPECTED AFTER THE INSTALLATION OF ALL PAVING, UTILITIES, AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

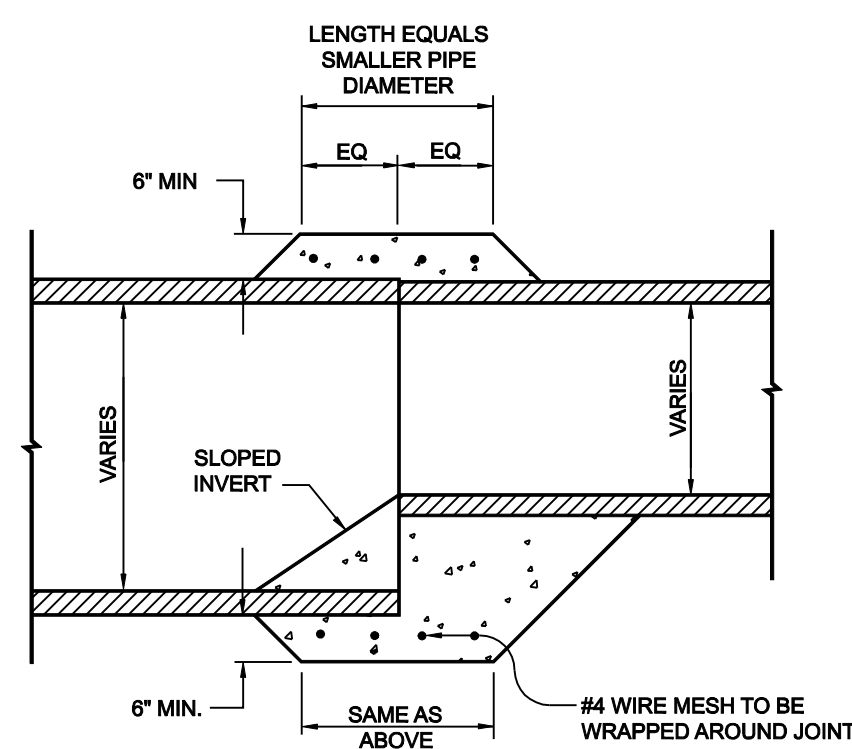


**RCP STORM SEWER PIPE BEDDING**

NOTE:  
DEPTH OF TRENCH BELOW PIPE  
3" MIN. FOR 27" PIPE & SMALLER  
4" MIN. FOR 30" TO 60" PIPE  
6" MIN. FOR 66" PIPE & LARGER

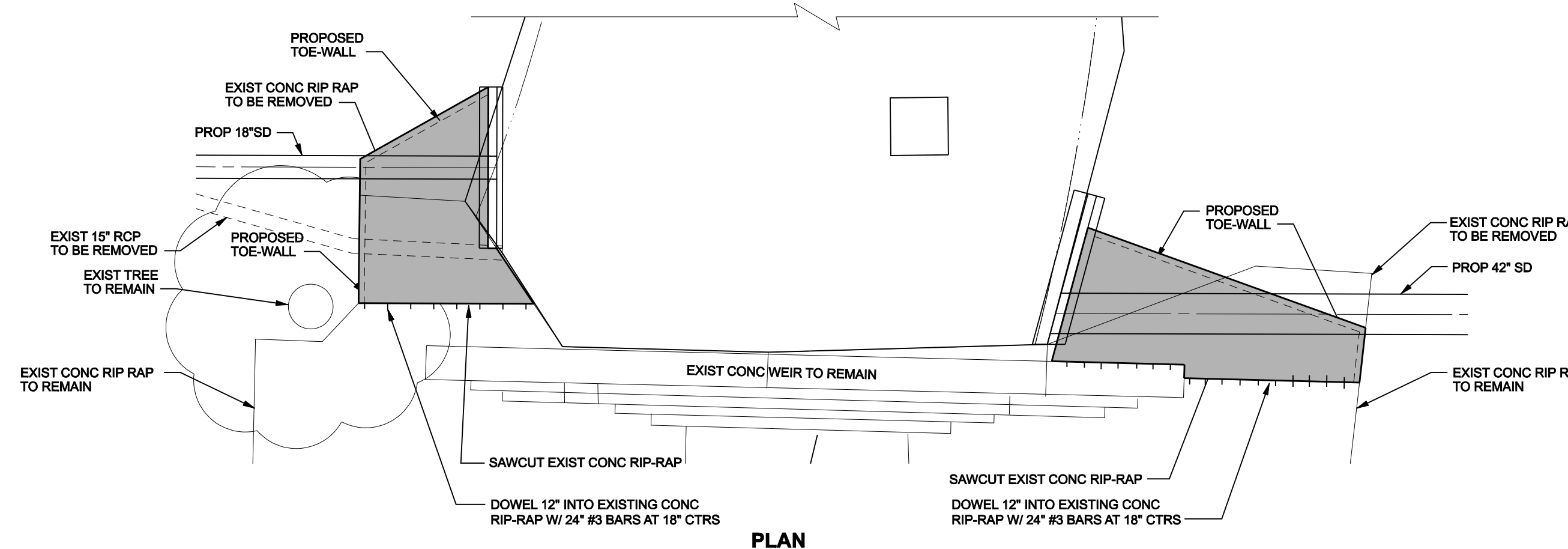


**DETAIL FOR WATER MAIN LOWERING**

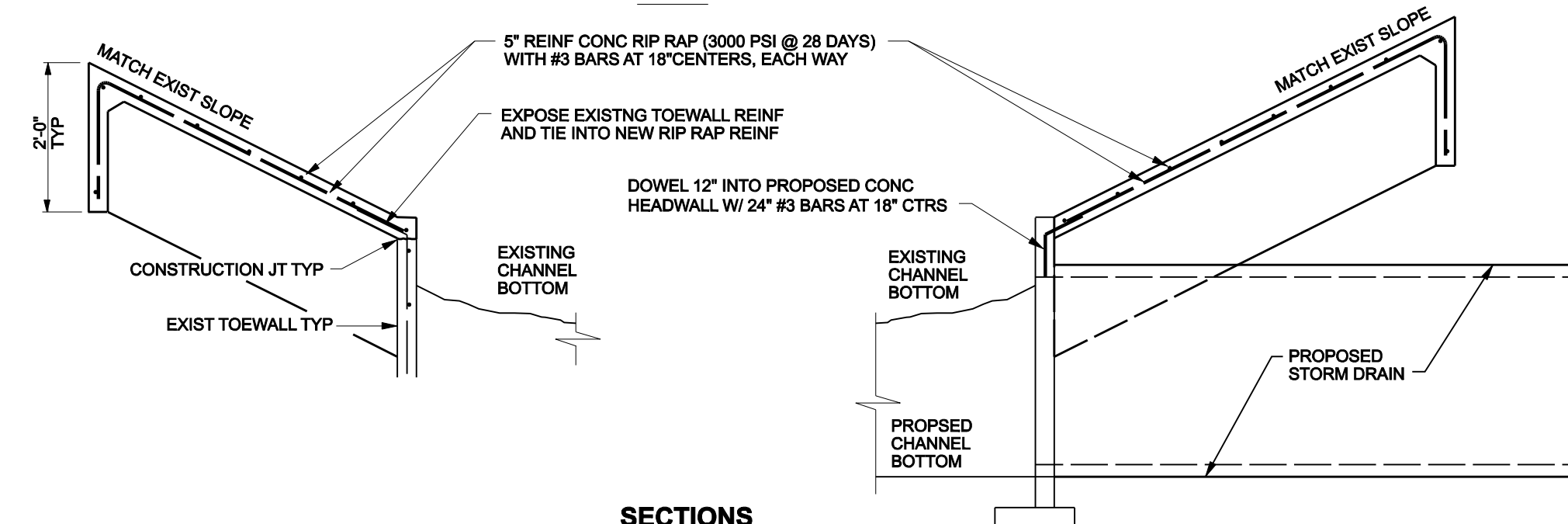


**PIPE COLLAR DETAIL**

- NOTES
- THIS PROCEDURE/DETAIL WILL ONLY BE USED WHEN 1 PREFAB REDUCTION IS NOT POSSIBLE.
  - CONCRETE FOR COLLAR WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS OTHER BIDS.
  - CONCRETE SHALL BE 5 SACK 3000 PSI.



**PLAN**



**SECTIONS**

**CONCRETE RIP RAP - SD C-2 & C-3**  
NOT TO SCALE

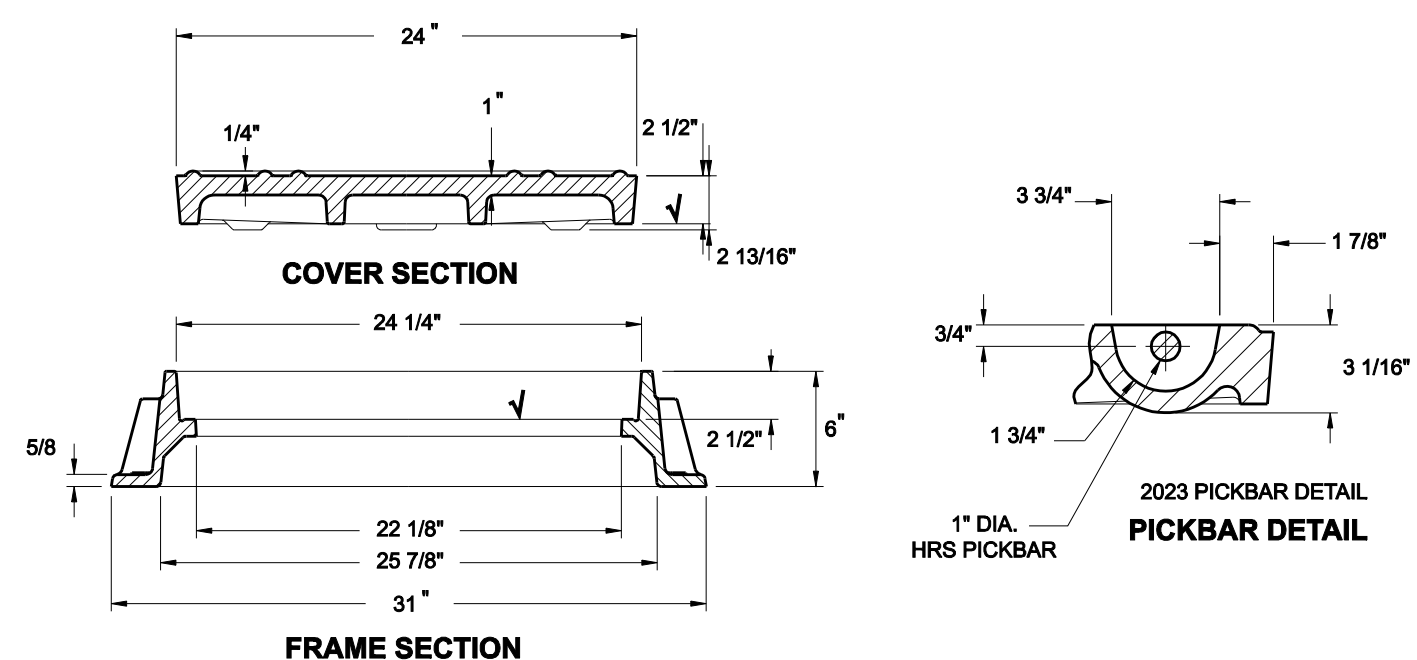
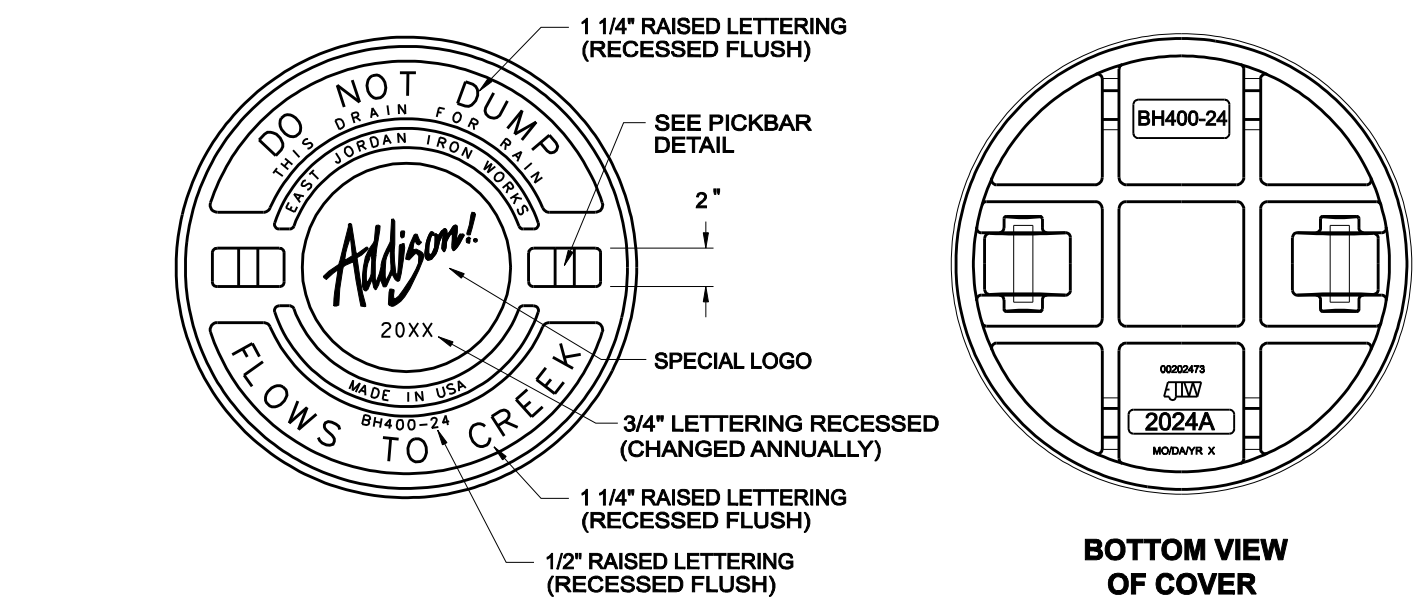
NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS  
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**STORM DRAIN DETAILS**

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117			
Civil Engineers - Designers - Planners		Southlake, Tx 76092 (817) 552-6210			
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	42

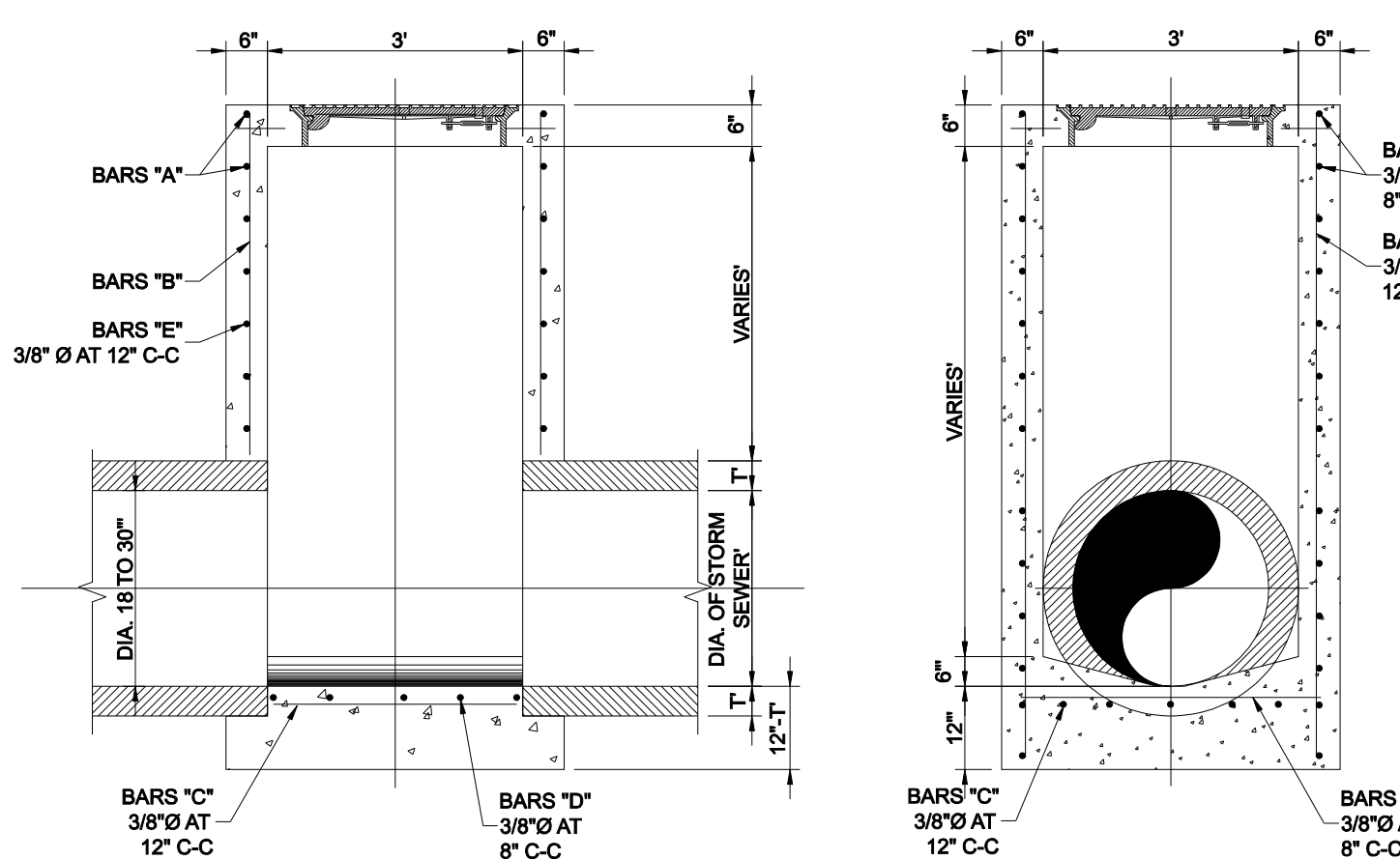
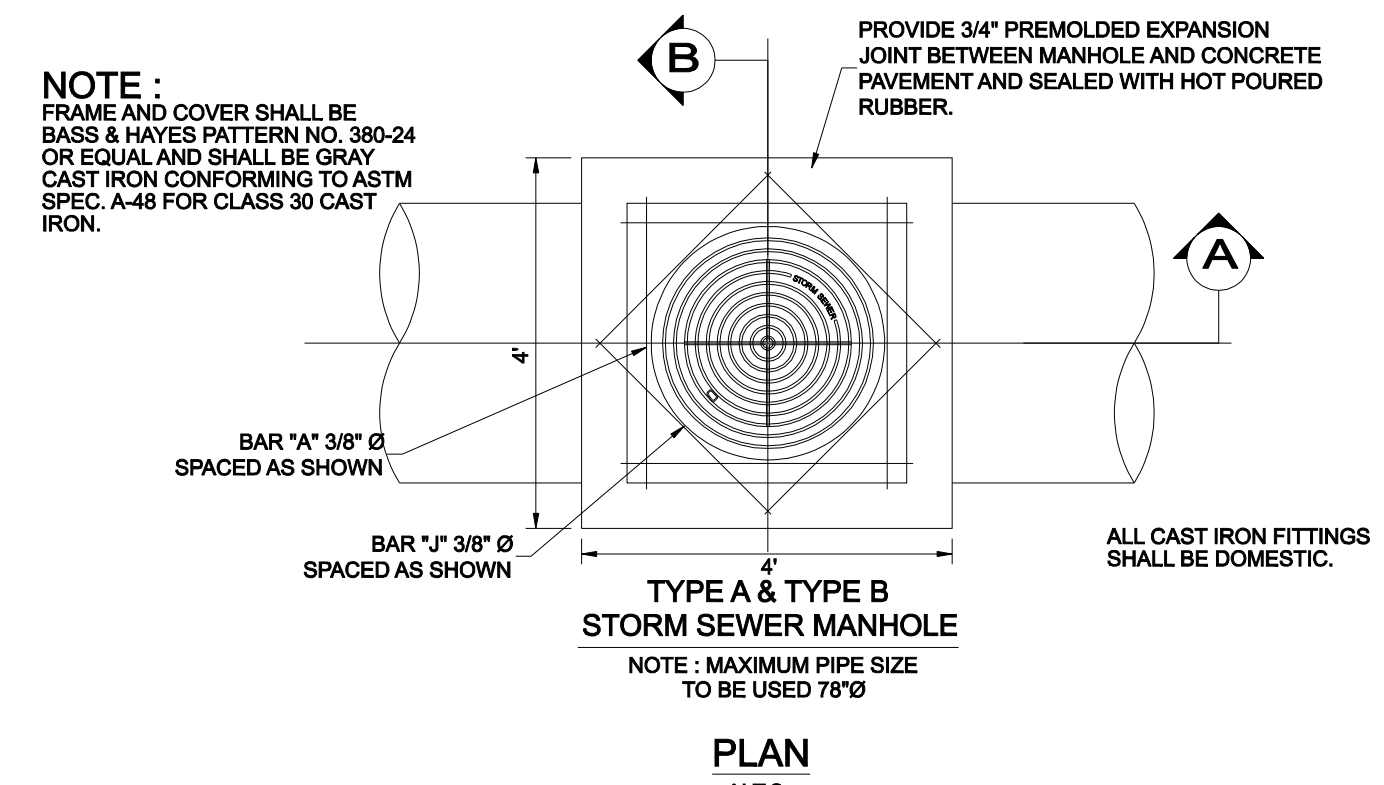
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



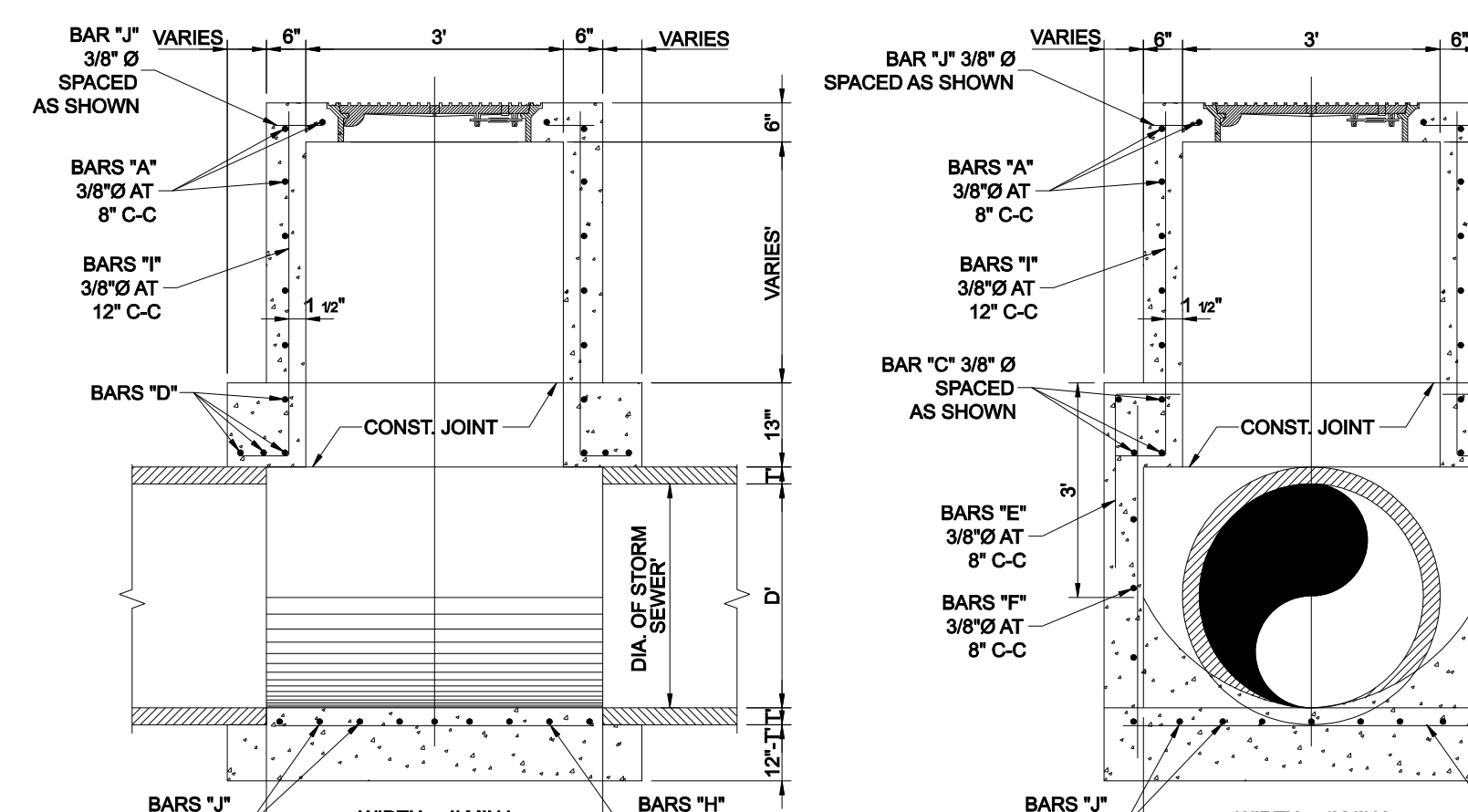
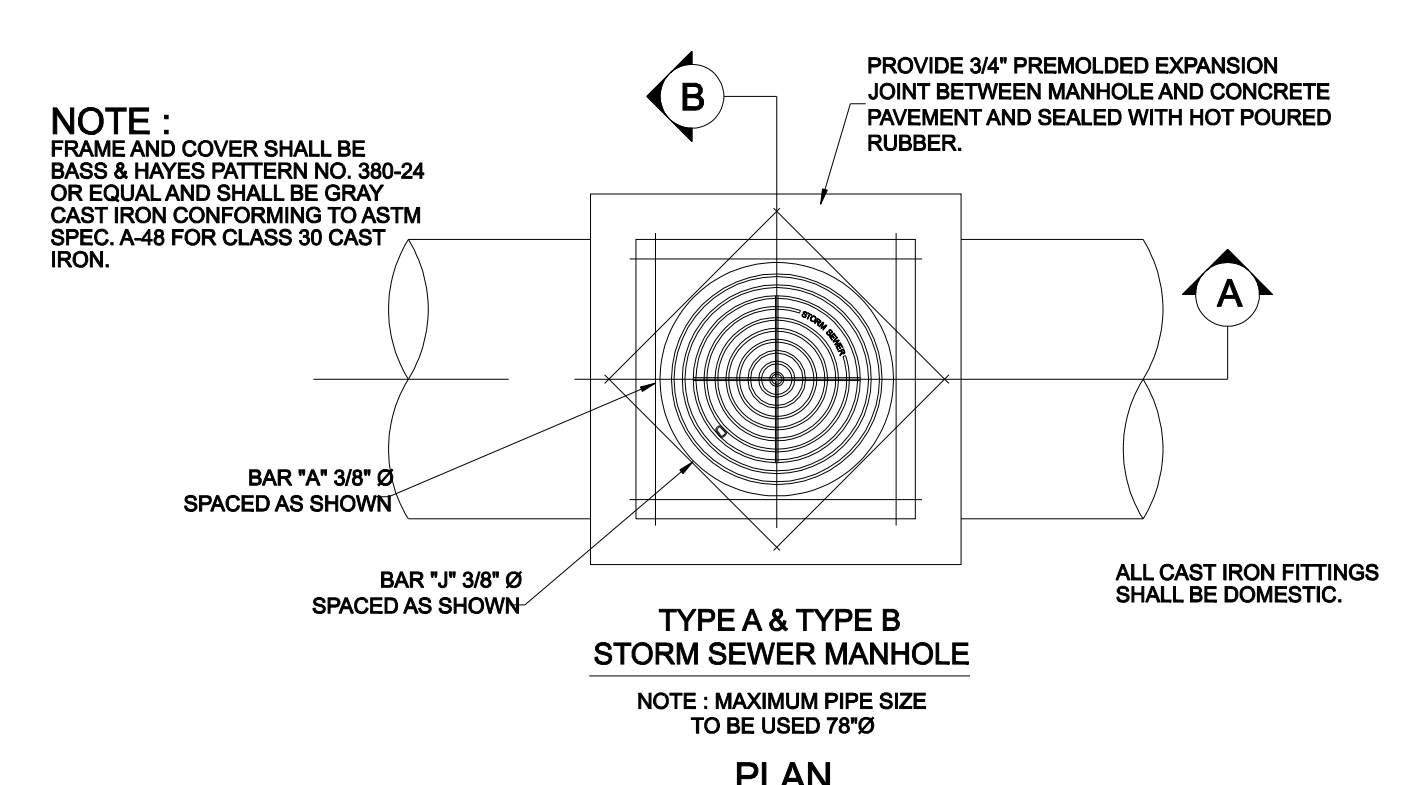
LOAD RATING HEAVY DUTY	COATING DIPPED	ESTIMATED WEIGHT COVER: 193 LBS FRAME: 151 LBS	MATERIAL SPECIFICATION COVER - GRAY IRON ASTM A48 CL35B FRAME - GRAY IRON ASTM A48 CL35B
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DESIGNATES MACHINE SURFACE

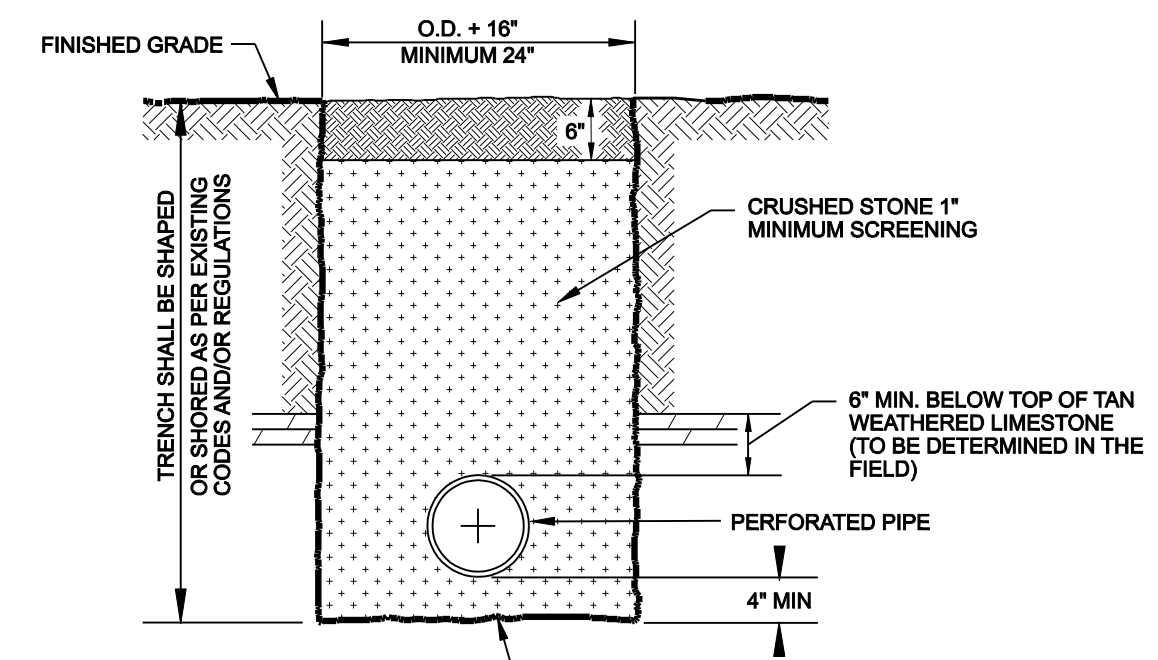
**CAST IRON FRAME AND COVER**



**TYPE 'A' STORM DRAIN MANHOLE**  
N.T.S.

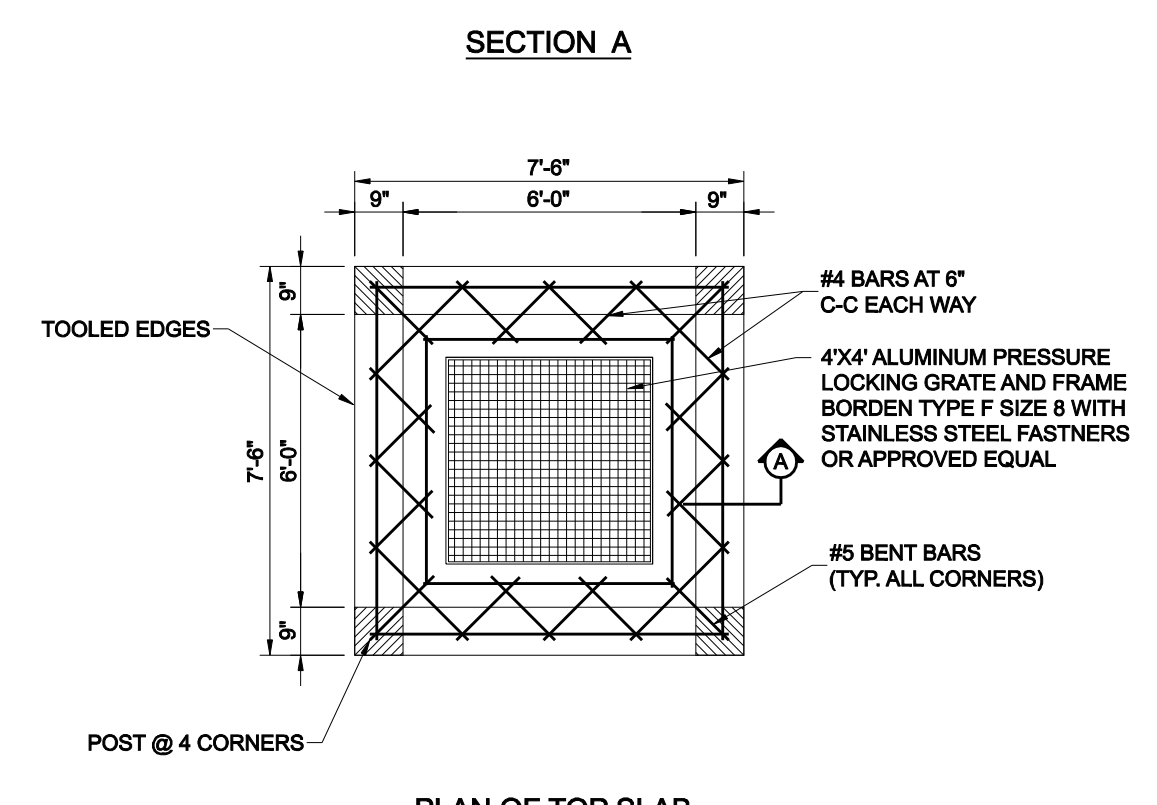
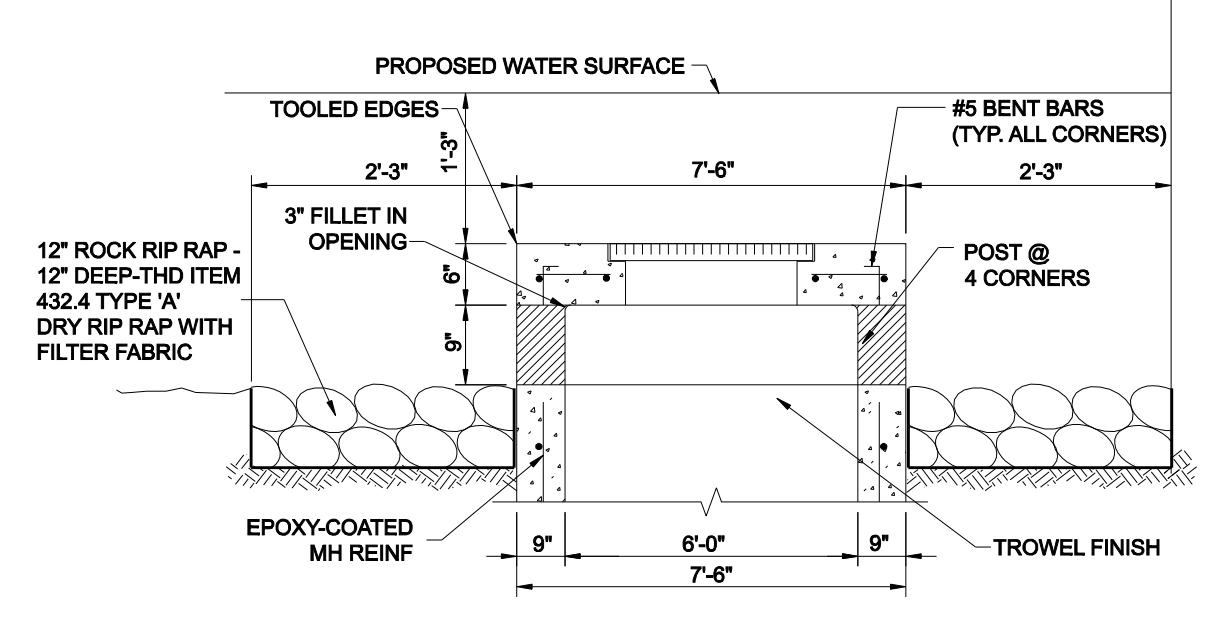


**TYPE 'B' STORM DRAIN MANHOLE**  
N.T.S.

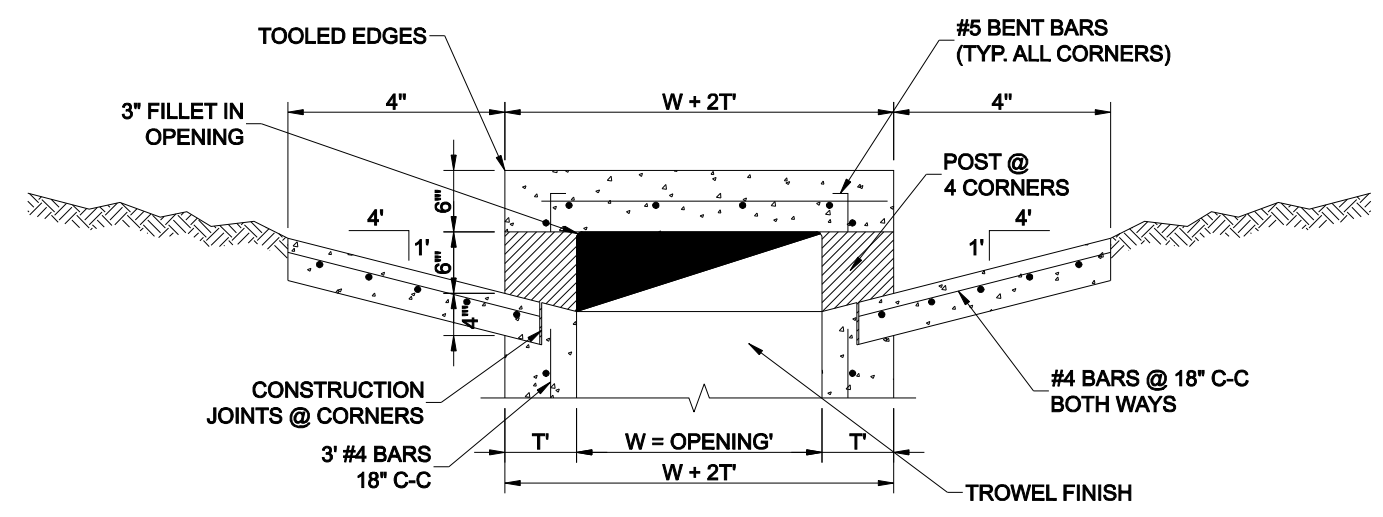


- GENERAL NOTES:**
1. THE SUBSURFACE DRAINAGE SYSTEM SHALL BE CONSTRUCTED WITH A MINIMUM SIZE OF SIX (6) INCH DIAMETER TYPE PS-48 PVC PIPE OR APPROVED EQUAL. THE PIPE SHALL MEET ALL CURRENT ASTM F768 REQUIREMENTS, AND SHALL HAVE GASKET TYPE JOINTS. THE PERFORATED AND CONDUCTING PIPES SHALL BE WHITE IN COLOR.
  2. THE FINAL BACKFILL SHALL CONSIST OF AND BE PLACED IN ACCORDANCE WITH THE N.C.T.C.O.G. SPECIFICATIONS ITEM 6.2.9.
  3. CLEANOUTS SHALL BE INSTALLED EVERY 200' AND AT THE END OF EACH PIPING SYSTEM.

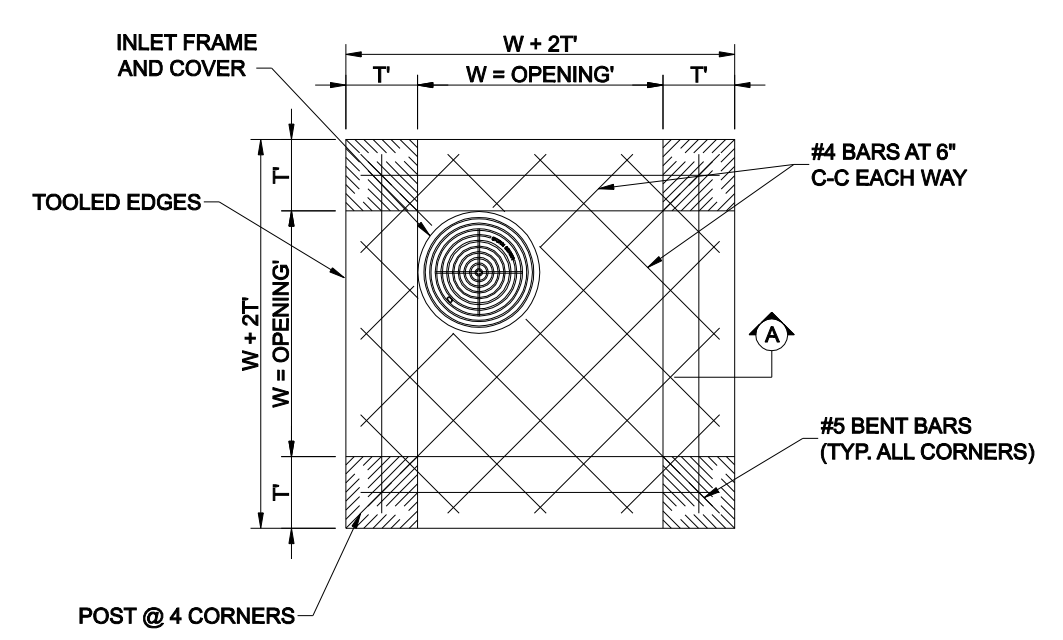
**SUBSURFACE DRAIN DETAIL**  
N.T.S.



**MODIFIED 6' SQ DROP INLET DETAIL**  
SD-A1 STA 3+05.26  
N.T.S.



**SECTION A**



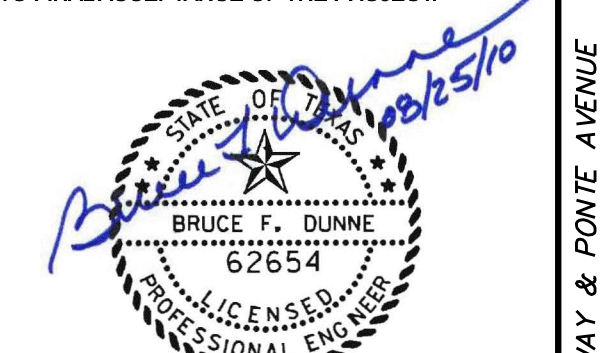
**PLAN OF TOP SLAB**

INLET SIZE	T	W
2' SQUARE	7"	2'-0"
4' SQUARE	7"	4'-0"
5' SQUARE	8"	5'-0"
6' SQUARE	9"	6'-0"

**DROP INLET DETAIL**  
N.T.S.

**GENERAL NOTES**

1. ALL CONCRETE DRAINAGE STRUCTURES SHALL HAVE A MINIMUM COMPRESSED STRENGTH OF 3000 P.S.I.
2. ALL CRUSHED STONE SHALL BE 3/4", PASSING #4 SIEVE.
3. ALL FIELD JOINTS WILL BE APPROVED BY THE CITY ENGINEER IF NECESSARY. FIELD JOINTS SHALL BE WIRED ON THE INSIDE AND OUTSIDE TO PROVIDE FOR SMOOTH FLOW OF WATER.
4. RAMNECK COMPOUND OR APPROVED EQUAL SHALL BE USED FOR JOINT SEALS.
5. ALL STORM SEWER PIPE SHALL BE CAMERA INSPECTED AFTER THE INSTALLATION OF ALL PAVING, UTILITIES, AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.



NO.	REVISION	BY	DATE

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PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
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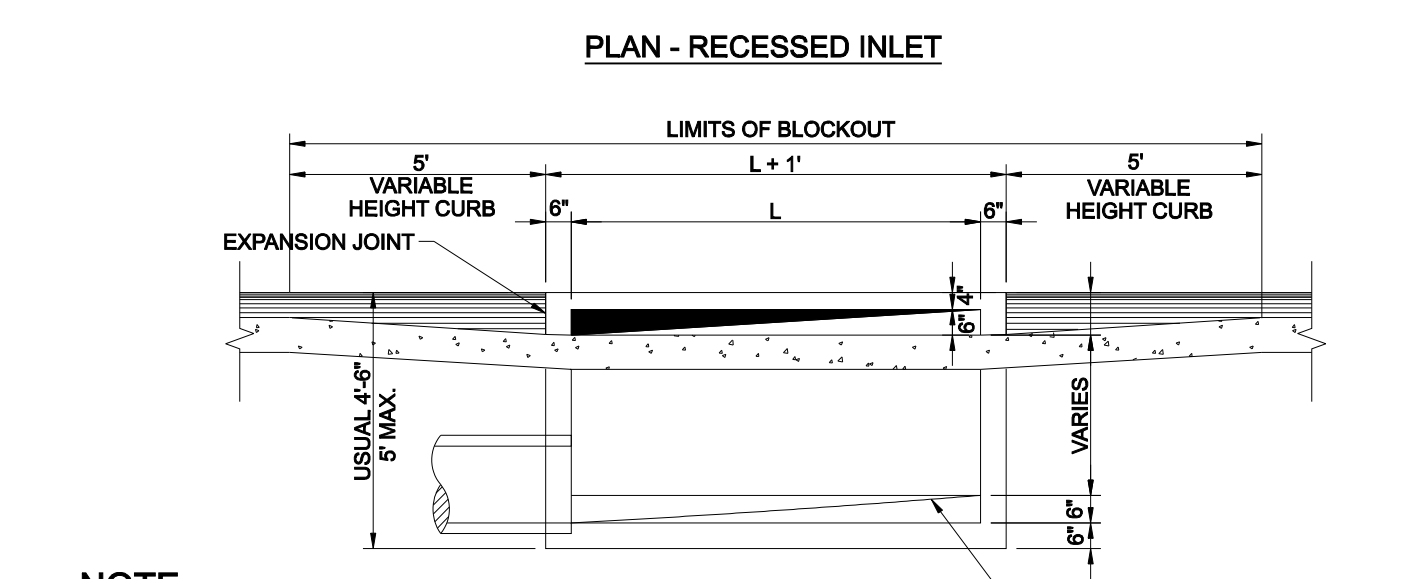
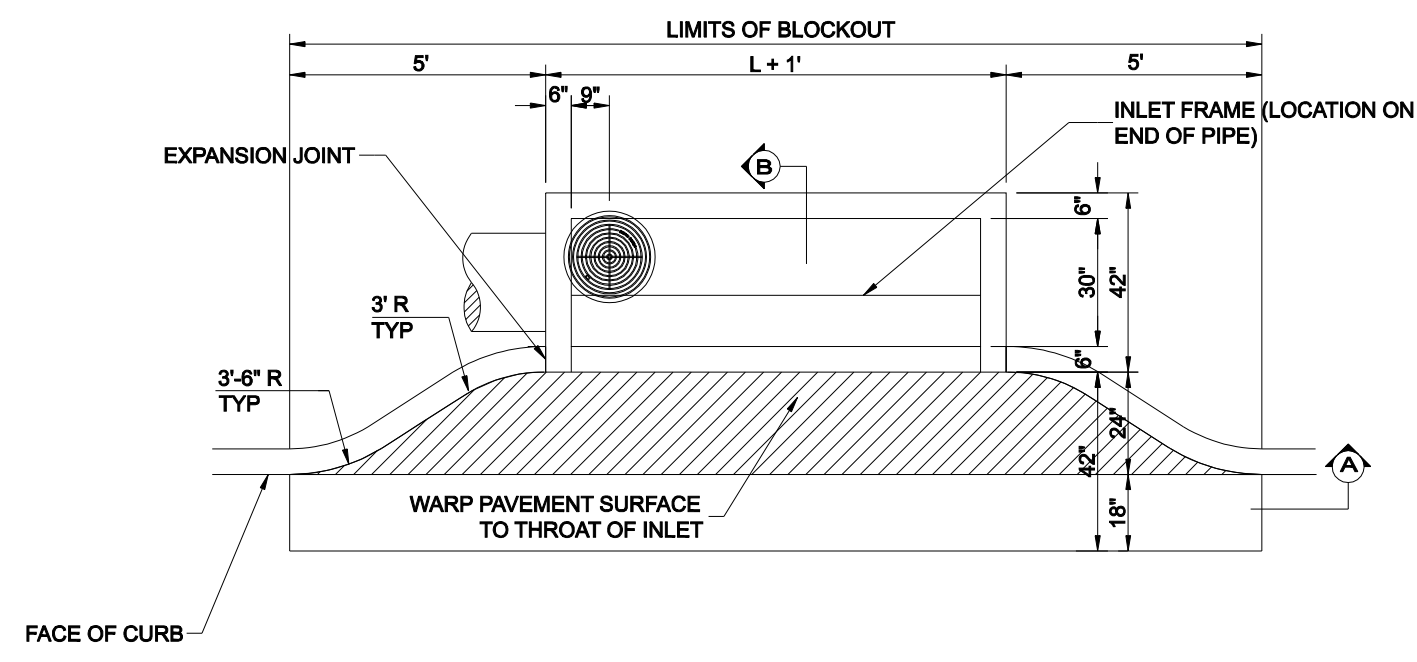
**STORM DRAIN DETAILS**

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5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	43

**REINFORCING STEEL SCHEDULE**  
DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLET

INLET LENGTH	BAR TYPE	BAR DIA. (1/8")	NO. REQ'D.	BAR DIMENSIONS		
				A	B	C
4'	A	3	6	3'-2"	0'-3"	-
	B	3	1	2'-10"	-	-
	C	4	15	4'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	3	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
6'	A	3	9	3'-2"	0'-3"	-
	B	3	1	4'-10"	-	-
	C	4	15	6'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	3	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
8'	A	3	12	3'-2"	0'-3"	-
	B	3	1	6'-10"	-	-
	C	4	15	8'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	4	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
8'	A	3	10	3'-2"	0'-3"	-
	B	3	2	8'-10"	-	-
	C	4	16	10'-8"	0'-6"	-
	D	4	4	4'-8"	-	-
	E	5	6	10'-8"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	15	*	*	*
	I	4	8	4'-8"	3'-2"	3'-2"
L	4	5	4'-3"	-	-	

\* SEE DIAGRAM FOR DIMENSIONS

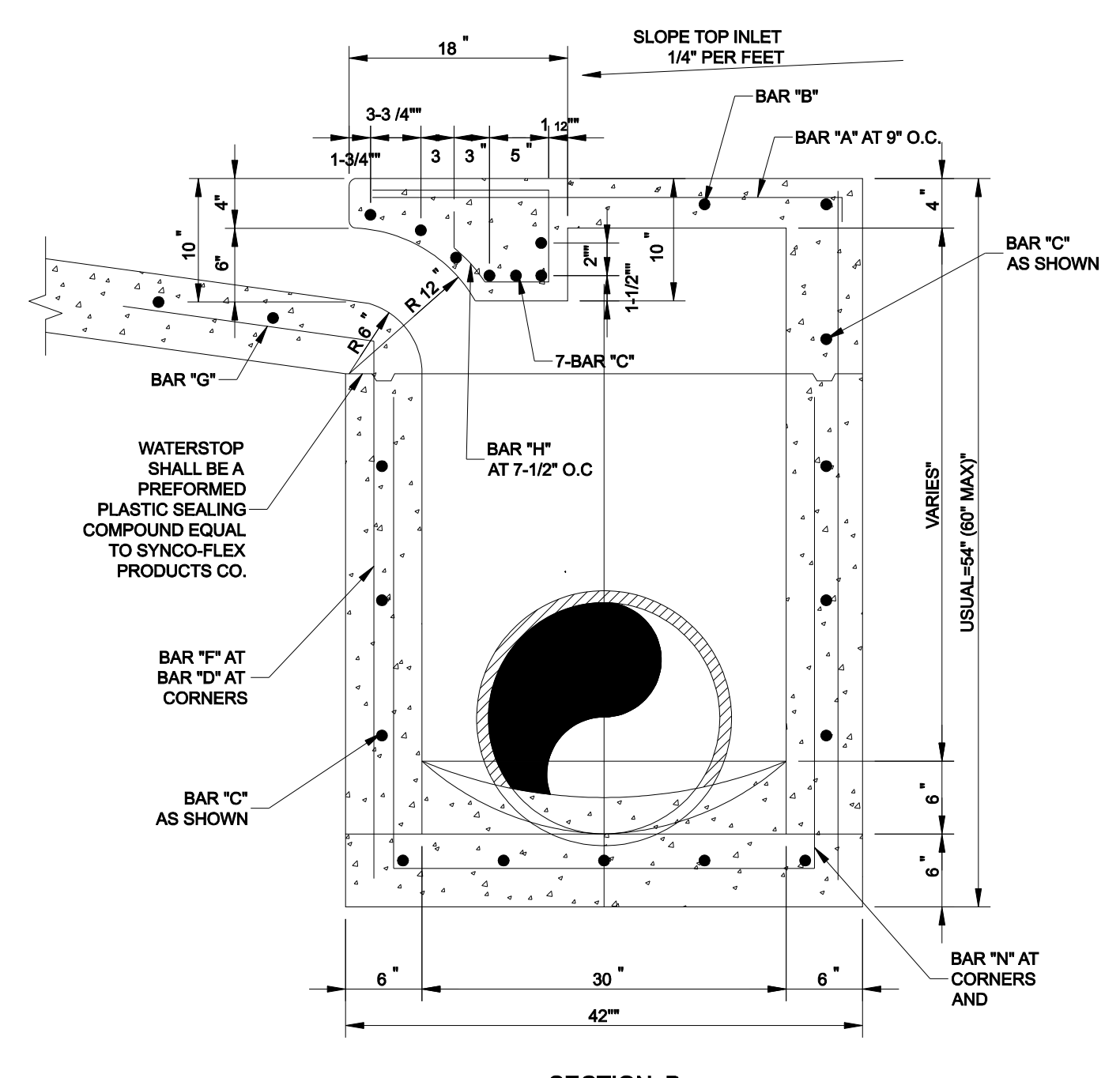


**NOTE:**  
PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

#3 BAR 18" O.C.E.W. IN BLOCK OUT DRILLED INTO EXISTING CONCRETE.

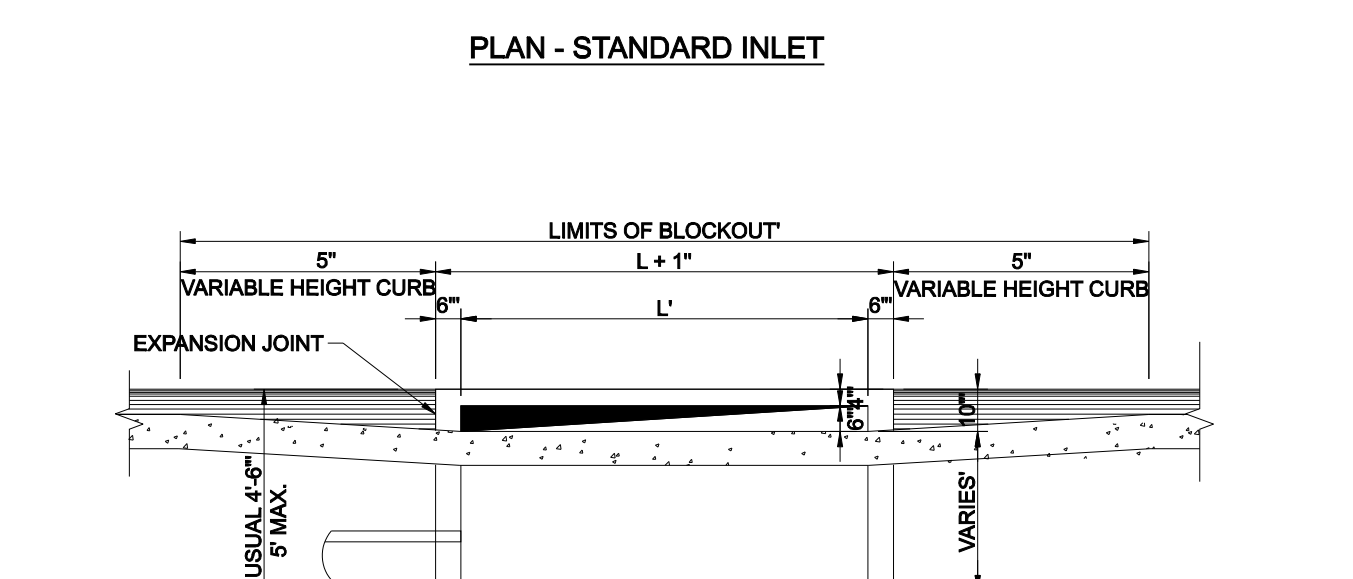
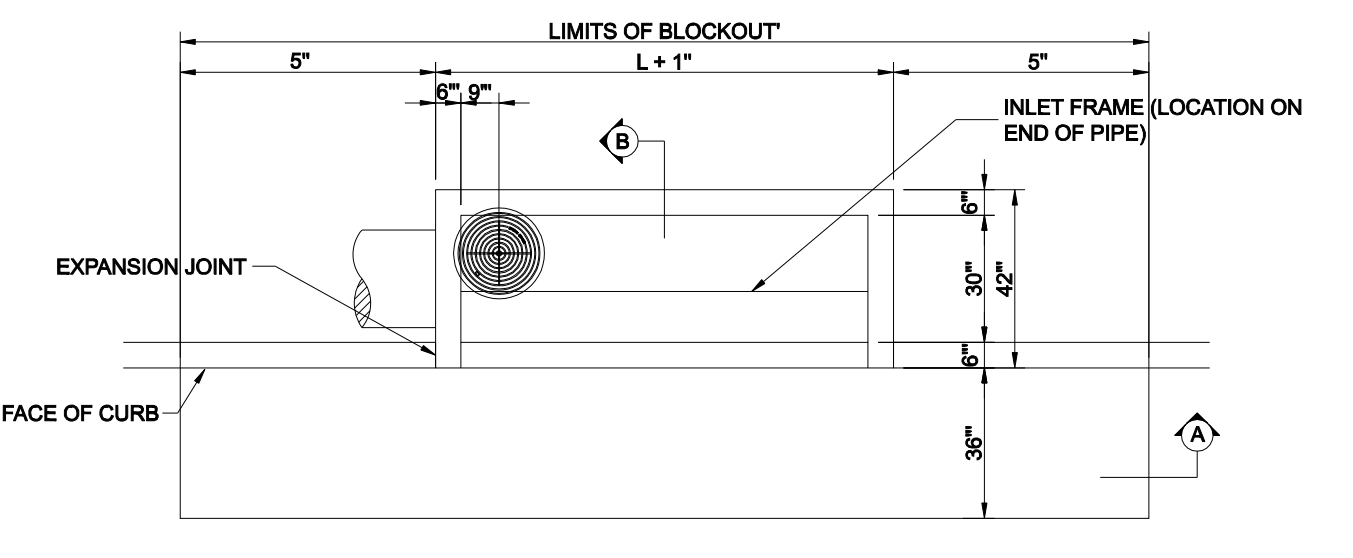
WARP TO SUIT CONDITIONS 1/2" MORTAR FINISH, TROWELLED TO SMOOTH HARD SURFACE.

**STANDARD RECESSED CURB INLET**  
4, 6, 8 AND 10 FOOT



WATERSTOP SHALL BE A PREFORMED PLASTIC SEALING COMPOUND EQUAL TO SYNCO-FLEX PRODUCTS CO.

USUAL 5/8" (60" MAX.)

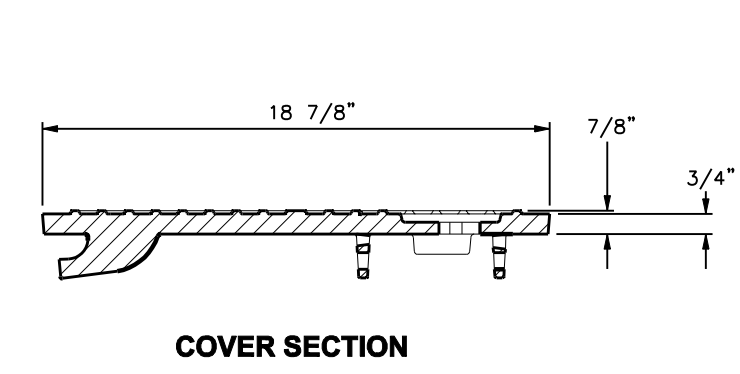
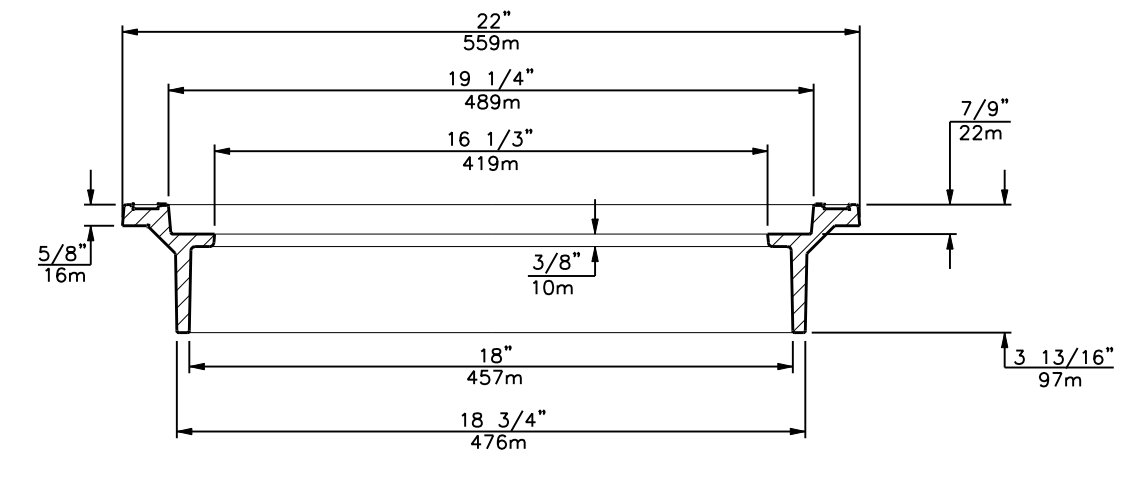
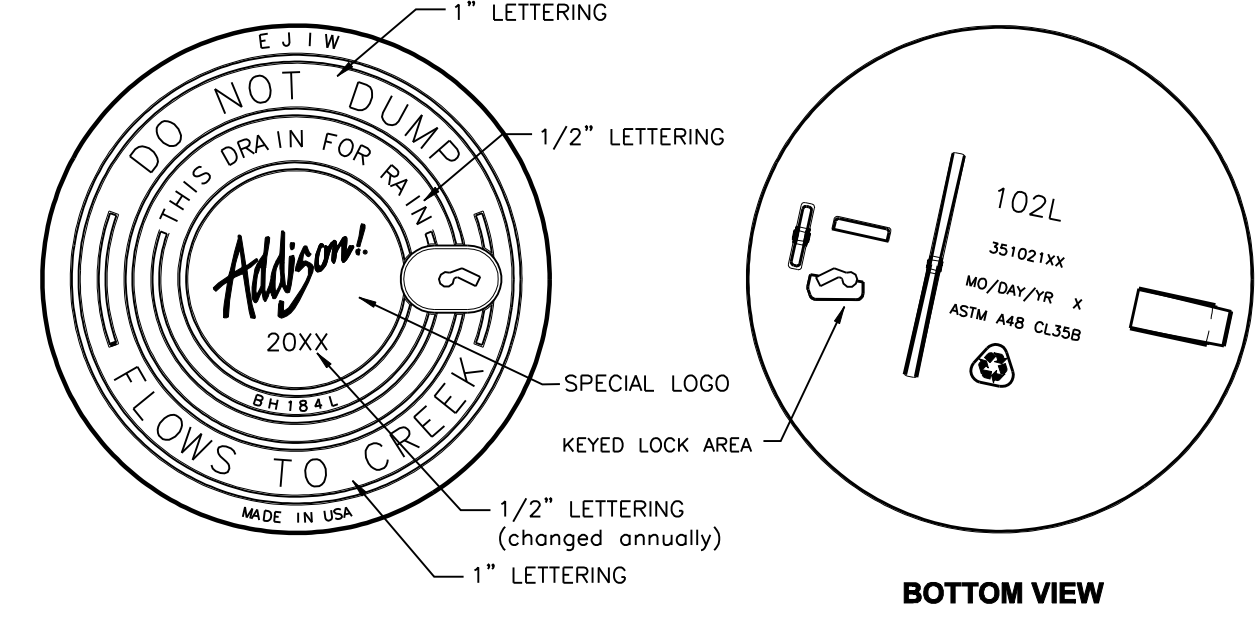
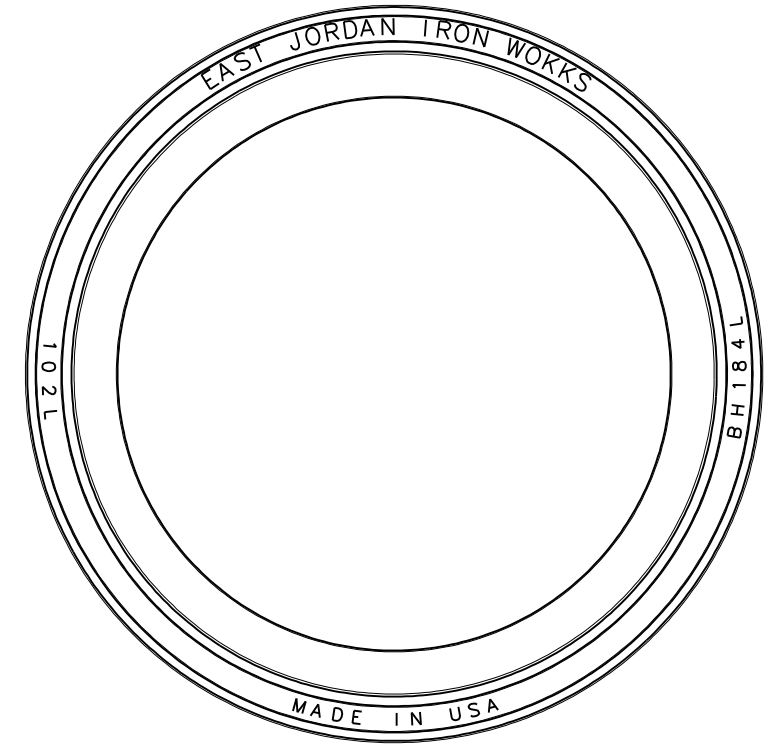


**NOTE:**  
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#3 BAR 18" O.C.E.W. IN BLOCK OUT DRILLED INTO EXISTING CONCRETE.

WARP TO SUIT CONDITIONS 1/2" MORTAR FINISH, TROWELLED TO SMOOTH HARD SURFACE.

**STANDARD CURB INLET**  
4, 6, 8 AND 10 FOOT  
N.T.S.



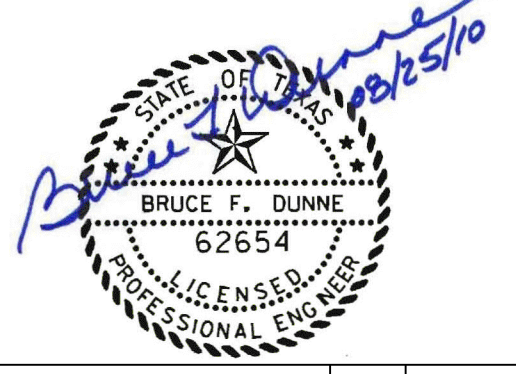
LOAD RATING LIGHT DUTY INLET COVER NON-TRAFFIC INLET RING	COATING DIPPED	ESTIMATED WEIGHT COVER: 60 LBS FRAME: 151 LBS	MATERIAL SPECIFICATION COVER - GRAY IRON ASTM A48 CL35B FRAME - GRAY IRON ASTM A48 CL35B
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▽ DESIGNATES MACHINE SURFACE

**INLET FRAME AND COVER**

**GENERAL NOTES**

- ALL CONCRETE DRAINAGE STRUCTURES SHALL HAVE A MINIMUM COMPRESSED STRENGTH OF 3000 P.S.I.
- ALL CRUSHED STONE SHALL BE 3/4", PASSING #4 SIEVE.
- ALL FIELD JOINTS WILL BE APPROVED BY THE CITY ENGINEER IF NECESSARY. FIELD JOINTS SHALL BE WIPED ON THE INSIDE AND OUTSIDE TO PROVIDE FOR SMOOTH FLOW OF WATER.
- RAMNECK COMPOUND OR APPROVED EQUAL SHALL BE USED FOR JOINT SEALS.
- ALL STORM SEWER PIPE SHALL BE CAMERA INSPECTED AFTER THE INSTALLATION OF ALL PAVING, UTILITIES, AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.



NO.	REVISION	BY	DATE

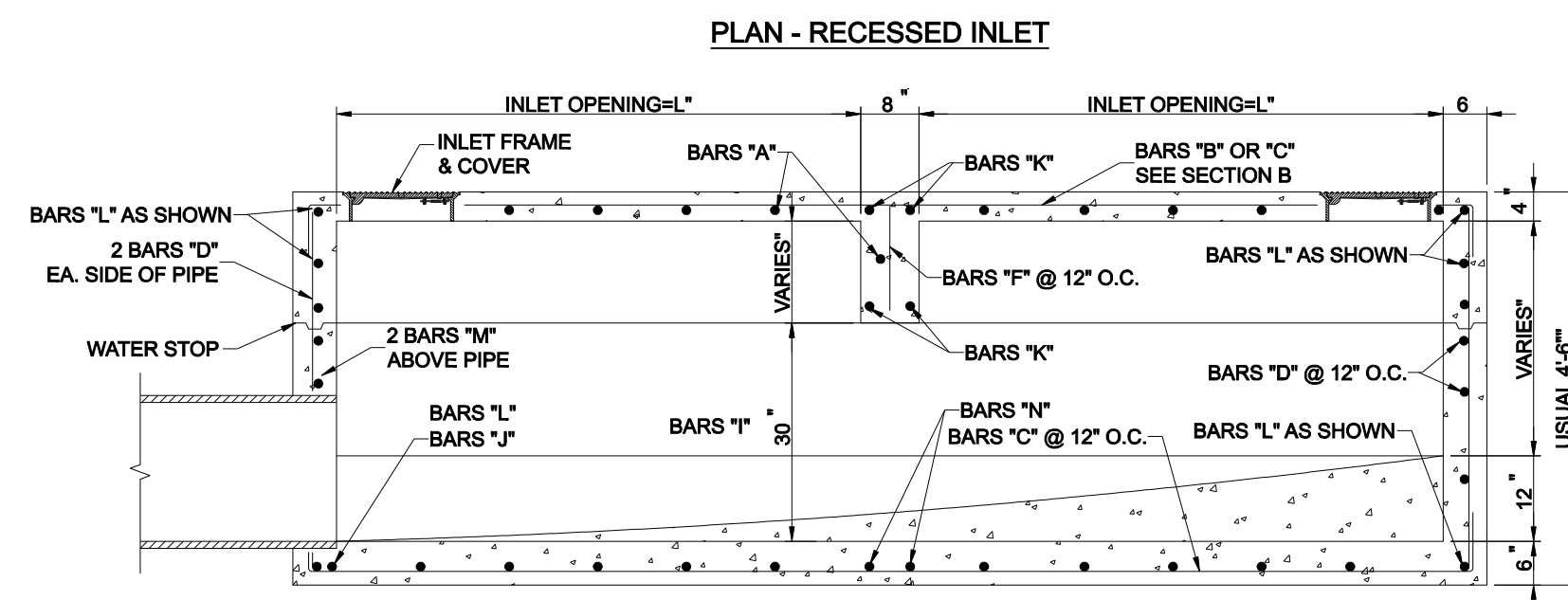
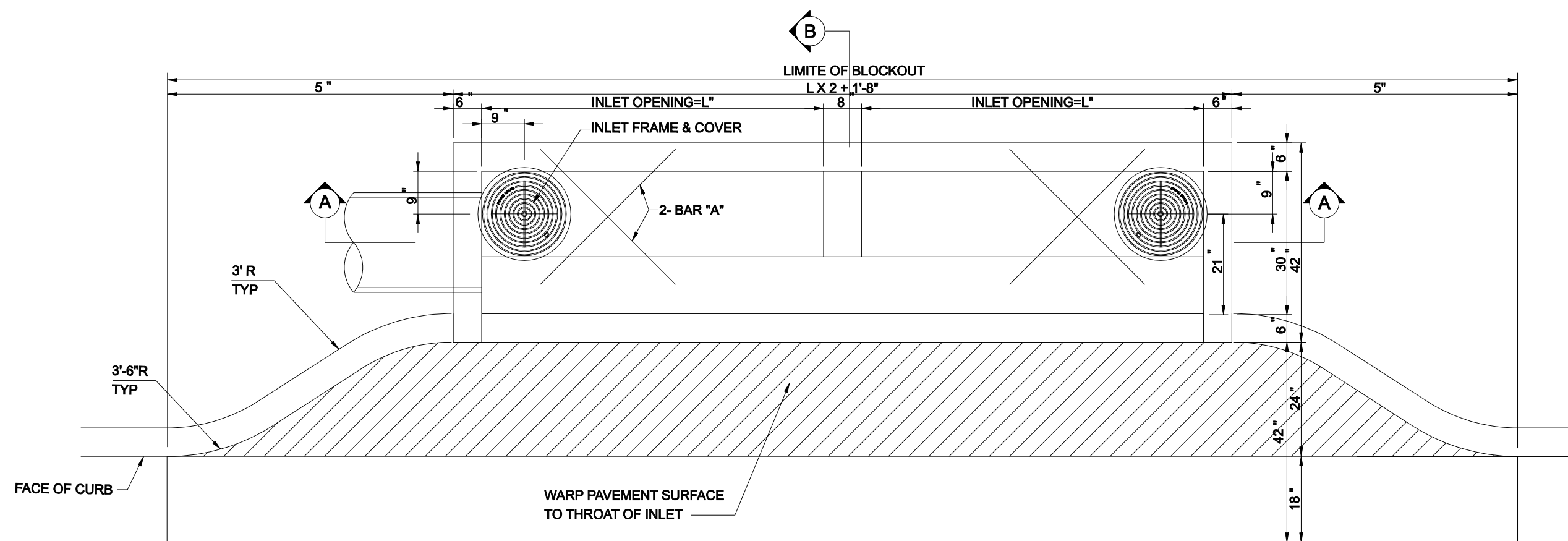
**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY & PONTE AVENUE

**STORM DRAIN DETAILS**

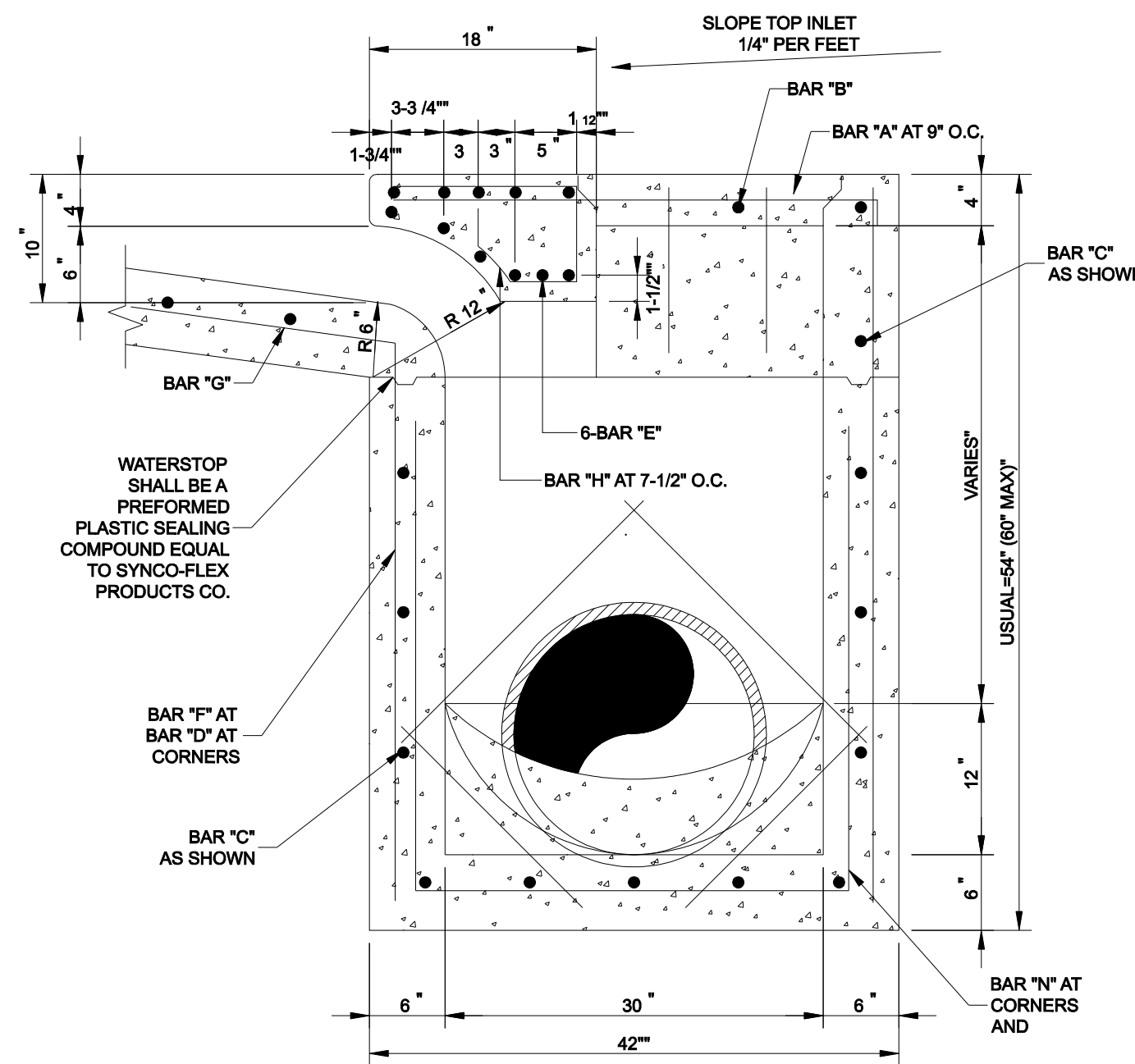
<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117			
Civil Engineers - Designers - Planners		Southlake, Tx 76092 (817) 552-6210			
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	44

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

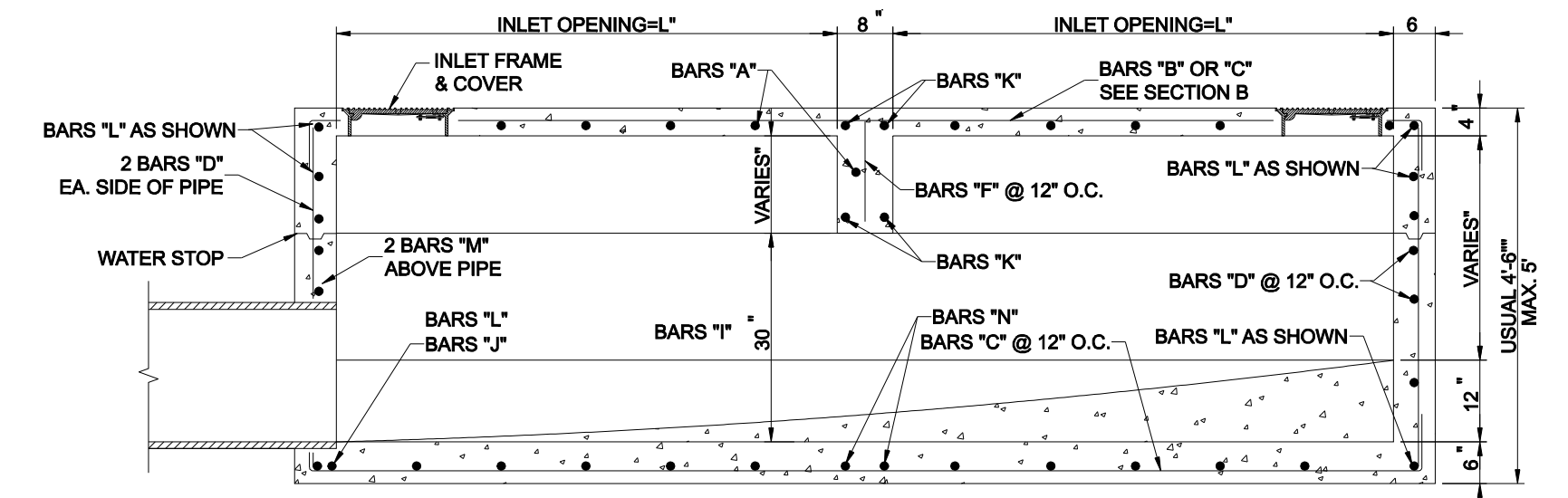
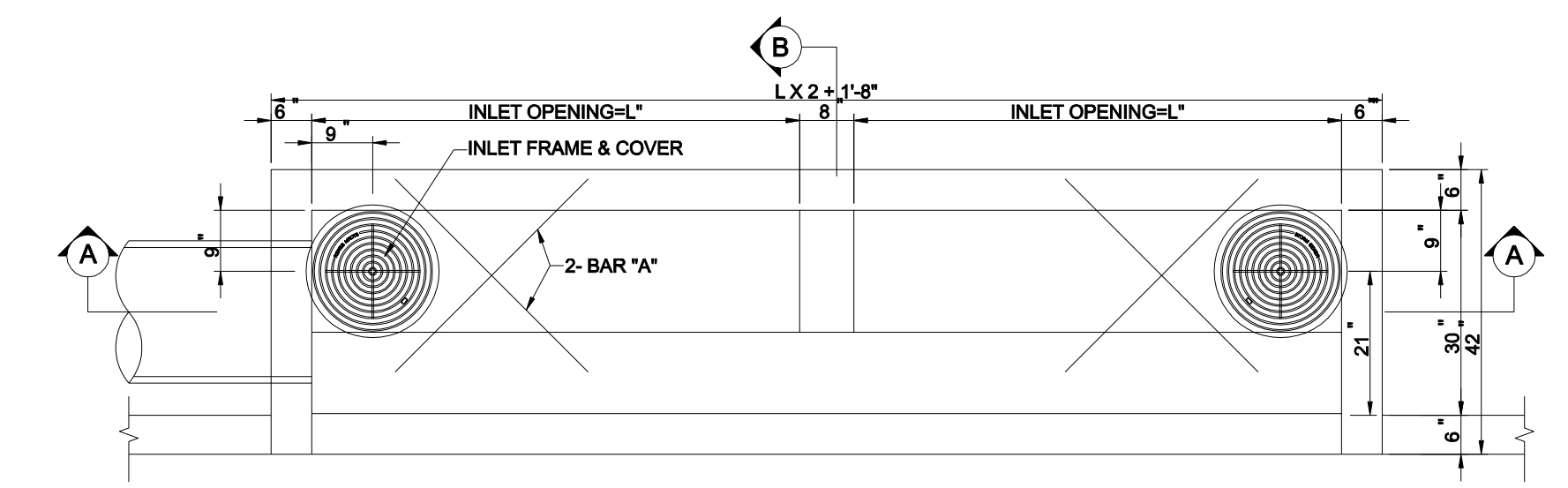


NOTE: REINFORCEMENT SHOWN IS ADDITIONAL FOR SPECIAL CONDITION. FOR REMAINDER OF REINFORCEMENT SEE SECTIONS.

STANDARD RECESSED CURB INLET  
12, 14, 16 & 20 FOOT  
N.T.S.



STANDARD CURB INLET  
12, 14, 16 & 20 FOOT  
N.T.S.

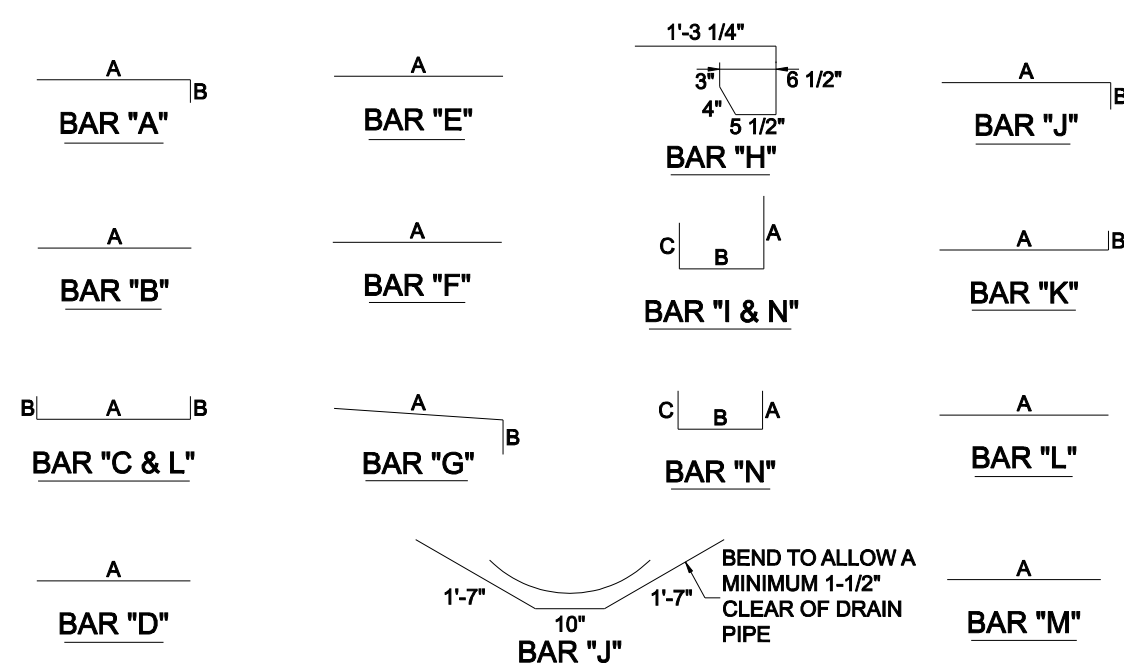


NOTE: REINFORCEMENT SHOWN IS ADDITIONAL FOR SPECIAL CONDITION. FOR REMAINDER OF REINFORCEMENT SEE SECTIONS.

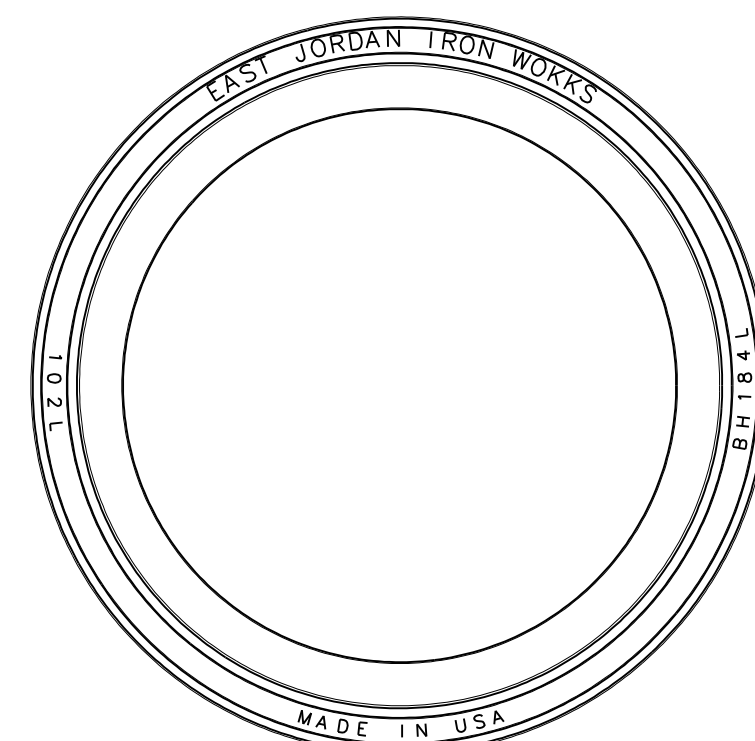
STANDARD CURB INLET  
12, 14, 16 & 20 FOOT  
N.T.S.

REINFORCING STEEL SCHEDULE													
DIMENSIONS ARE FOR MAXIMUM SIZE INLETS													
INLET LENGTH	BAR TYPE	BAR (1/8")	NO. REQ'D.	BAR DIMENSIONS			INLET LENGTH	BAR TYPE	BAR (1/8")	NO. REQ'D.	BAR DIMENSIONS		
				A	B	C					A	B	C
6'	A	3	15	3'-2"	0'-6"	-	6'	A	3	19	3'-2"	0'-6"	-
	B	3	2	11'-6"	-	-		B	3	2	15'-6"	-	-
	C	4	16	13'-4"	0'-6"	-		C	4	16	17'-4"	0'-6"	-
	D	4	9	4'-8"	-	-		D	4	9	4'-8"	-	-
	E	5	6	13'-4"	-	-		E	5	6	17'-4"	-	-
	F	4	5	1'-2"	-	-		F	4	5	1'-2"	-	-
	G	3	12	2'-0"	1'-3"	-		G	3	12	2'-0"	1'-3"	-
	H	3	26	-	-	-		H	3	26	-	-	-
	I	4	12	4'-8"	3'-2"	3'-2"		I	4	16	4'-8"	3'-2"	3'-2"
	J	5	1	-	-	-		J	5	1	-	-	-
	K	5	6	3'-2"	0'-6"	-		K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-		L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	-	-		M	4	2	3'-0"	-	-
	N	4	2	4'-8"	3'-2"	4'-8"		N	4	2	4'-8"	3'-2"	4'-8"
7'	A	3	17	3'-2"	0'-6"	-	10'	A	3	23	3'-2"	0'-6"	-
	B	3	2	13'-6"	-	-		B	3	2	19'-6"	-	-
	C	4	16	15'-4"	0'-6"	-		C	4	16	21'-4"	0'-6"	-
	D	4	9	4'-8"	-	-		D	4	9	4'-8"	-	-
	E	5	6	15'-4"	-	-		E	5	6	21'-4"	-	-
	F	4	5	1'-2"	-	-		F	4	5	1'-2"	-	-
	G	3	15	2'-0"	1'-3"	-		G	3	15	2'-0"	1'-3"	-
	H	3	32	-	-	-		H	3	32	-	-	-
	I	4	14	4'-8"	3'-2"	3'-2"		I	4	20	4'-8"	3'-2"	3'-2"
	J	5	1	-	-	-		J	5	1	-	-	-
	K	5	6	3'-2"	0'-6"	-		K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-		L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	-	-		M	4	2	3'-0"	-	-
	N	4	2	4'-8"	3'-2"	4'-8"		N	4	2	4'-8"	3'-2"	4'-8"

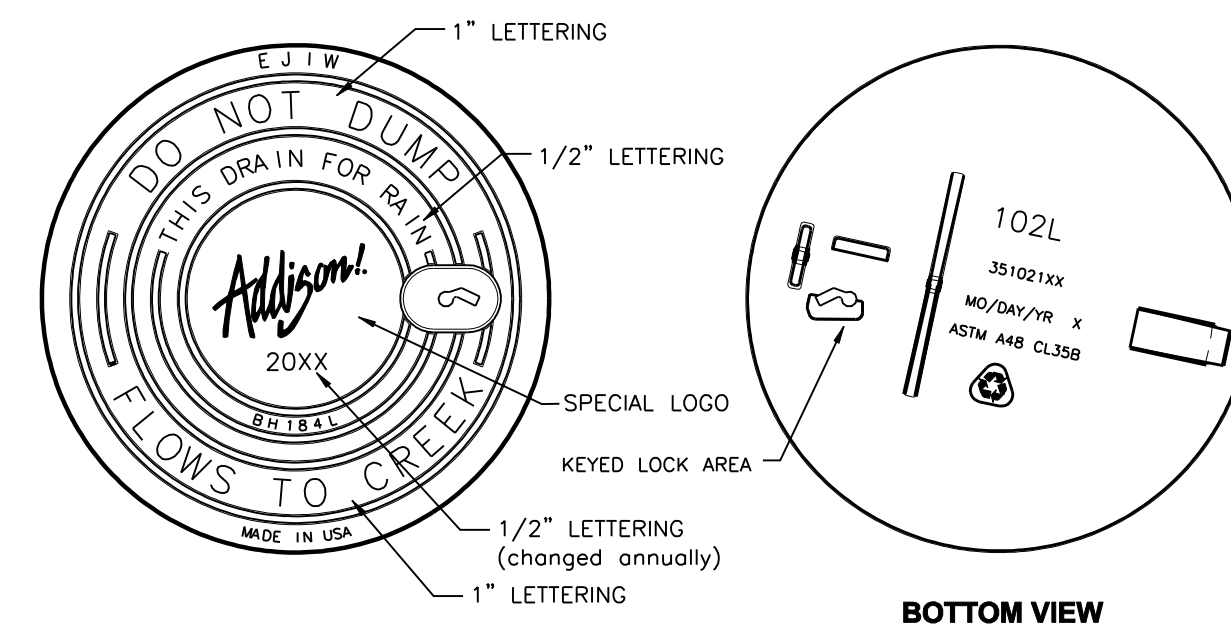
\*\*SEE DIAGRAM FOR DIMENSION FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE



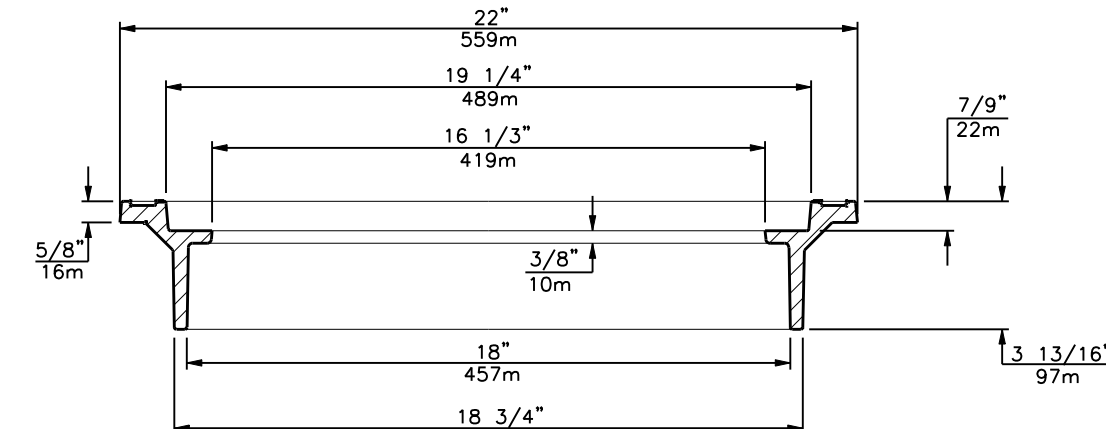
BAR DIAGRAMS



RING SECTION



BOTTOM VIEW



COVER SECTION

LOAD RATING LIGHT DUTY INLET COVER NON-TRAFFIC INLET RING	COATING DIPPED	ESTIMATED WEIGHT COVER: 60 LBS FRAME: 151 LBS	MATERIAL SPECIFICATION COVER - GRAY IRON ASTM A48 CL35B FRAME - GRAY IRON ASTM A48 CL35B
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DESIGNATES MACHINE SURFACE

INLET FRAME AND COVER

GENERAL NOTES

- ALL CONCRETE DRAINAGE STRUCTURES SHALL HAVE A MINIMUM COMPRESSED STRENGTH OF 3000 P.S.I.
- ALL CRUSHED STONE SHALL BE 3/4", PASSING #4 SIEVE.
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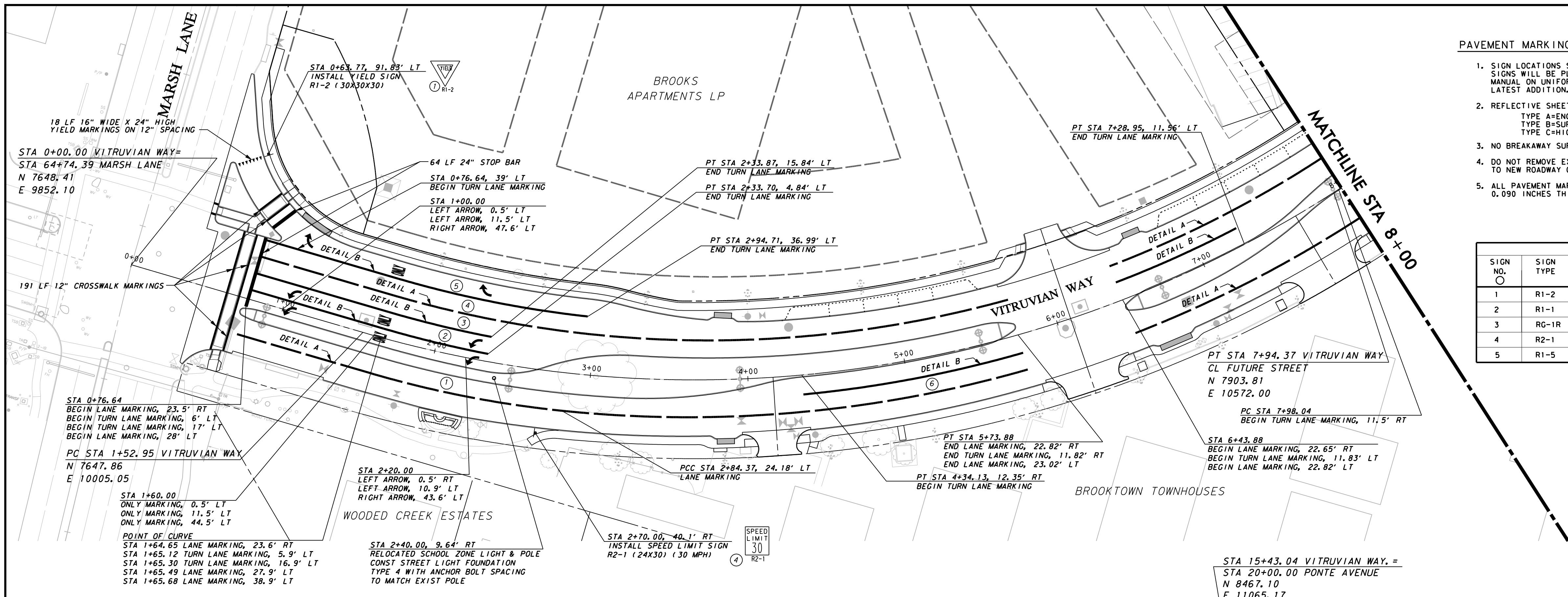


NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS  
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

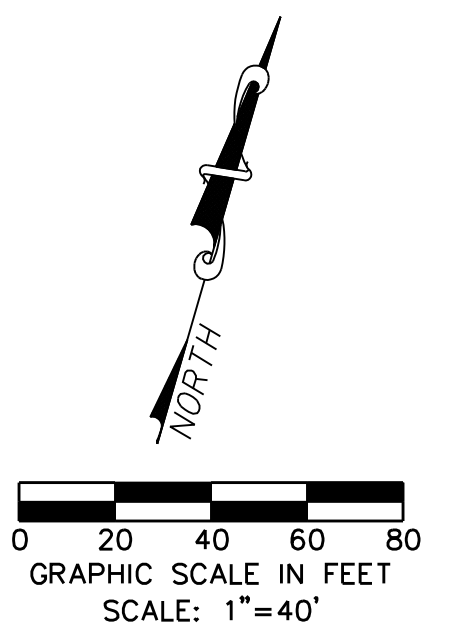
STORM DRAIN DETAILS

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	45		

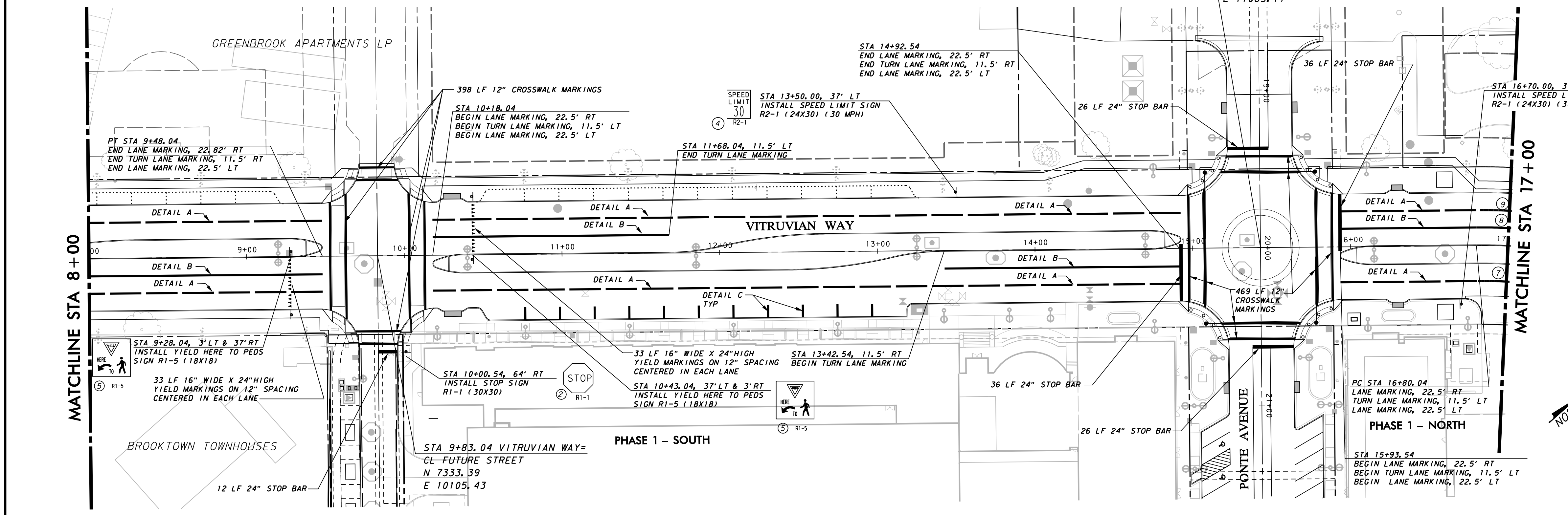


**PAVEMENT MARKING & SIGNAGE NOTES:**

- SIGN LOCATIONS SHOWN ON PLANS ARE DIAGRAMMATIC. SIGNS WILL BE PLACED IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
- REFLECTIVE SHEETING WILL BE DESIGNATED AS:  
TYPE A=ENGINEER GRADE  
TYPE B=SUPER ENGINEER GRADE  
TYPE C=HIGH INTENSITY PRISMATIC
- NO BREAKAWAY SUPPORT IS TO BE PROVIDED.
- DO NOT REMOVE EXISTING PAVEMENT MARKINGS OR SIGNAGE PRIOR TO NEW ROADWAY OPENING TO TRAFFIC.
- ALL PAVEMENT MARKINGS TO BE ALKYD THERMOPLASTIC WITH 0.090 INCHES THICKNESS.



SUMMARY OF SMALL SIGNS (WITHOUT REMOVABLE COPY)								
SIGN NO.	SIGN TYPE	SIGN TEXT	SIGN DIMENSIONS (INCHES)	REFLECTIVE SHEETING	PLYWOOD TYPE A	ALUMINUM TYPE A	TYPE OF MOUNT	QUANTITY
1	R1-2	YIELD	30X30X30	C		X	A	1
2	R1-1	STOP	30X30	C		X	A	1
3	RG-1R	ONE WAY RIGHT	36X12	C		X	A	1
4	R2-1	SPEED LIMIT	24X30	C		X	A	3
5	R1-5	YIELD HERE TO PDS	18X18	C		X	A	4



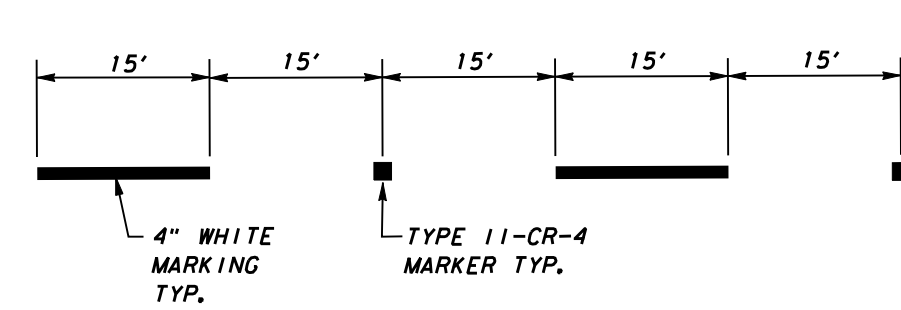
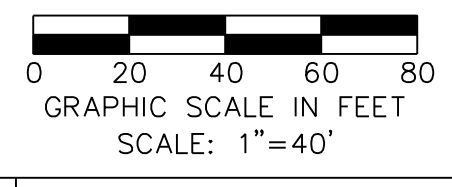
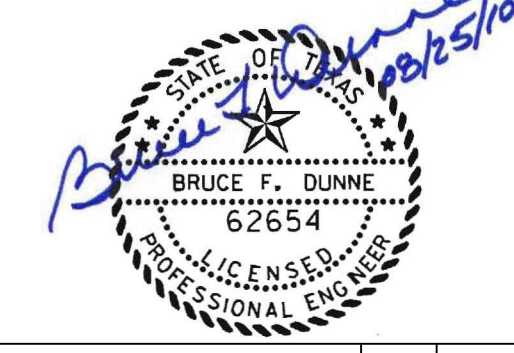
CURVE DATA			
NO.	RADIUS	DELTA	LENGTH
1	681.33'	10° 23' 29"	123.57'
2	733.51'	12° 00' 37"	153.76'
3	722.51'	12° 00' 37"	67.08'
4	711.51'	44° 02' 54"	68.10'
5	700.51'	10° 01' 16"	122.52'
6	780.12'	33° 48' 46"	298.55 4
7	361.51'	44° 34' 23"	281.23'
8	395.51'	5° 51' 35"	40.45'
9	406.51'	44° 34' 23"	316.24'

**WARNING**

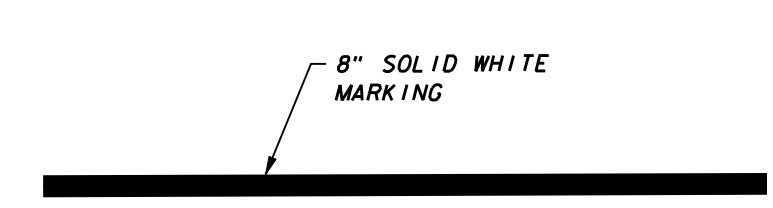
CONTRACTOR IS TO CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY LOCATING SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. ICON CONSULTING ENGINEERS, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOR FOR DEPICTING THE EXACT LOCATIONS OF UTILITIES ON THESE DRAWINGS.

BM #1 REF. ELEVATION = 559.47  
SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

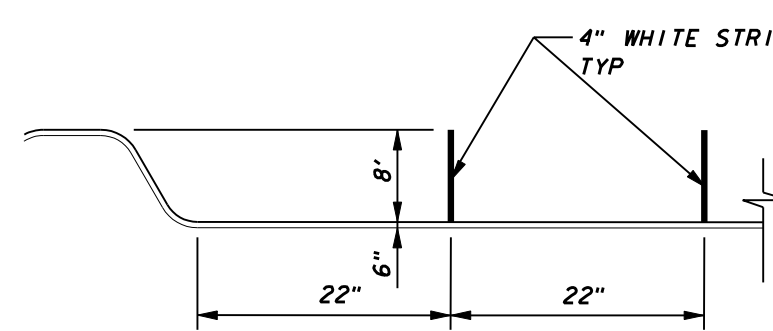
BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



**DETAIL A**  
TYPICAL LANE MARKINGS  
NOT TO SCALE



**DETAIL B**  
TYPICAL TURN LANE MARKINGS  
NOT TO SCALE



**DETAIL C**  
TYPICAL PARALLEL PARKING  
NOT TO SCALE

NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

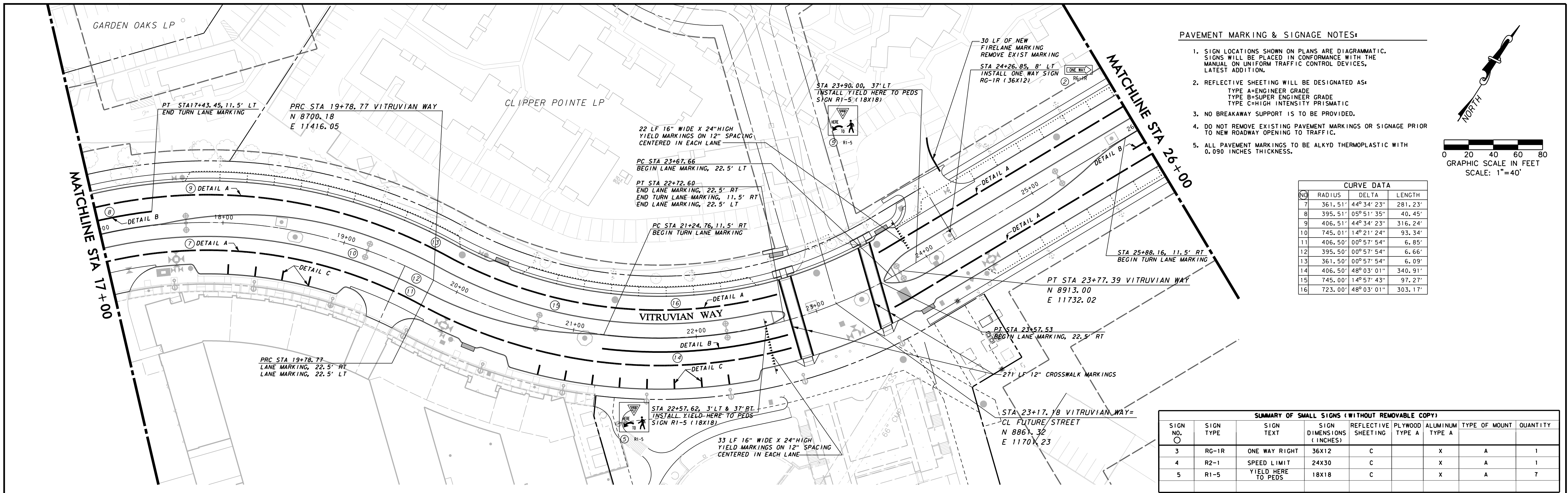
PAVEMENT MARKING AND SIGNAGE-VW  
STA 0+00.00 TO STA 17+00.00

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

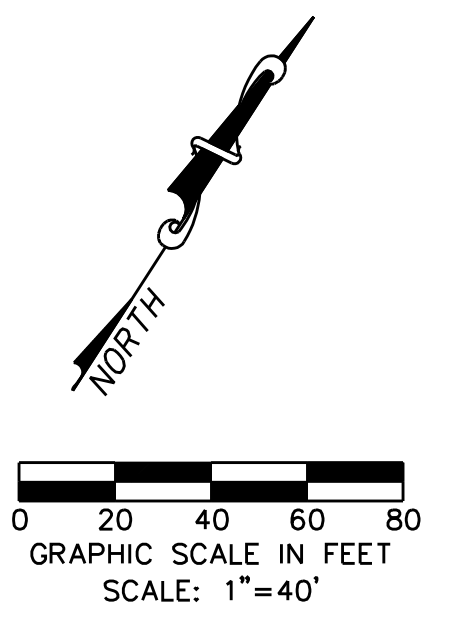
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	46

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE





- PAVEMENT MARKING & SIGNAGE NOTES:**
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  - REFLECTIVE SHEETING WILL BE DESIGNATED AS:  
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TYPE B=SUPER ENGINEER GRADE  
TYPE C=HIGH INTENSITY PRISMATIC
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  - ALL PAVEMENT MARKINGS TO BE ALKYD THERMOPLASTIC WITH 0.090 INCHES THICKNESS.

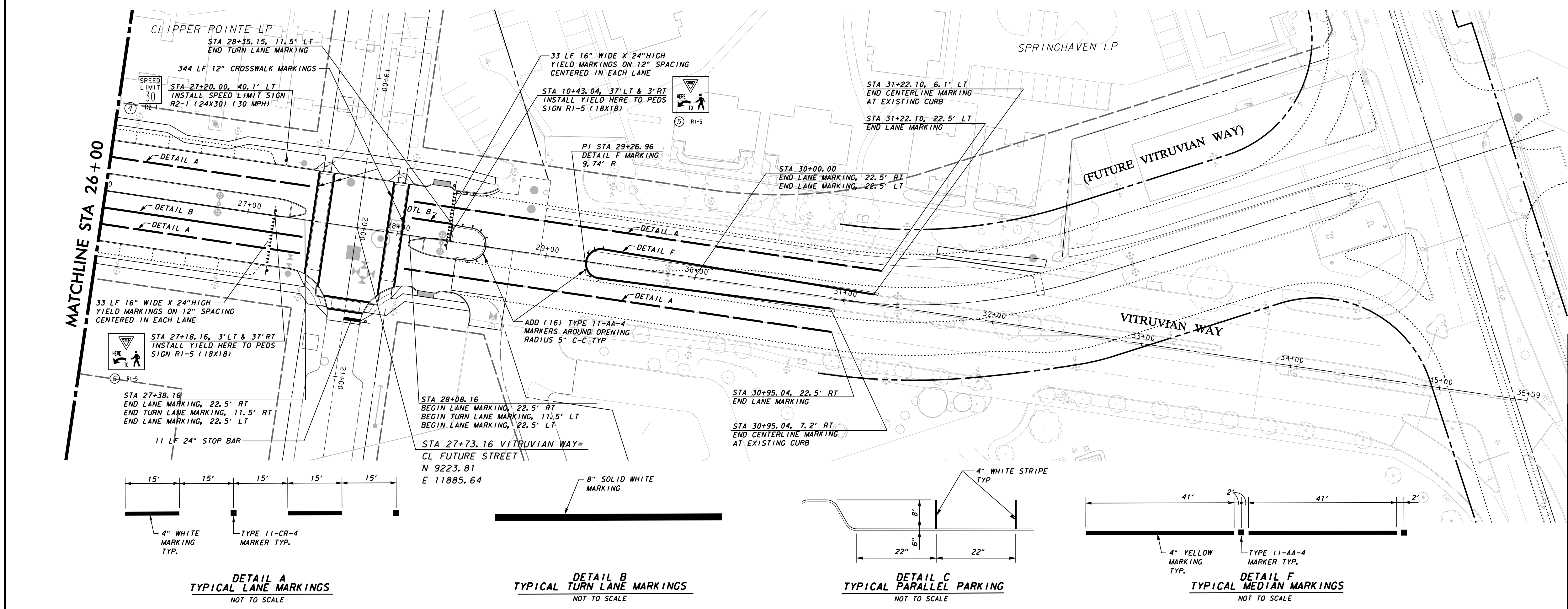


**CURVE DATA**

NO.	RADIUS	DELTA	LENGTH
7	361.51'	44° 34' 23"	281.23'
8	395.51'	05° 51' 35"	40.45'
9	406.51'	44° 34' 23"	316.24'
10	745.01'	14° 21' 24"	93.34'
11	406.50'	00° 57' 54"	6.85'
12	395.50'	00° 57' 54"	6.66'
13	361.50'	00° 57' 54"	6.09'
14	406.50'	48° 03' 01"	340.91'
15	745.00'	14° 57' 43"	97.27'
16	723.00'	48° 03' 01"	303.17'

**SUMMARY OF SMALL SIGNS (WITHOUT REMOVABLE COPY)**

SIGN NO.	SIGN TYPE	SIGN TEXT	SIGN DIMENSIONS (INCHES)	REFLECTIVE SHEETING	PLYWOOD TYPE A	ALUMINUM TYPE A	TYPE OF MOUNT	QUANTITY
3	RG-1R	ONE WAY RIGHT	36X12	C		X	A	1
4	R2-1	SPEED LIMIT	24X30	C		X	A	1
5	R1-5	YIELD HERE TO PEDS	18X18	C		X	A	7

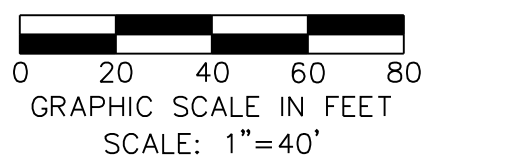


**WARNING**

CONTRACTOR IS TO CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY LOCATING SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. ICON CONSULTING ENGINEERS, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOR FOR DEPICTING THE EXACT LOCATIONS OF UTILITIES ON THESE DRAWINGS.

BM #1 REF. ELEVATION = 559.47  
SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



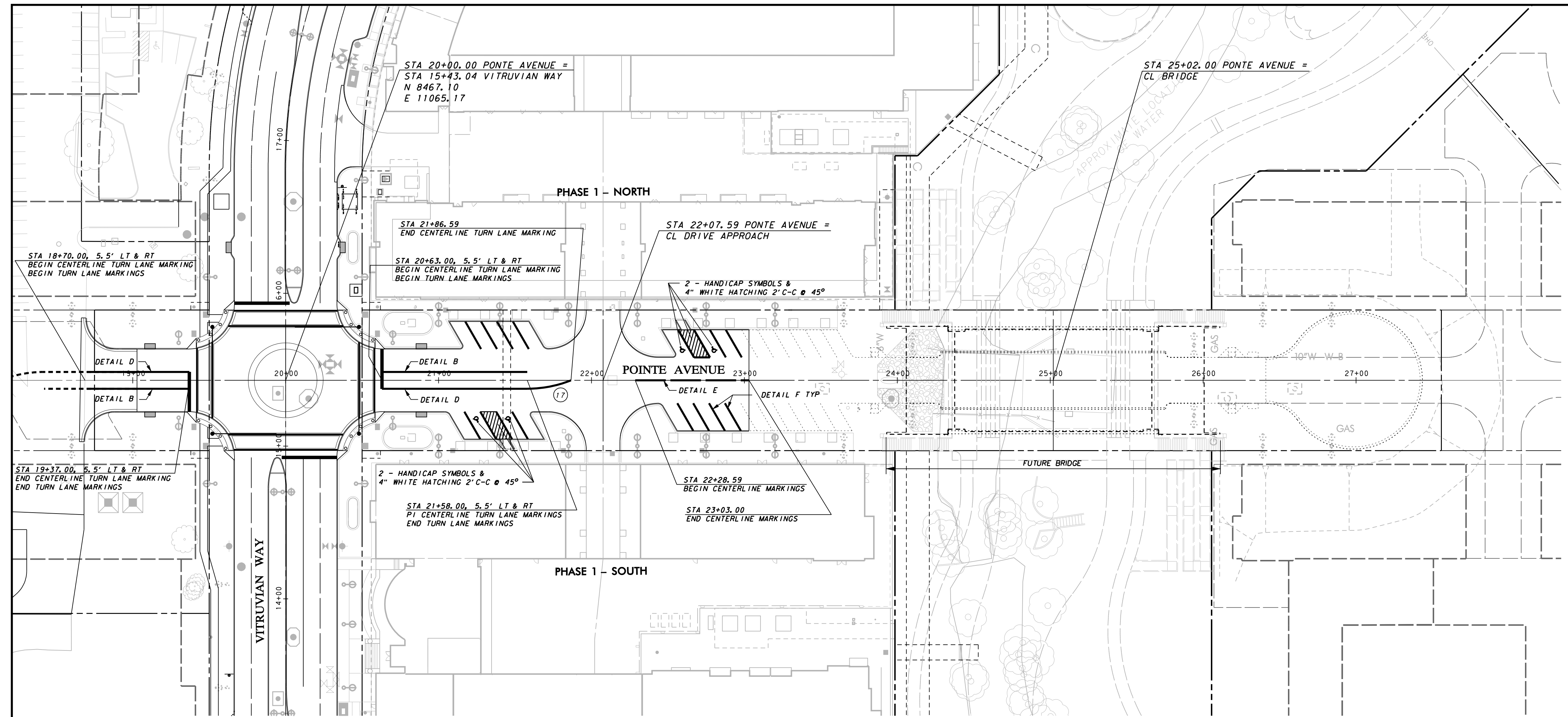
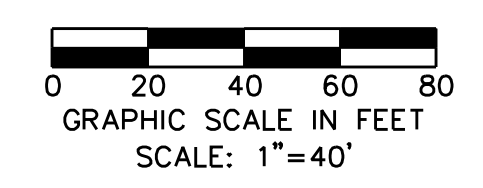
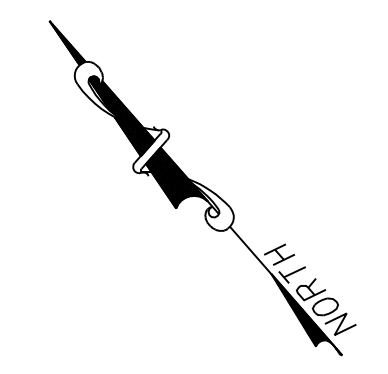
NO.	REVISION	BY	DATE

**Addison** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

PAVEMENT MARKING AND SIGNAGE-VW  
STA 17+00.00 TO STA 30+00.00

<b>icon</b> Consulting Engineers, Inc. Civil Engineers - Designers - Planners	250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210				
PROJECT: 5029-01	DESIGN: ICE	DRAWN: ICE	DATE: MAY 7 2009	FILE: PW# 2009-01	SHEET: 47



**PAVEMENT MARKING & SIGNAGE NOTES:**

1. SIGN LOCATIONS SHOWN ON PLANS ARE DIAGRAMMATIC. SIGNS WILL BE PLACED IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST ADDITION.
2. REFLECTIVE SHEETING WILL BE DESIGNATED AS:  
TYPE A=ENGINEER GRADE  
TYPE B=SUPER ENGINEER GRADE  
TYPE C=HIGH INTENSITY PRISMATIC
3. NO BREAKAWAY SUPPORT IS TO BE PROVIDED.
4. DO NOT REMOVE EXISTING PAVEMENT MARKINGS OR SIGNAGE PRIOR TO NEW ROADWAY OPENING TO TRAFFIC.
5. ALL PAVEMENT MARKINGS TO BE ALKYD THERMOPLASTIC WITH 0.090 INCHES THICKNESS.

CURVE DATA			
NO	RADIUS	DELTA	LENGTH
17	77.08'	21°46'32"	29.29'

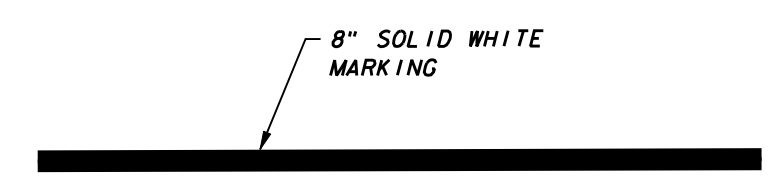
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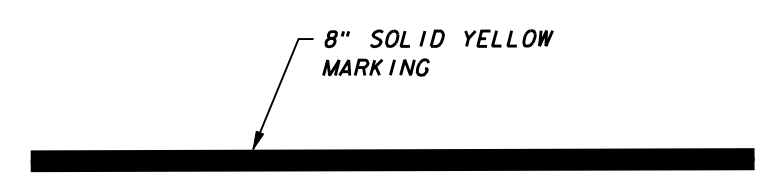
SUMMARY OF SMALL SIGNS (WITHOUT REMOVABLE COPY)								
SIGN NO.	SIGN TYPE	SIGN TEXT	SIGN DIMENSIONS (INCHES)	REFLECTIVE SHEETING	PLYWOOD TYPE A	ALUMINUM TYPE A	TYPE OF MOUNT	QUANTITY

BM #1 REF. ELEVATION = 559.47  
SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

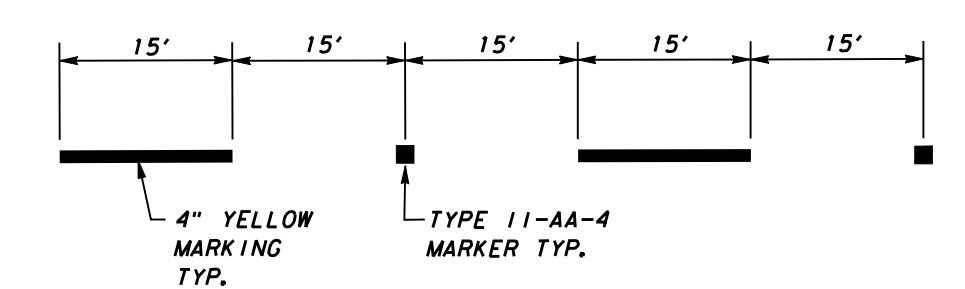
BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



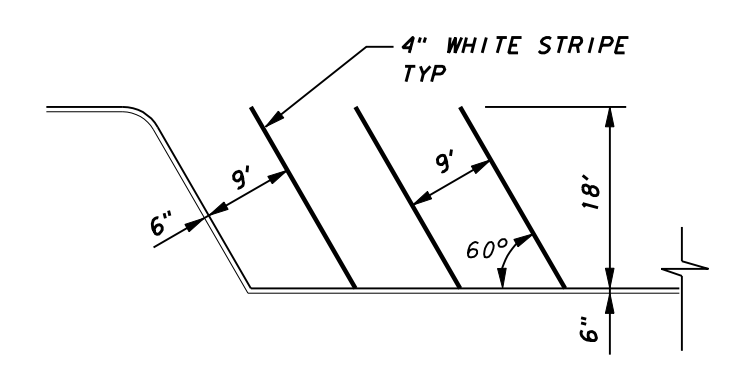
**DETAIL B**  
TYPICAL TURN LANE MARKINGS  
NOT TO SCALE



**DETAIL D**  
TYPICAL CENTERLINE TURN LANE MARKINGS  
NOT TO SCALE



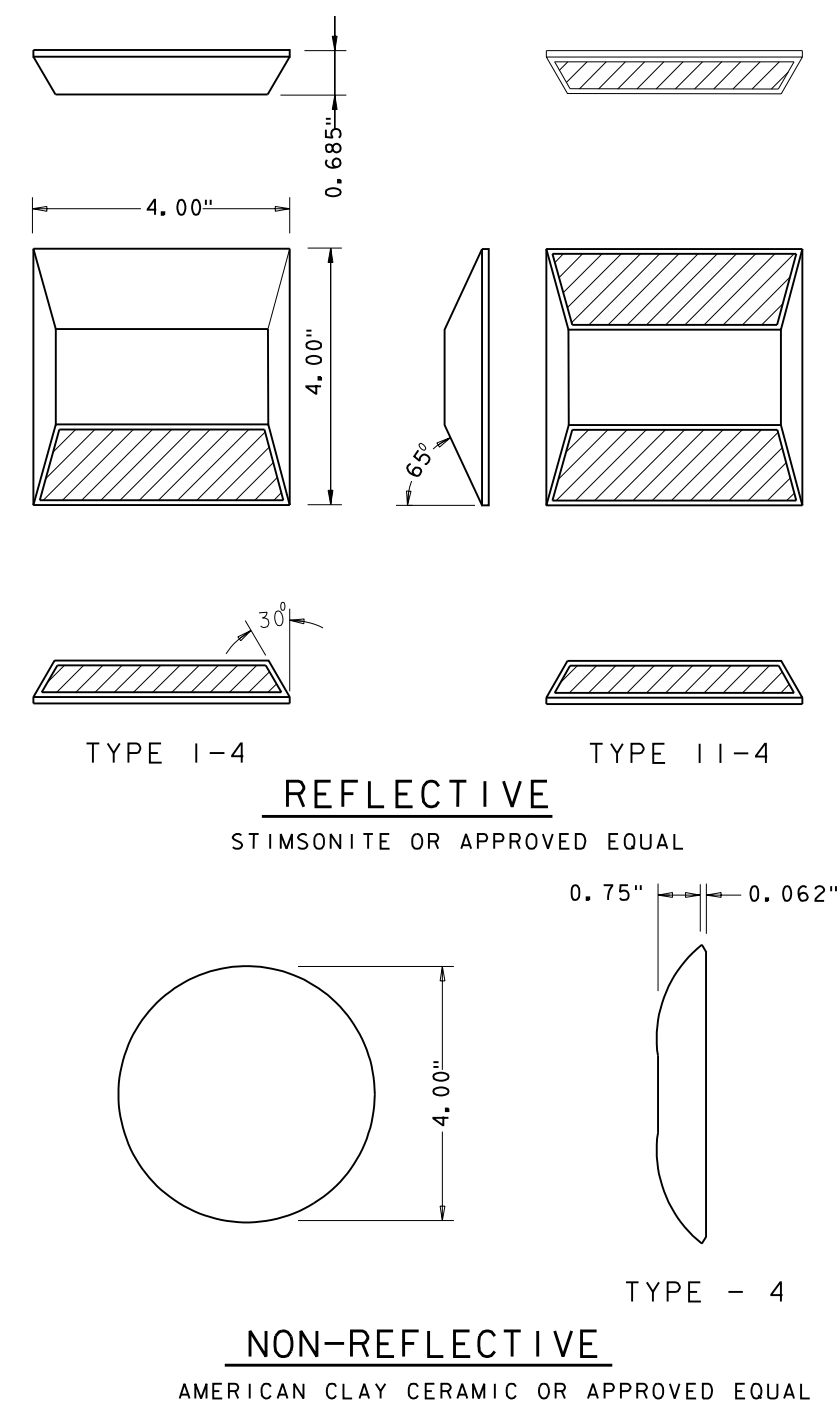
**DETAIL E**  
TYPICAL CENTERLINE MARKINGS  
NOT TO SCALE



**DETAIL F**  
TYPICAL 60° PARKING  
NOT TO SCALE

NO.	REVISION	BY	DATE
<b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS			
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY & PONTE AVENUE			
<b>PAVEMENT MARKING AND SIGNAGE-PA</b> STA 20+64.00 TO STA 26+41.00			
<b>icon</b> Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210			
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	48		

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



**BUTTON DESIGN**

**EPOXY ADHESIVE TO BE USED**

TYPE III & III-M  
(HAND MIX) (MACHINE MIX)

PAVEMENT TEMP., °F	APPROX. SET TIME (HR) TYPE III & III-M
(a) 115	(a) 1
(b) 95	(b) 2
(c) 77	(c) 4
(d) 60	(d) 8
(e) 50	(e) -

**NOTES:**

- (1) ALL ROADWAY MARKERS SHALL MEET CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE SPECS & SHALL BE APPROVED BY THE TOWN OF ADDISON PRIOR TO INSTALLATION.
- (2) A 1/16" CHALK LINE SHALL BE USED TO MARK LOCATION OF MARKERS TO BE PLACED ON PAVEMENT. ALL MARKERS SHALL BE IN LINE WITH NO VARIANCES OTHER THAN NECESSARY FOR PROPER ALIGNMENT OF TRAVEL LANES.
- (3) MARKERS SHALL NOT BE PLACED ON SAW JOINTS OF CONCRETE PAVEMENTS, BUT SHALL BE TWO (2) INCHES OFF OF THE SAW JOINT (AS APPROVED BY SIGNS & MARKINGS DIV.).
- (4) THE SURFACES ON WHICH MARKINGS ARE TO BE APPLIED SHALL BE CLEAN, DRY SURFACES & FREE OF LOOSE PARTICLES, DIRT, ACCUMULATIONS OF TAR & GREASE OR OTHER DELETERIOUS MATERIALS.
- (5) WHEN MARKINGS ARE TO BE PLACED ON PORTLAND CEMENT CONCRETE PAVEMENT LESS THAN 1 YEAR OLD, THE PAVEMENT SHALL BE CLEANED OF ALL RESIDUE & CURING COMPOUNDS PRIOR TO THE PLACEMENT OF THE MARKING MATERIAL.
- (6) YELLOW MARKERS PLACED SIDE BY SIDE TO FORM A DOUBLE LINE SHALL HAVE A 4" SPACE BETWEEN MARKERS
- (7) WHITE MARKERS PLACED SIDE BY SIDE TO FORM A DOUBLE LINE SHALL HAVE A 4" SPACE BETWEEN MARKERS
- (8) WHITE MARKERS PLACED SIDE BY SIDE TO FORM A WIDE LINE SHALL BE ADJACENT TO EACH OTHER

NOTE: CROSSWALKS WITH LONGITUDINAL LINES SHALL BE USED AT MID-BLOCK CROSSINGS AND NON PROTECTED CROSSINGS.

**ROADWAY MARKERS SPECIFICATIONS**

**COLOR OF MARKERS:**

- A: YELLOW BODY-AMBER REFLECTOR    Y: YELLOW BODY-NON REFLECTIVE
- C: WHITE BODY-CRYSTAL REFLECTOR    W: WHITE BODY-NON REFLECTIVE
- R: RED BODY-RED REFLECTOR

**REFLECTIVE FACES:**

- I : ONE FACE REFLECTORIZED
- II: BOTH FACES REFLECTORIZED

**SIZES & KINDS OF MARKERS:**

- 4 : 4" LANE MARKER

**EXAMPLES OF ROADWAY MARKERS:**

- TYPE II-CR-4 : 4" REFLECTORIZED LANE MARKER, ONE FACE REFLECTS CRYSTAL, ONE FACE REFLECTS RED LIGHT.
- TYPE Y-4 : 4" NON-REFLECTIVE YELLOW LANE MARKER

**ROADWAY MARKERS TO BE USED**

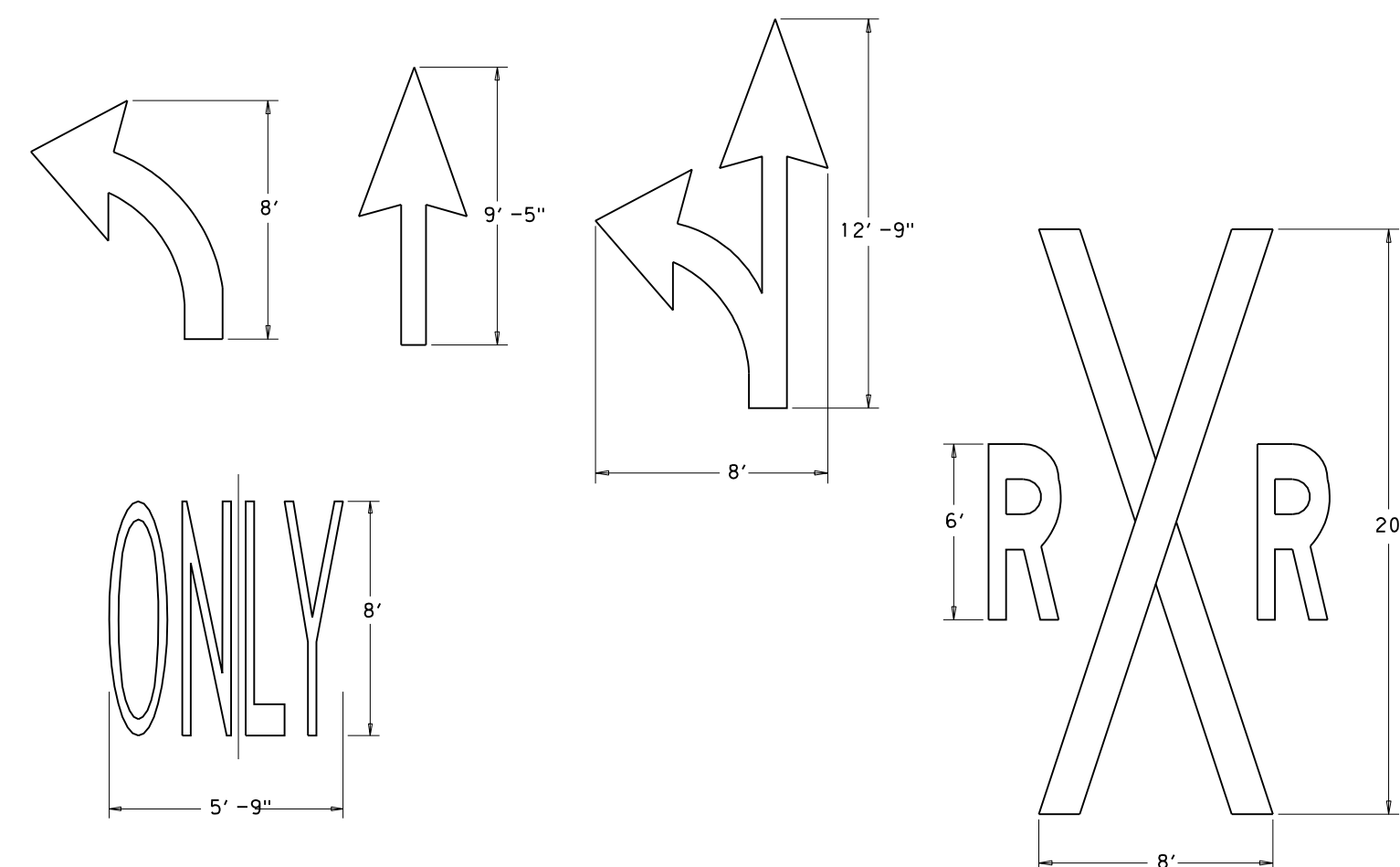
**LANE MARKERS:**

- TYPE Y-4    TYPE I-C-4    TYPE II-AA-4
- TYPE W-4    TYPE II-CR-4

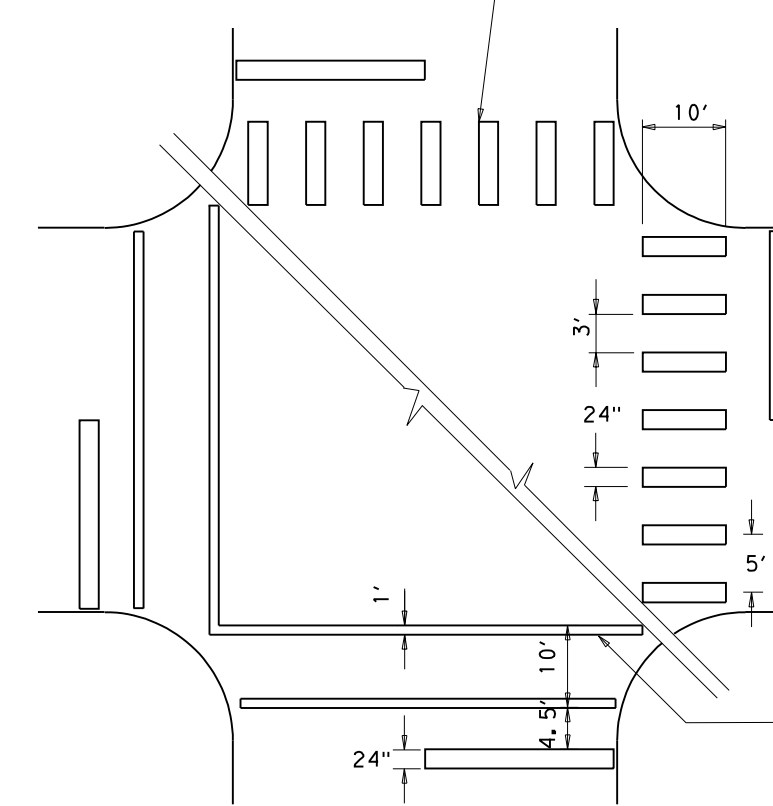
**STOP BARS, CROSSWALKS, AND PAVEMENT MESSAGES**

ALL STOP BARS, CROSSWALKS, & PAVEMENT MESSAGES SHALL MEET TOWN OF ADDISON SPECIFICATIONS. BEFORE INSTALLATION, CONTACT TOWN OF ADDISON FOR SPECIFICATIONS.

TWENTYFOUR INCH TAPE SHALL BE USED FOR STOP BARS, AND CROSSWALKS WITH LONGITUDINAL LINES. TWELVE INCH TAPE SHALL BE USED AT CROSSWALKS WITH PARALLEL LINES. NO TAPE COMBINATIONS WILL BE ALLOWED. FOUR INCH TAPE WILL BE USED FOR LANE LINES, IF APPLICABLE. TAPE TO BE USED IS 3M STA-MARK, A-420 OR APPROVED EQUAL. PREFORMED THERMOPLASTIC TAPE MAY BE USED DURING COLD WEATHER WITH PRIOR APPROVAL FROM THE TOWN OF ADDISON CONTACT CEMENT E-44 MUST FOLLOW MANUFACTURERS APPLICATION INSTRUCTIONS. ALL PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PER THE LATEST AMENDMENT.



**LANE MARKERS**



**STANDARD CROSSWALKS AND STOP BARS PAVEMENT MARKINGS**

NOTE: CROSSWALKS WITH PARALLEL LINES SHALL BE USED AT PROTECTED CROSSINGS.

**TYPICAL PAVEMENT MARKINGS**



NO.	REVISION	BY	DATE

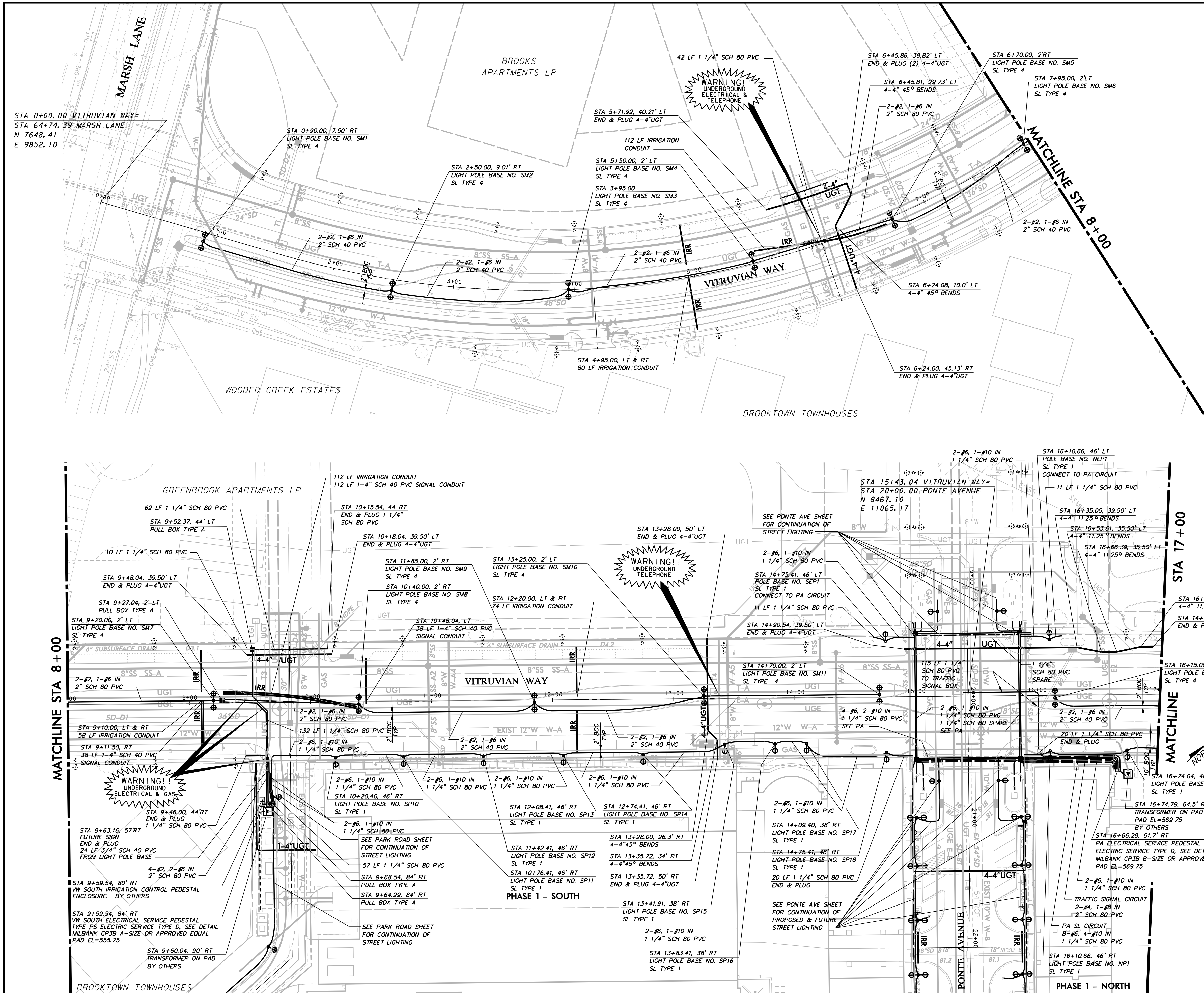
**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**PAVEMENT MARKING & SIGNAGE DETAILS**

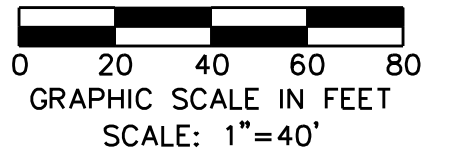
PROJECT		DESIGN		DRAWN		DATE		FILE		SHEET	
5029-01		ICE		ICE		MAY 7 2009		PW# 2009-01		49	

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



**LEGEND**

- PULL BOX (GROUND BOX)
- PVC CONDUIT (LIGHTING)
- PVC CONDUIT (POWER)
- TRANSFORMER ON PAD
- STREET LIGHT - 400W
- STREET LIGHT - FUTURE 400W
- STREET LIGHT - 100W
- STREET LIGHT - FUTURE 100W
- DUPLEX 20A GFCI RECEPTACLE HUBBELL CFR5.3625GW OR EQ
- \* PROVIDED BY POWER COMPANY



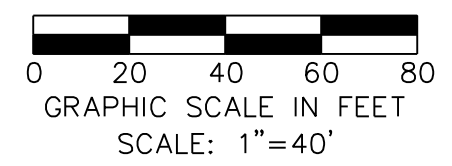
**STREET LIGHTING & CONDUIT NOTES**

1. REFER TO SHEET 3 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.
2. REFER TO SHEET ED(1)-03 FOR ELECTRIC DETAILS - CONDUIT. RIGID METAL CONDUIT ELBOWS ARE NOT REQUIRED.
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4. REFER TO SHEET ED(3)-03 FOR ELECTRIC DETAILS - GROUND BOXES. RIGID METAL CONDUIT ELBOWS ARE NOT REQUIRED. CONCRETE APRON IS NOT REQUIRED.
5. REFER TO SHEET ED(5)-03 FOR ELECTRIC DETAILS - SERVICE ENCLOSURE & NOTES. ELECTRICAL SERVICE TYPE D.
6. REFER TO SHEET ED(8)-03 FOR ELECTRIC DETAILS - ELECTRICAL SERVICE SUPPORT PEDESTAL SERVICE TYPE PS. PEDESTAL SERVICE SHALL BE ALUMINUM, COLOR PINE GREEN. RIGID METAL ELBOWS ARE NOT REQUIRED.
7. WATER, SANITARY SEWER, AND STORM DRAIN LINES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL LOCATE ALL UTILITY LINES IN THE AREA PRIOR TO DIGGING.
8. INSTALL SCHEDULE 40 PVC UNDERGROUND (24" MIN COVER). ALL STREET AND DRIVEWAY CROSSINGS (30" MIN COVER). ALL BENDS TO LONG RADIUS.
9. ALL CONDUIT AT POLE BASES TO BE WITHIN THE DRILLED SHAFT FOUNDATION. NO EXPOSED CONDUIT AT POLE BASES WILL BE ALLOWED.
10. SL TYPE 1 - SINGLE 100W 240V MH LUMINAIRE ON 11'-8" POLE, COLOR SILVER- REFERENCE SPECIAL PROVISIONS
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- SL TYPE 3 - SINGLE 400 W 240V MH LUMINAIRE ON 30' POLE, COLOR SILVER- REFERENCE SPECIAL PROVISIONS
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11. CONNECTION TO POWER COMPANY CIRCUITS TO BE MADE ONLY BY POWER COMPANY.
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 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

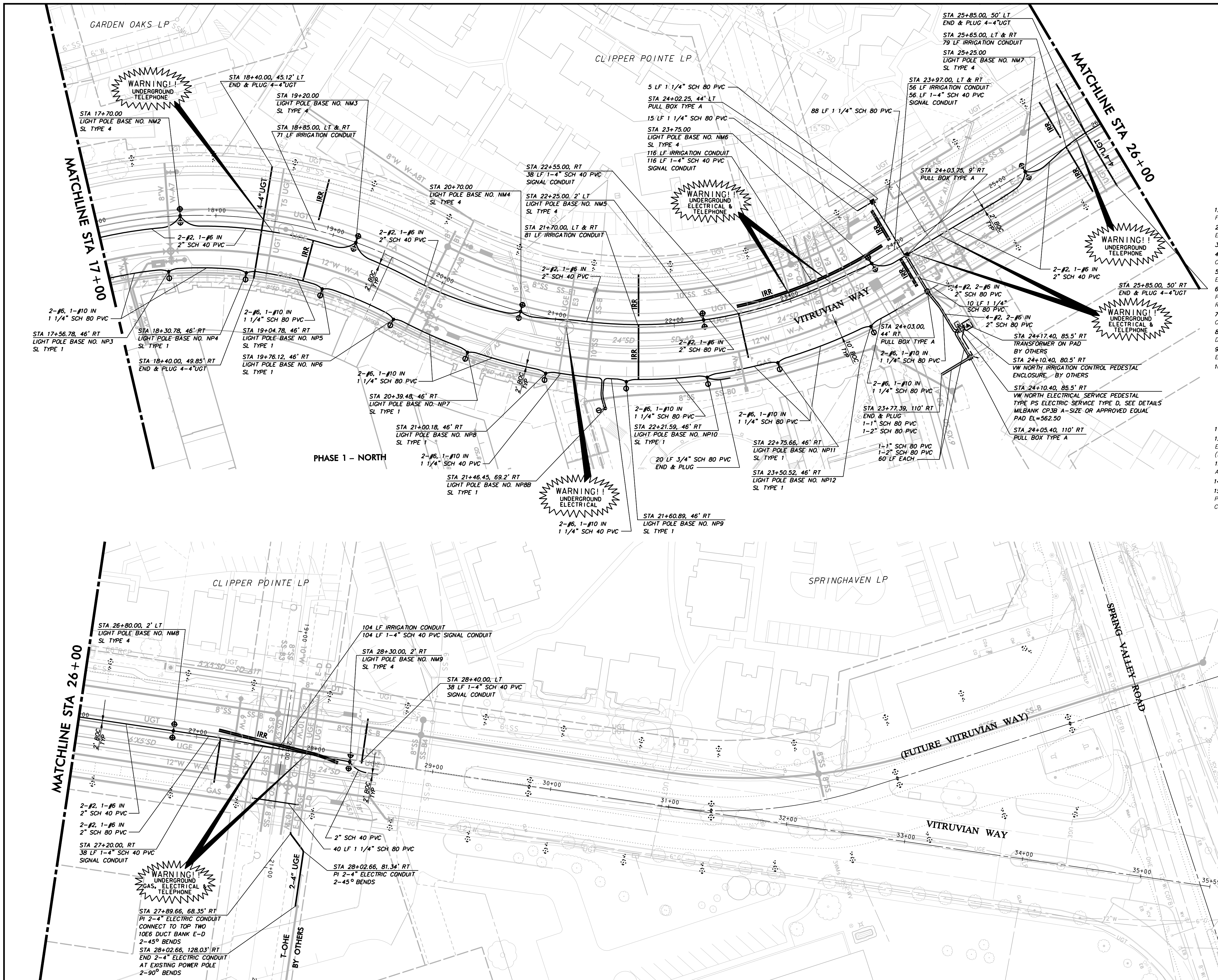
**Addison** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**STREET LIGHT AND CONDUIT PLAN**  
 VV

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, TX 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	50



**LEGEND**

- PULL BOX (GROUND BOX)
- PVC CONDUIT (LIGHTING)
- PVC CONDUIT (POWER)
- TRANSFORMER ON PAD \*
- STREET LIGHT - 400W
- STREET LIGHT - FUTURE 400W
- STREET LIGHT - 100W
- STREET LIGHT - FUTURE 100W
- DUPLEX 20A GFCI RECEPTACLE
- HUBBELL GFR5362SGW OR EQ
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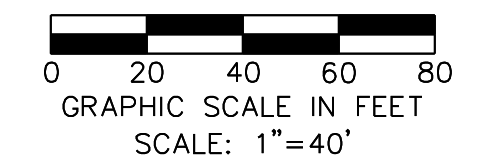
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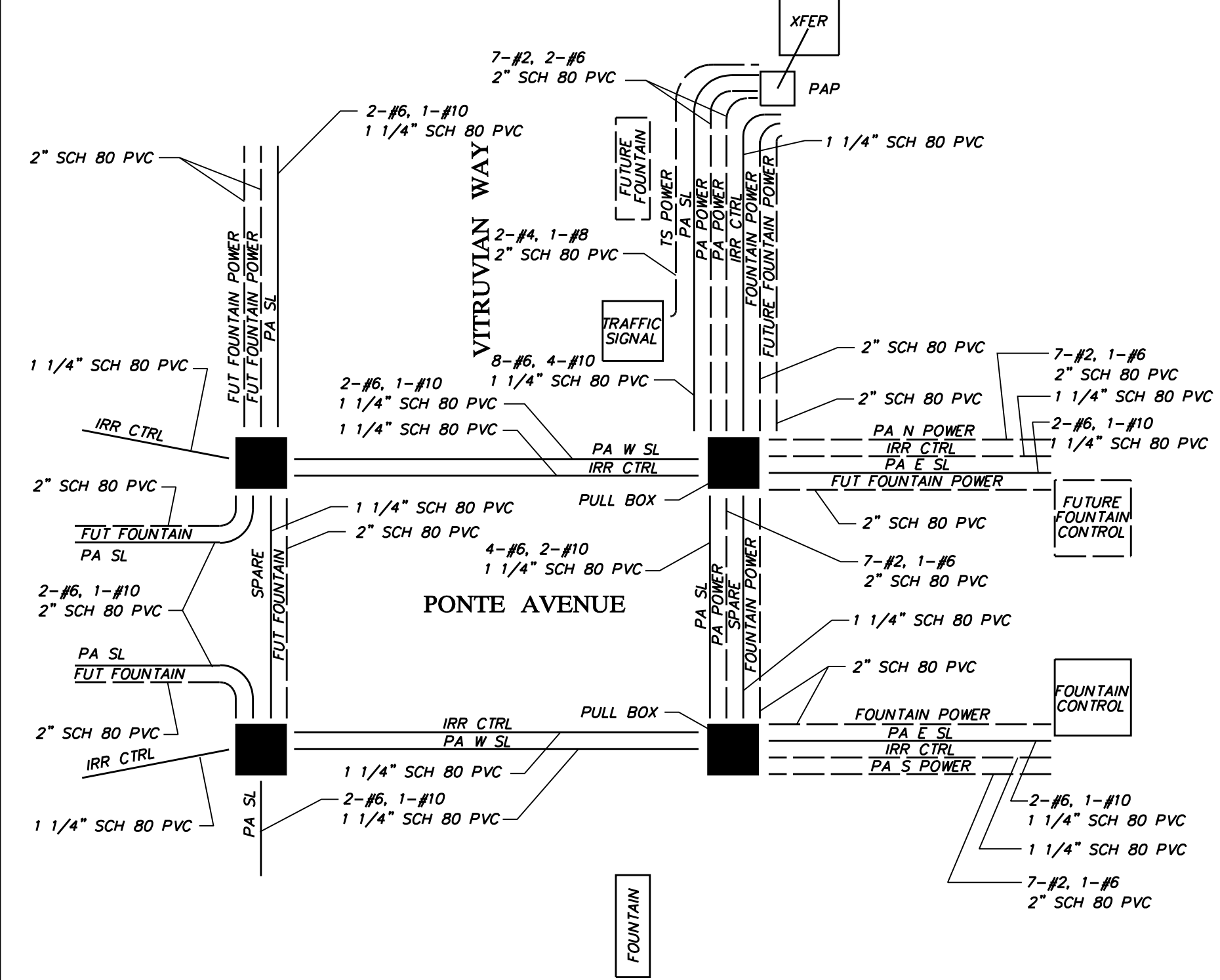
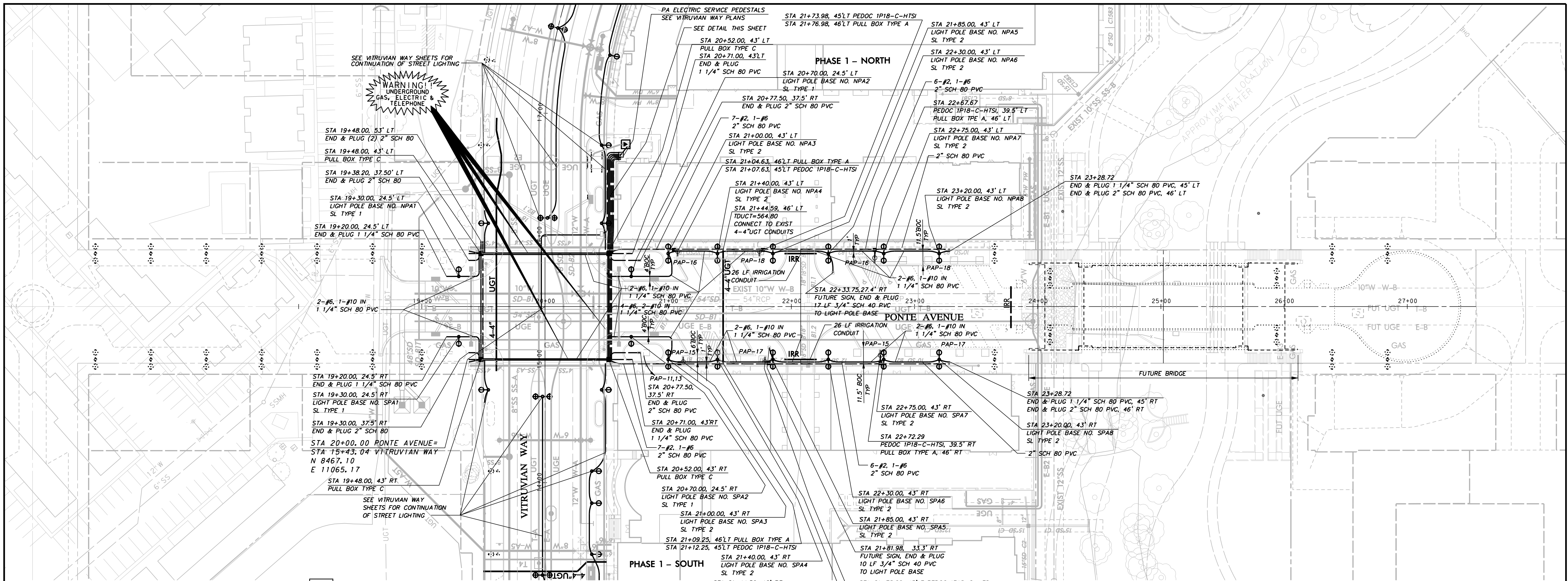


NO.	REVISION	BY	DATE

**Addison** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS  
 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE  
 STREET LIGHT AND CONDUIT PLAN  
 VW

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	51		

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



**PONTE AVE LIGHTING & POWER  
ONE LINE DIAGRAM**  
NOT TO SCALE

**STREET LIGHTING & CONDUIT NOTES**

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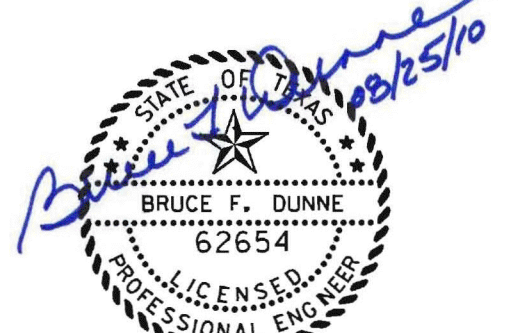
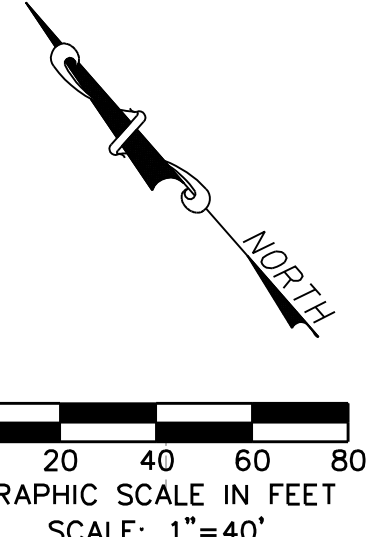
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**PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE**

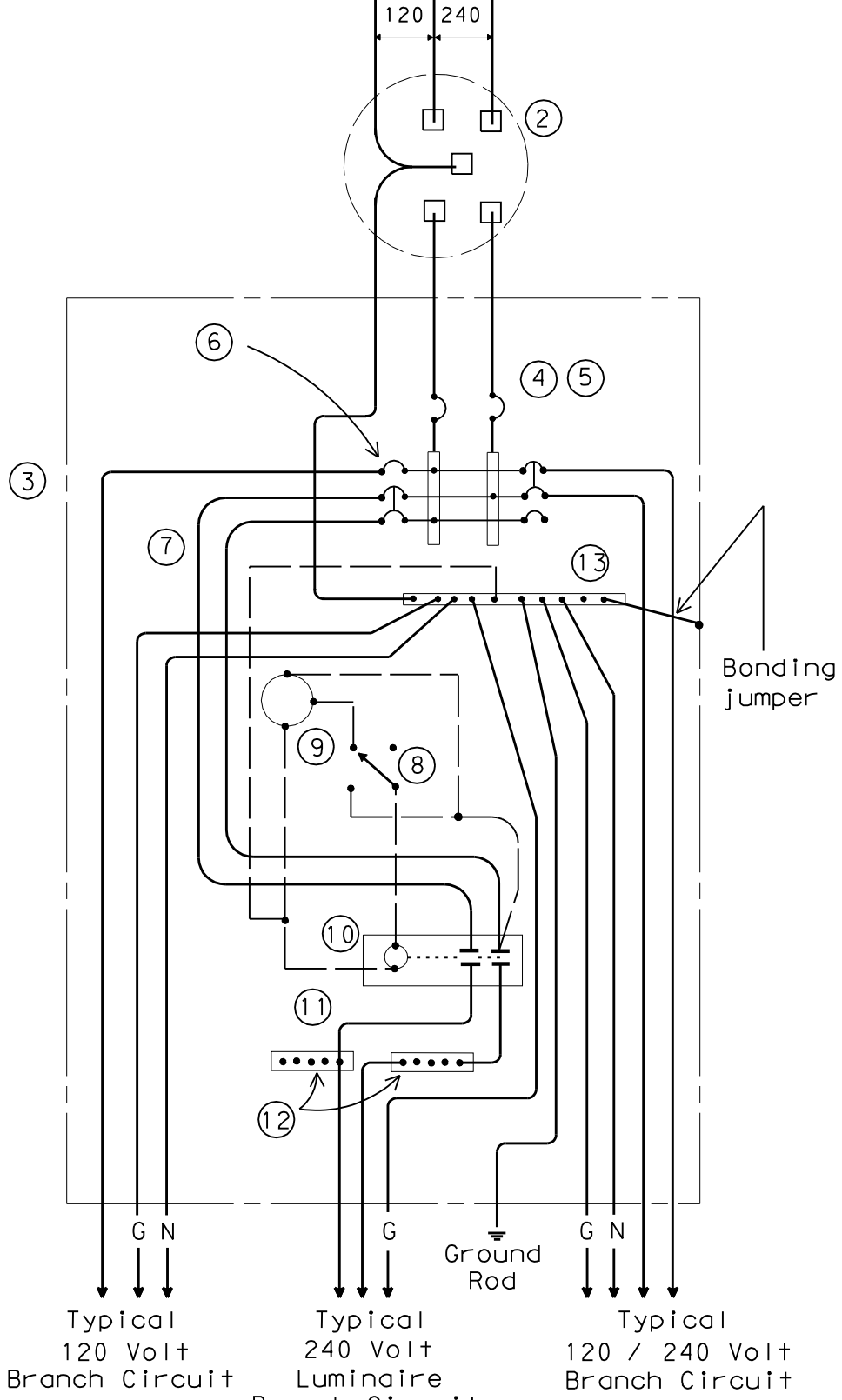
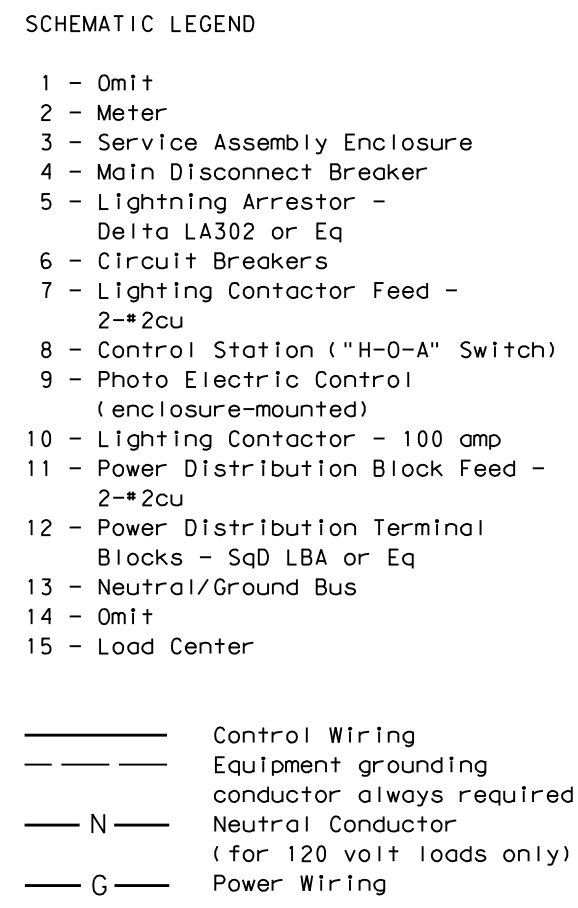
**STREET LIGHT AND CONDUIT PLAN  
PA**

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	52

Panel Schedule		Single Phase		Date: 9/25/2009							
Project: Vitruvian Way		Panel Name: VVSP-South Pedestal		Main Bkr: 200 Amps							
Panel Name: VVSP-South Pedestal		Volts-L-L: 240		Main Lugs: Amps							
Mfg:		Volts-L-G: 120		Panel A/C: 22,000 Amps							
Model:		Phase: 1		Neutral Bar: Y/N							
Description:		Wires: 3		Ground Bar: Y/N							
Location: I		*I=Indoor, *O=Outdoor									
Breaker Mounting: S		*S=Standard, *B=Ball-In									
Pos. No.	Bkr. No.	Trip Amps	No. Poles	Serves	Load VA	Pos. No.	Bkr. No.	Trip Amps	No. Poles	Serves	
1	90		2	Lighting Contactor	< 7850 >	2	20	1		Pedestal Duplex Outlet	
3	90			Lighting Contactor	< 1920 >	4	20	1		Irrigation Controller	
5	20		1	Space		6				Space	
7				Space		8				Space	
9				Space		10				Space	
11				Space		12				Space	
Connected VA per Leg =					9770	9770					
Total Amps per Leg =					81	81					
Main Lugs: Lighting Contactor											
Pos. No.	Bkr. No.	Trip Amps	No. Poles	Serves	Load VA	Pos. No.	Bkr. No.	Trip Amps	No. Poles	Serves	
1	50		2	Median Distribution Blk	< 4400 >	2	40	2		Parkway Distribution Blk	
3	50			Median Distribution Blk	< 3450 >	4	40	2		Parkway Distribution Blk	
Connected VA per Leg =					7850	7850					
Total Amps per Leg =					65	65					

VVSP - POWER DISTRIBUTION TERMINAL BLOCKS  
 MEDIAN LIGHTS - 2 POLE, MAIN = 1, BRANCH = 4 SdQ LBA 263104 OR EO  
 MEDIAN NORTH, MEDIAN SOUTH & SPACE  
 PARKWAY LIGHTS - 2 POLE, MAIN = 1, BRANCH = 6 SdQ LBA 263106 OR EO  
 LT PARKWAY SOUTH, LT PARKWAY NORTH, RT PARKWAY SOUTH  
 RT PARKWAY NORTH, PARK ROAD & SPACE

Two Photocell viewing windows not shown but required when photocell is listed as enclosure mounted.



SCHEMATIC TYPE D  
 120/240 VOLTS - THREE WIRE

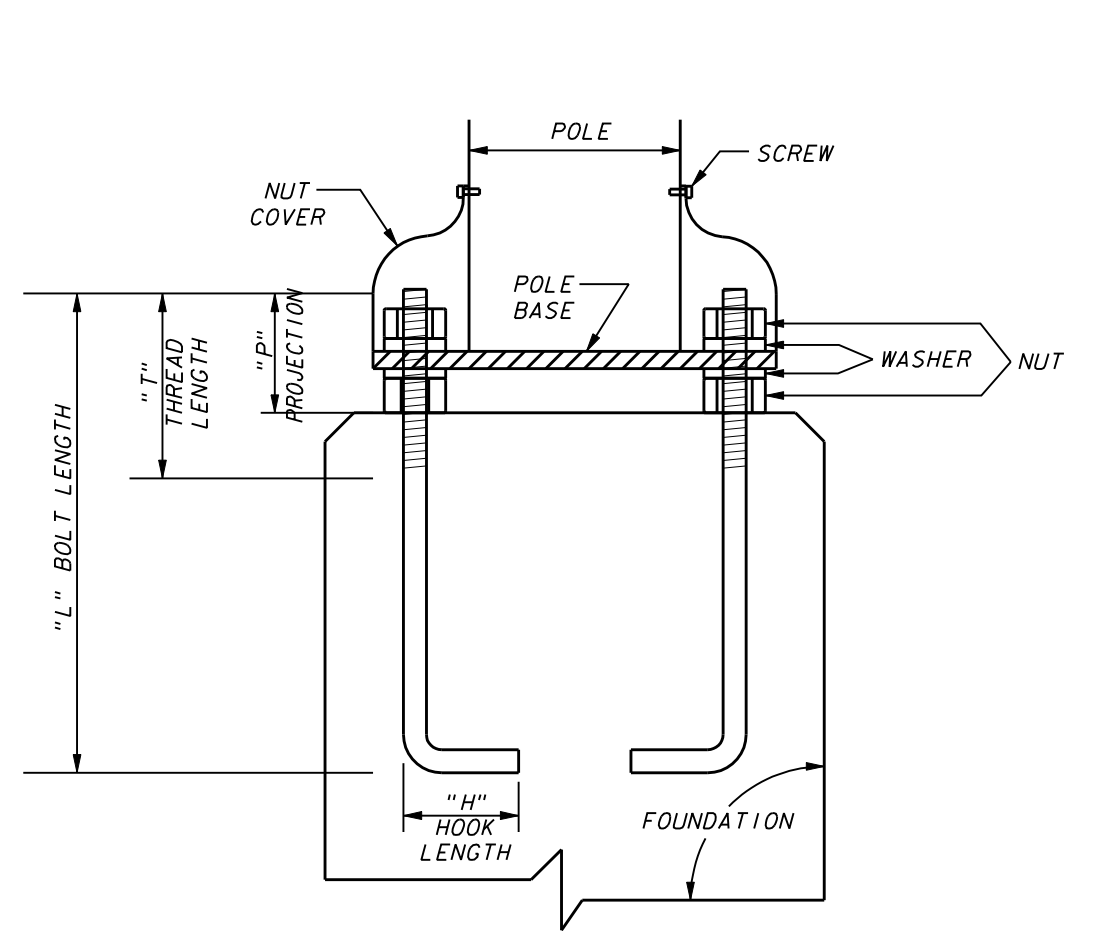
TYPE D SERVICE NOTES

Photocell and lighting contactor shall be located in the same UL type 3R enclosure with load center. There shall be a window on each side of enclosure to allow operation of photocell. Both photocell, contactor and breaker area shall have dead front trim. Type D load center with lighting controls shall have power distribution blocks for a minimum of 12, #2 conductors.

ELECTRIC SERVICE PEDESTAL SCHEMATIC

Panel Schedule		Single Phase		Date: 9/25/2009							
Project: Vitruvian Way		Panel Name: VVNP-North Pedestal		Main Bkr: 200 Amps							
Panel Name: VVNP-North Pedestal		Volts-L-L: 240		Main Lugs: Amps							
Mfg:		Volts-L-G: 120		Panel A/C: 22,000 Amps							
Model:		Phase: 1		Neutral Bar: Y/N							
Description:		Wires: 3		Ground Bar: Y/N							
Location: I		*I=Indoor, *O=Outdoor									
Breaker Mounting: S		*S=Standard, *B=Ball-In									
Pos. No.	Bkr. No.	Trip Amps	No. Poles	Serves	Load VA	Pos. No.	Bkr. No.	Trip Amps	No. Poles	Serves	
1	100		2	Lighting Contactor	< 9522 >	2	20	1		Pedestal Duplex Outlet	
3	100			Lighting Contactor	< 1920 >	4	20	1		Irrigation Controller	
5	20		1	Space		6	20	1		Two Duplex Outlets - VP	
7				Space		8	20	1		Two Duplex Outlets - VP	
9				Space		10				Space	
11				Space		12				Space	
Connected VA per Leg =					13362	13362					
Total Amps per Leg =					111	111					
Main Lugs: Lighting Contactor											
Pos. No.	Bkr. No.	Trip Amps	No. Poles	Serves	Load VA	Pos. No.	Bkr. No.	Trip Amps	No. Poles	Serves	
1	55		2	Median Distribution Blk	< 5200 >	2	45	2		Parkway Distribution Blk	
3	55			Median Distribution Blk	< 4344 >	4	45	2		Parkway Distribution Blk	
Connected VA per Leg =					9544	9544					
Total Amps per Leg =					80	80					

VVNP - POWER DISTRIBUTION TERMINAL BLOCKS  
 MEDIAN LIGHTS - 2 POLE, MAIN = 1, BRANCH = 4 SdQ LBA 263104 OR EO  
 MEDIAN NORTH, PARK ROAD & SPACE  
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 LT PARKWAY SOUTH, LT PARKWAY NORTH, RT PARKWAY SOUTH  
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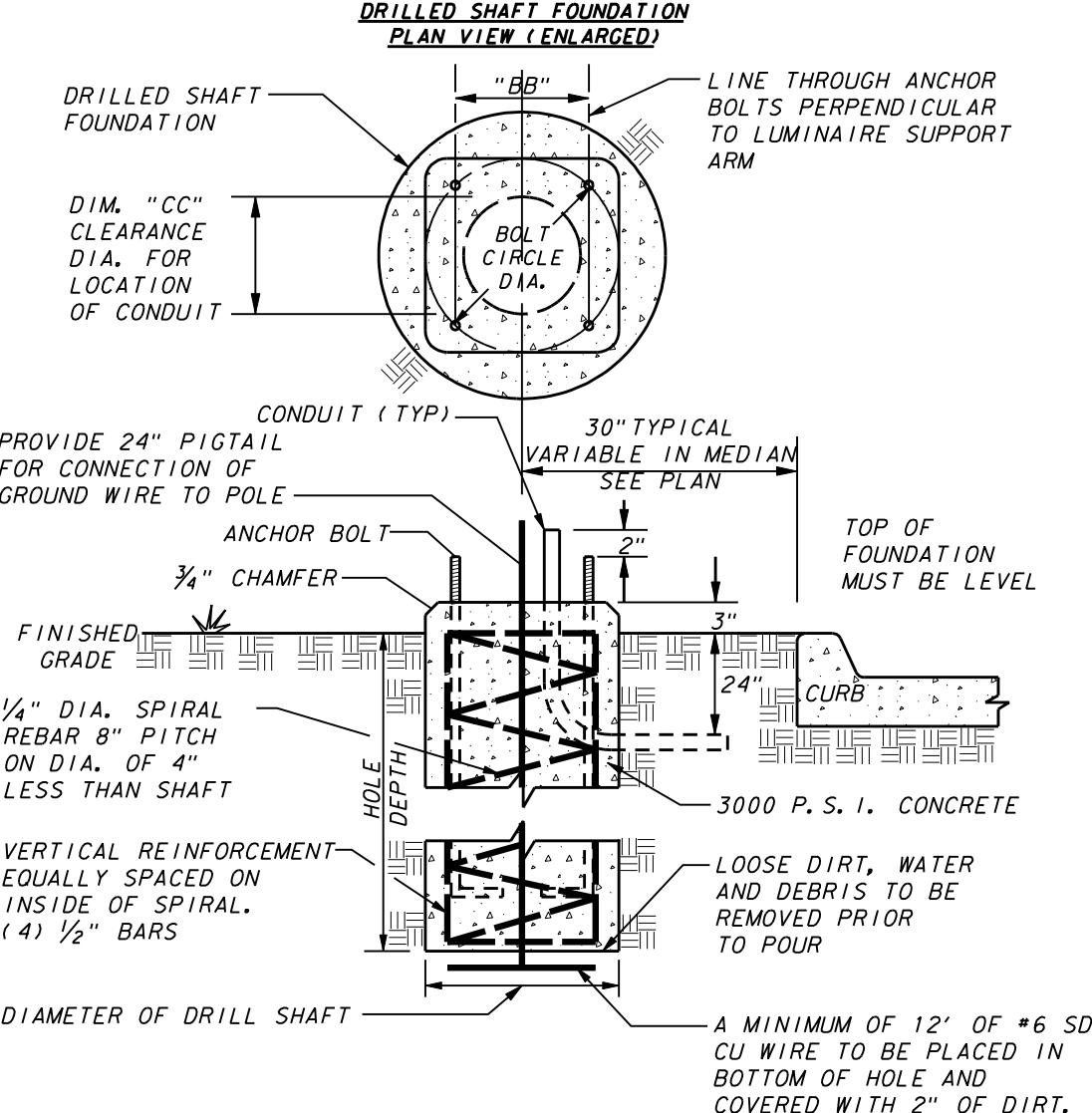


NOTES:  
 1. USE ANCHOR BOLT TEMPLATE FURNISHED BY POLE MANUFACTURER FOR ANCHOR BOLT ALIGNMENT.  
 2. ALL EXPOSED HARDWARE TO BE STAINLESS STEEL.

TYPE NO.	BOLT DIA. (IN.)	LENGTH "L" (IN.)	HOOK "H" (IN.)	THREAD "T" (IN.)	PROJECTION "P" (IN.)
45	3/4	17	3 1/2	5 1/2	3 1/2
47	1	36	4	6	4

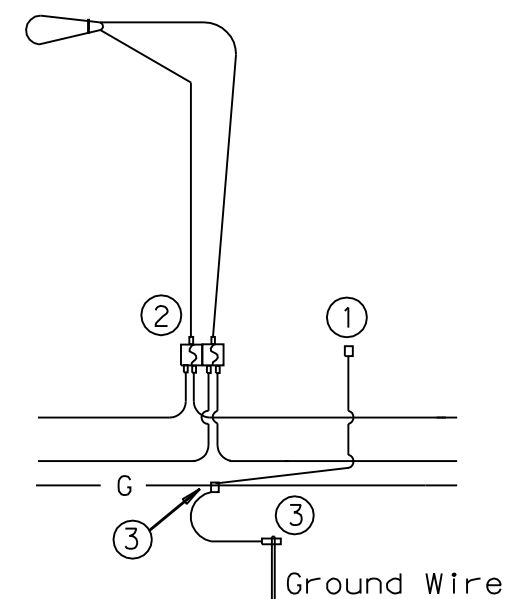
SUPPLY 2 NUTS & 2 WASHERS WITH EACH BOLT

ANCHOR BOLT DETAIL

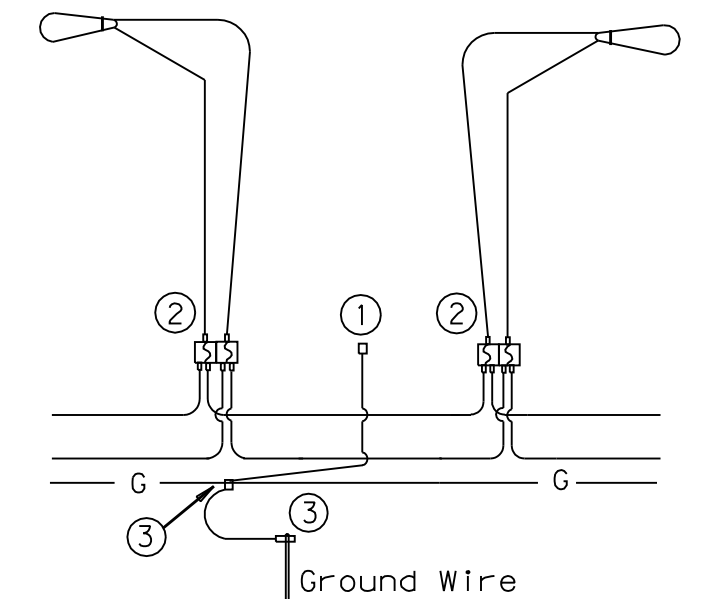


TYPE NO.	SHAFT DEPTH	SHAFT DIA.	BOLT CIRCLE DIA.	ANCHOR TYPE NO.	CONDUIT CLEARANCE DIM. "CC"	DISTANCE ACROSS BOLTS DIM "BB"
1	60"	18"	9 1/2"	45	4 1/2"	6 3/4"
2	60"	18"	9 1/2"	45	4 1/2"	6 3/4"
3	72"	24"	11 1/2"	47	7 1/2"	8 3/8"
4	72"	24"	11 1/2"	47	7 1/2"	8 3/8"

DRILLED SHAFT FOUNDATION



FOR THREE-WIRE CIRCUIT-CENTER GROUNDED LUMINAIRE SERVED AT 240V FOR 120/240 VOLT SERVICE SINGLE FIXTURE

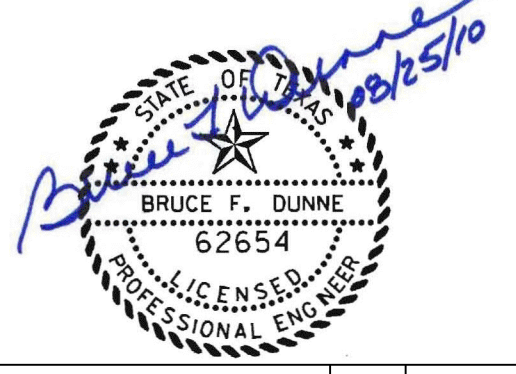


FOR THREE-WIRE CIRCUIT-CENTER GROUNDED LUMINAIRE SERVED AT 240V FOR 120/240 VOLT SERVICE DOUBLE FIXTURE

NOTES:

- Use threaded, copper or tin-plated copper, pole bonding connector, sized appropriately for conductors.
- Double-Pole inline fuse and connector, sized appropriately for conductors. Bussmann TRON HEY with 2A0660 & 2A0661 Insulating Boots and LIMITRON KTK-R fast acting fuses or equal - 100W fixture use 1 amp fuses, 400 W fixture use 4 amp fuses.
- Split Bolt or other connector.

ELECTRICAL CONNECTION DETAIL



NO.	REVISION	BY	DATE

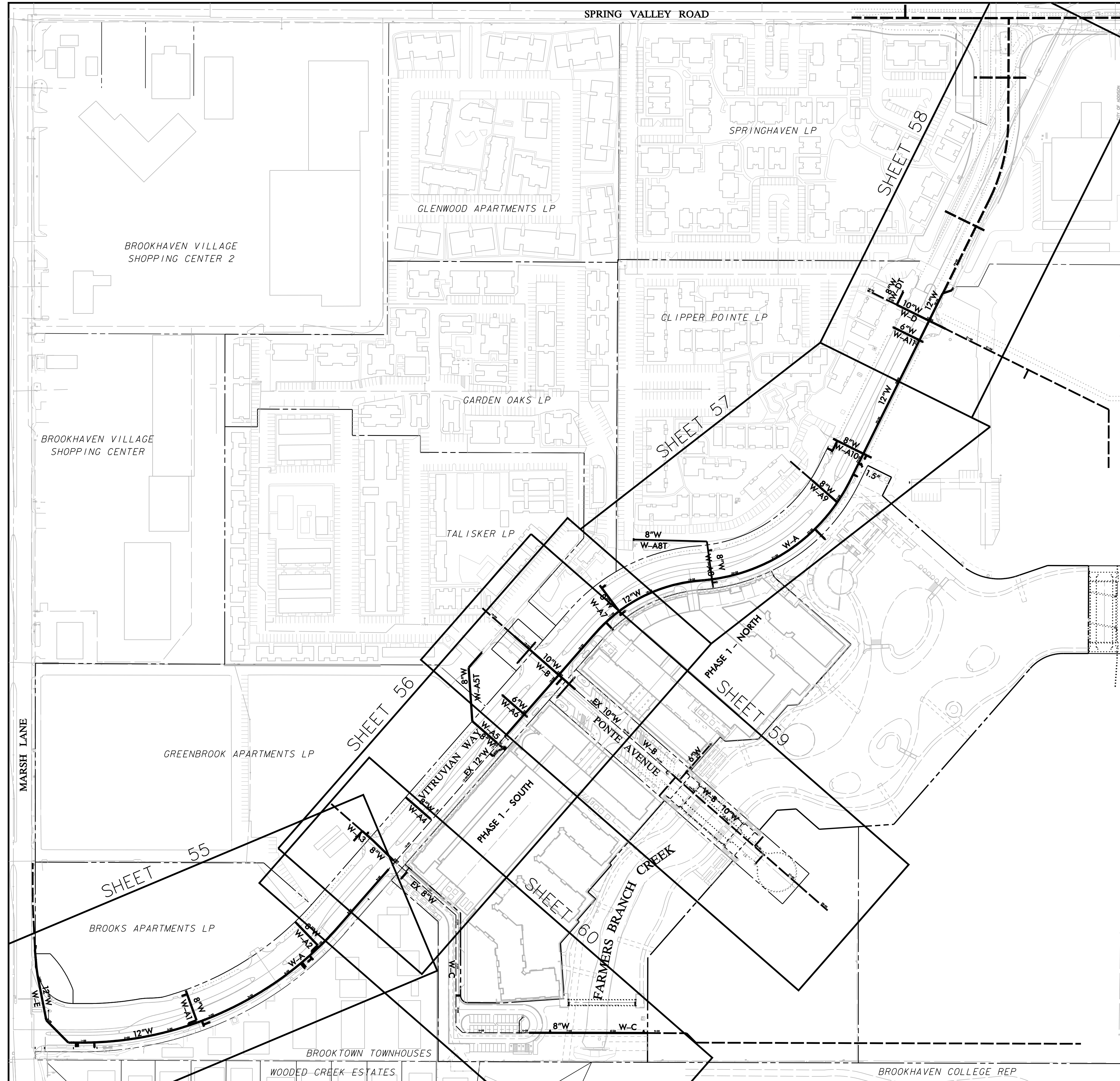
**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

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VITRUVIAN WAY & PONTE AVENUE

**STREET LIGHT DETAILS**

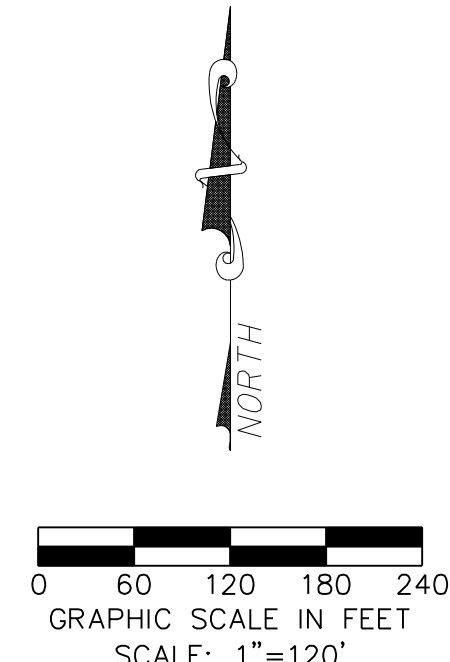
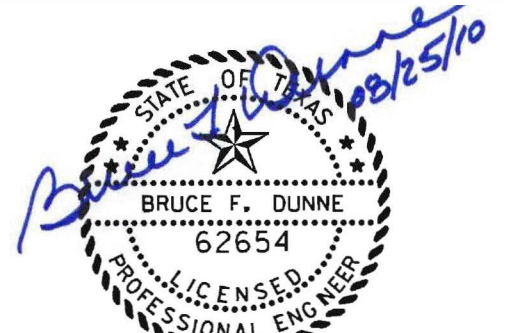
**icon** Consulting Engineers, Inc.  
Civil Engineers - Designers - Planners  
250 W. Southlake Blvd., Suite 117  
Southlake, TX 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	53



**GENERAL WATER & SEWER NOTES:**

- REFER TO SHEET 4 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THIS PROJECT.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION AS PUBLISHED BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, AND ANY ALL AMENDMENTS BY THE TOWN OF ADDISON, AS WELL AS STANDARD CONSTRUCTION DETAILS OF THE TOWN OF ADDISON.
- PRIOR TO COMMENCING CONSTRUCTION, THE TOWN OF ADDISON, THE CONSULTING ENGINEERS, THE SUCCESSFUL CONTRACTOR, UTILITY COMPANIES, AND ANY OTHER AFFECTED PARTIES, SHALL CONVENE FOR A PRE-CONSTRUCTION CONFERENCE AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- THE CONTRACTOR SHALL OBTAIN A RIGHT-OF-WAY PERMIT FROM THE TOWN OF ADDISON PRIOR TO WORKING WITH THE PUBLIC RIGHT-OF-WAY.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ANY PUBLIC UTILITY COMPANIES FOR LOCATION OF EXISTING FACILITIES IN OR NEAR THE WORK AREAS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:  
 TOWN OF ADDISON (WATER, SEWER, SIGNALS)    ATMOS ENERGY (GAS)  
 ONCOR ELECTRIC DELIVERY    VERIZON (MC)  
 AT&T (SOUTHWESTERN BELL)    TIME-WARNER CABLE
- THE CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER (SIX SETS EACH), FOR APPROVAL OF ALL MATERIALS TO BE ADDED TO THE PUBLIC INFRASTRUCTURE, PRIOR TO INCORPORATING MATERIALS INTO THE JOB.
- THE CONTRACTOR SHALL PROVIDE AND SUBMIT TO THE TOWN OF ADDISON (SIX SETS EACH), AN APPROVED TRENCH SAFETY PLAN, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS, FOR THE INSTALLATION OF UTILITIES GREATER THAN FIVE (5) FEET IN DEPTH.
- THE CONTRACTOR SHALL PROVIDE A MAINTENANCE BOND FOR PUBLIC INFRASTRUCTURE WORK IN THE FOLLOWING AMOUNTS:  
 • 10% FOR VALUATIONS LESS THAN OR EQUAL TO \$5,000  
 • \$5,000 FOR VALUATION GREATER THAN \$5,000 AND LESS THAN \$50,000  
 • 10% FOR VALUATIONS GREATER THAN \$50,000  
 BONDS SHALL BE FOR A PERIOD OF TWO YEARS BEGINNING WITH THE DATE OF FINAL ACCEPTANCE BY THE TOWN.
- THE CONTRACTOR SHALL FULLY COMPLY WITH AND SUPPLEMENT AS NECESSARY THE CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT.
- THE TOWN OF ADDISON PUBLIC WORKS DEPARTMENT WILL APPROVE AND/OR DETERMINE THE TRAFFIC CONTROL PLAN AND WORKING HOURS. CONTACT THE ASSISTANT CITY ENGINEER OR THE PUBLIC WORKS INSPECTOR AT (972) 450-2871.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, AND SUPPLEMENT AS NECESSARY, THE TRAFFIC CONTROL MEASURES ON THIS PROJECT INCLUDING PROVIDING ADEQUATE FLAGMEN, SIGNAGE, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION IN ACCORDANCE WITH THE "TEXAS MANUAL OF UNIFORM CONTROL DEVICES". THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OPEN AT ALL TIMES.
- TEMPORARY OR PERMANENT BARRICADES SHALL REMAIN AT ALL POINTS OF INGRESS OR EGRESS TO PREVENT PUBLIC USE UNTIL THE WORK RECEIVES FINAL ACCEPTANCE.
- THE CONTRACTOR SHALL COVER ALL OPEN EXCAVATIONS WITH ANCHORED STEEL PLATING, DURING NON-WORKING HOURS, ALONG EXISTING ROADWAYS AND TRAFFIC AREAS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE AT ALL TIMES DURING CONSTRUCTION INCLUDING PROVIDING ALL TEMPORARY STRUCTURES OR IMPROVEMENTS AS NECESSARY FOR THE SAFETY OF THE PUBLIC.
- THE TOWN OF ADDISON WILL PROVIDE A GEOTECHNICAL LABORATORY TO PERFORM APPROPRIATE TESTING DURING CONSTRUCTION ACTIVITIES. ANY TEST THAT FAILS TO MEET CITY REQUIREMENTS SHALL BE RETESTED AT THE CONTRACTOR'S EXPENSE.
- ROUGH GRADING SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF WATER AND SANITARY SEWER FACILITIES.
- THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, FENCES, TREES, SHRUBS, GAS MAINS, TELEPHONE CABLES, ELECTRIC CABLES, DRAINAGE PIPES, UTILITY SERVICES, AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW THE GROUND, THE COST OF WHICH SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ASSURE PROPER DEPTHS ARE ACHIEVED. IN THE EVENT OF A CONFLICT BETWEEN WATER LINES AND STORM DRAIN OR SANITARY SEWER PIPING, THE CONTRACTOR SHALL ADJUST THE WATER LINE DOWNWARDS IN SUCH A MANNER SO THAT THE PIPE MANUFACTURER'S RECOMMENDATIONS ON THE PIPE DEFLECTION AND JOINT STRESS ARE NOT EXCEEDED.
- THE CONTRACTOR SHALL VERIFY THE SIZE, TYPE, ELEVATION, CONFIGURATION, AND ANGLE OF EXISTING WATER, SANITARY SEWER AND UTILITY LINES PRIOR TO CONSTRUCTION OF TIE-IN MATERIALS. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR REPAIRS TO EXISTING FACILITIES DAMAGED BY HIS ACTIVITIES.
- ALL WATER MAIN MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF ADDISON'S WATER SYSTEM REQUIREMENTS.
- ALL WATER MAINS TWELVE-INCH (12") DIAMETER AND SMALLER SHALL BE ANSII/AWWA C-900-98 MOLECULARLY ORIENTED PVC PRESSURE PIPE WITH CAST IRON O. D. OR WHEN PIPE PENETRATES METER VAULT WALLS IT SHALL BE DUCTILE IRON. PIPE JOINTS SHALL BE RUBBER RING AND INTEGRAL THICKENED BELL ASSEMBLED WITH A FACTORY SUPPLIED LUBRICANT. WATER MAINS SHALL HAVE A MINIMUM CLASS RATING OF 150-PSI FOR DOMESTIC USE AND A MINIMUM CLASS RATING OF 200-PSI FOR FIRE LINE APPLICATIONS. JOINT MATERIAL FOR PVC SHALL CONFORM TO ASTM F417.
- EMBEDMENT FOR WATER AND SEWER MAINS SHALL COMPLY WITH NCOGOG CLASS "B" EMBEDMENT OF CRUSHED STONE TO THE SPRING LINE OF THE PIPE, WITH SAND (12" MIN) OVER THE PIPE. A LAYER OF GEO-TEXTILE FABRIC SHALL BE PLACED ON TOP OF THE STONE PRIOR TO THE PLACEMENT OF THE SAND.
- THE MINIMUM COVER TO THE TOP OF THE PIPE MUST VARY WITH THE VALVE STEM. IN GENERAL, THE MINIMUM COVER BELOW THE TOP OF CURB AT STREET TO TOP OF THE PIPE SHOULD BE AS FOLLOWS:  
 A. LINES LARGER THAN SIXTEEN-INCH (16") SHALL HAVE A MINIMUM OF SIX FEET (6') OF COVER WHICH IS SUFFICIENT TO ALLOW WATER AND SEWER AND OTHER UTILITIES TO GO OVER THE LARGE MAIN.  
 B. SIXTEEN-INCH (16") MAINS SHALL HAVE A MINIMUM COVER OF FIVE FEET (5').  
 C. TWELVE-INCH (12") AND SMALLER MAINS SHALL HAVE A MINIMUM COVER OF FOUR FEET (4').
- THE CONTRACTOR SHALL SUPPLY AND INSTALL ANY ADDITIONAL BENDS WITH THRUST BLOCKING AND OTHER APPURTENANCES REQUIRED TO ASSURE PROPER INSTALLATION OF WATER MAINS AND LATERALS. THE CONTRACTOR MAY PULL PIPE AS NEEDED AT THE BENDS WHERE THE DEFLECTION ANGLE OF THE PIPE DOES NOT MATCH THE ANGLE OF THE BEND PROVIDED THE PIPE DEFLECTION IS WITHIN TOLERABLE MANUFACTURERS LIMITS. THE COST FOR ADDITIONAL BENDS AND BLOCKING SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- ALL VALVES, DUCTILE IRON AND CAST IRON PIPE, FITTINGS AND SPECIALS SHALL BE POLYETHYLENE WRAPPED.
- HORIZONTAL BLOCKING FOR WATER LINES HAS BEEN OMITTED FOR CLARITY. HOWEVER, BLOCKING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES STANDARD DETAILS.
- ALL FITTINGS SHALL BE DUCTILE IRON, FULL BODIED, MECHANICAL JOINT TYPE WITH RESTRAINING GLANDS, AND HAVE A MINIMUM RATED WORKING PRESSURE OF 250 PSI. FITTINGS SHALL BE WRAPPED WITH 8-MIL POLY PRIOR TO BACKFILL.
- ALL VALVES AND FITTINGS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED. THRUST BLOCKING SHALL BE MINIMUM 3000 PSI CONCRETE AND BE ABLE TO WITHSTAND A MINIMUM 200 PSI TEST PRESSURE.
- THRUST BLOCKING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES STANDARD DETAILS. DO NOT COVER BELLS OR FLANGES WITH CONCRETE. THE CONTRACTOR SHALL REMOVE EXISTING THRUST BLOCKING OR RESTRAINTS WHERE NECESSARY TO ALLOW THE WORK TO PROCEED, AND SHALL REPLACE THE THRUST BLOCKS WHERE REQUIRED. THE COST TO REMOVE, REPLACE OR PROVIDE THRUST BLOCKING SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- TRACER WIRE SHALL BE PLACED ON PIPE PRIOR TO EMBEDMENT. WIRE SHALL BE #12 PLASTIC COATED COPPER WIRE, TIED TO ALL VALVES AND FIRE HYDRANTS, AND EXTENDING TO SIX (6) INCHES ABOVE FINISHED GRADE ALONG THE OUTSIDE OF ALL VALVE STACKS AND HYDRANTS.
- FINISH BACKFILL SHALL BE NATIVE SOIL, FREE OF ALL ROCKS AND CLODS GREATER THAN THREE INCHES IN DIAMETER, COMPACTED TO 95% STANDARD PROCTOR DENSITY, IN SIX (6) INCH MAXIMUM LOOSE LIFTS, WITH ZERO TO PLUS THREE, OPTIMUM MOISTURE.
- NO PERSON SHALL OPEN, TURN OFF, INTERFERE WITH, ATTACH ANY HOSE TO, OR TAP ANY WATER MAIN BELONGING TO THE TOWN OF ADDISON UNLESS DULY AUTHORIZED TO DO SO BY THE TOWN OF ADDISON PUBLIC WORKS DEPARTMENT (972-450-2871).
- THE CONTRACTOR WILL REMOVE EXISTING WATER METERS NOT USED FOR PROPOSED DEVELOPMENT. REMOVE METERS AND METER LIDS IN A WAY AS TO NOT DAMAGE THE METER OR LID AND DELIVER SALVAGED METERS TO THE TOWN OF ADDISON. CONTRACTOR SHALL KILL EXISTING DEADHEAD SERVICE FOR REMOVED METERS AT THE MAIN LINE.
- THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF EXISTING 8" WATER MAIN AFTER FINAL COMPLETION AND ACCEPTANCE OF NEW 12" WATER MAIN.
- THE CONTRACTOR SHALL REPLACE EXISTING SERVICE LINES DESIGNATED TO REMAIN, FROM EXISTING METERS TO NEW WATER MAIN WITH NEW COPPER (TYPE K ONLY) LINES. NEW SIZES TO BE THE SAME AS EXISTING, WITH A MINIMUM OF 3/4" DIAMETER.
- ALL WASTEWATER MAIN PIPING SHALL MEET THE EXTRA STRENGTH REQUIREMENTS OF ASTM SPECIFICATION D3034 (SDR-35) FOR INSTALLATIONS LESS THAN TEN FEET DEEP. FOR INSTALLATIONS GREATER THAN TEN FEET, SDR 26 PVC SHALL BE USED. PIPE SHALL HAVE THE BELL AND SPOGOT TYPE JOINTS, CONSISTING OF INTEGRAL WALL SECTION WITH FACTORY INSTALLED COMPRESSION RUBBER RING GASKET SECURELY LOCKED IN BELL GROOVE TO PROVIDE POSITIVE SEAL UNDER ALL INSTALLATION CONDITIONS. PIPE SHALL BE LAID WITH THE BELL END ON THE UPSTREAM SIDE.
- ALL SEWER MANHOLES WITH PRESSURE TYPE FRAME AND COVERS SHALL HAVE THE INTERIOR SURFACE COATED WITH AN EPOXY COATING (RAVEN 405 OR APPROVED EQUAL), MINIMUM 40 MILS THICKNESS, INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
- ALL EXISTING AND PROPOSED IMPROVEMENTS (VALVES, MANHOLES, FIRE HYDRANTS, WATER METERS, ETC) SHALL BE ADJUSTED TO FINAL FINISHED GRADE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL STAMP A 2-INCH "W" AND A 2-INCH "S" IN THE CURB AT THE LOCATION OF THE WATER AND SEWER SERVICE LINES, RESPECTIVELY. A 2-INCH "C" SHALL MARK CONDUITS CROSSING PAVEMENT, AND A 2-INCH "V" SHALL MARK WATER VALVES, WITH THE "POINT" OF THE "V" TOWARD THE VALVE.
- WATERLINES SHALL BE TESTED BOTH BACTERIOLOGICALLY AND HYDROSTATICALLY. WATER MAINS SHALL BE HYDROSTATICALLY TESTED AT 150 PSI FOR FOUR (4) HOURS. FIRE LINES SHALL BE HYDROSTATICALLY TESTED AT 200 PSI FOR (2) HOURS. ALL BLEEDER LINES SHALL BE REMOVED UPON COMPLETION OF TESTING BY REMOVING THE CORPORATION STOP AND INSTALLING A BRASS PLUG. HEAVILY CHLORINATED WATER (3.5 MGL OR GREATER FREE CHLORINE) RESULTING FROM WATER LINE STERILIZATION SHALL BE DIRECTED TO THE SANITARY SEWER AFTER THE MANDATORY CHLORINE RETENTION TIME (USUALLY 24 HOURS) UNLESS OTHERWISE NOTED.
- ALL WASTEWATER MAINS SHALL BE CAMERA INSPECTED BY THE CONTRACTOR AFTER THE INSTALLATION OF ALL UTILITIES AND PRIOR TO FINAL ACCEPTANCE OF NEW WASTEWATER FACILITIES.
- THE CONTRACTOR SHALL PROVIDE VERIFICATION OF COMPLETION AND COMPLIANCE OF ALL REQUIRED TESTS (PRESSURE, BACTERIOLOGICAL, BACKFLOW, VACUUM, MANDEREL, VHS VIDEO OF SANITARY SEWER, ETC.) TO THE TOWN OF ADDISON.
- THE CONTRACTOR SHALL CALL (972) 450-2847 TO REQUEST A FINAL WALK-THROUGH INSPECTION OF THE PUBLIC INFRASTRUCTURE WORK.
- ANY ADJACENT PROPERTIES AFFECTED BY THE CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.
- BLUE REFLECTORIZED BUTTONS ARE TO BE INSTALLED IN THE CENTER OF THE DRIVE LANE NEAREST THE OUTSIDE CURB OPPOSITE ALL FIRE HYDRANTS.



NO.	REVISION	BY	DATE

**TOWN OF ADDISON**  
DALLAS COUNTY, TEXAS

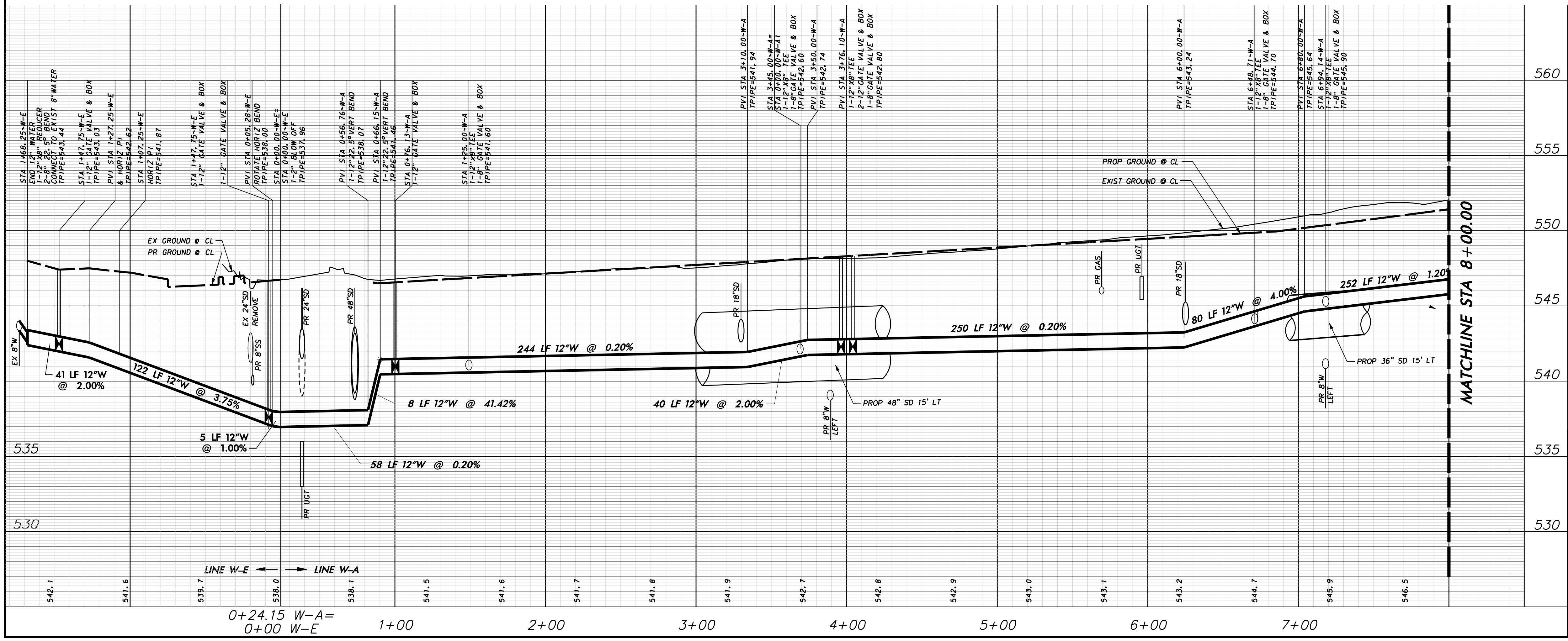
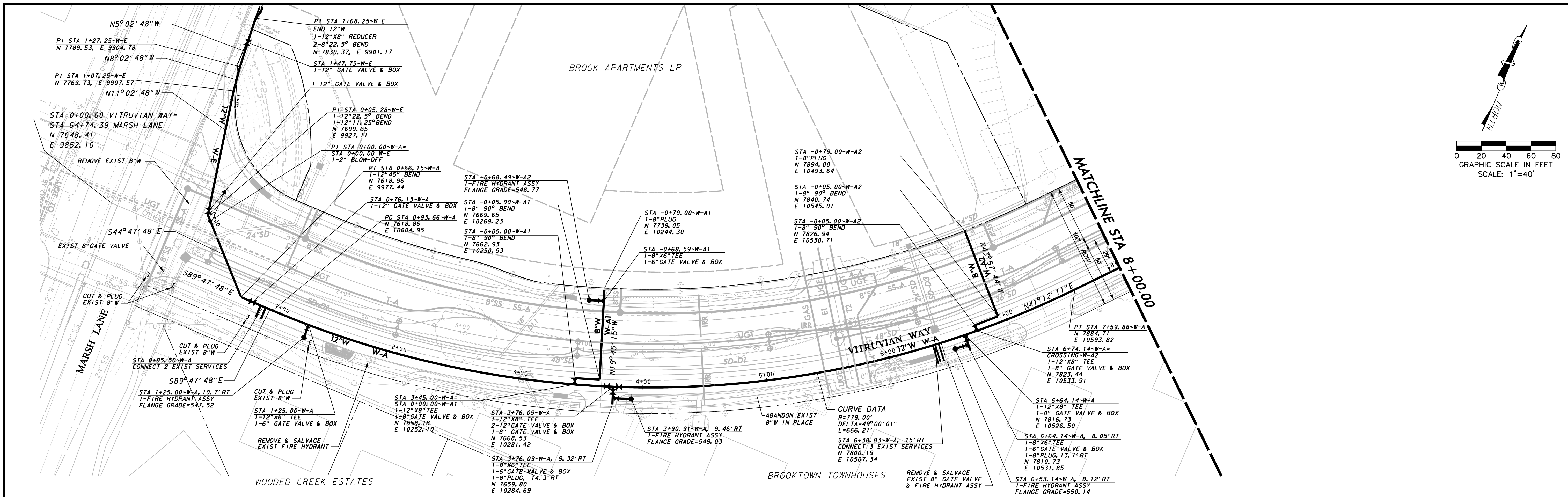
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY & PONTE AVENUE

**OVERALL WATER LAYOUT & NOTES**

<b>icon</b> Consulting Engineers, Inc. Civil Engineers - Designers - Planners	250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210				
PROJECT: 5029-01	DESIGN: ICE	DRAWN: ICE	DATE: MAY 7 2009	FILE: PW# 2009-01	SHEET: 54

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE





**WARNING**

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BM #1 REF. ELEVATION = 559.47  
SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.

PROFILE SCALE:

0 20 40 60 80  
SCALE: 1"=40' HORIZ

0 2 4 6 8  
SCALE: 1"=4' VERT



**ADDISON**

**TOWN OF ADDISON**  
DALLAS COUNTY, TEXAS

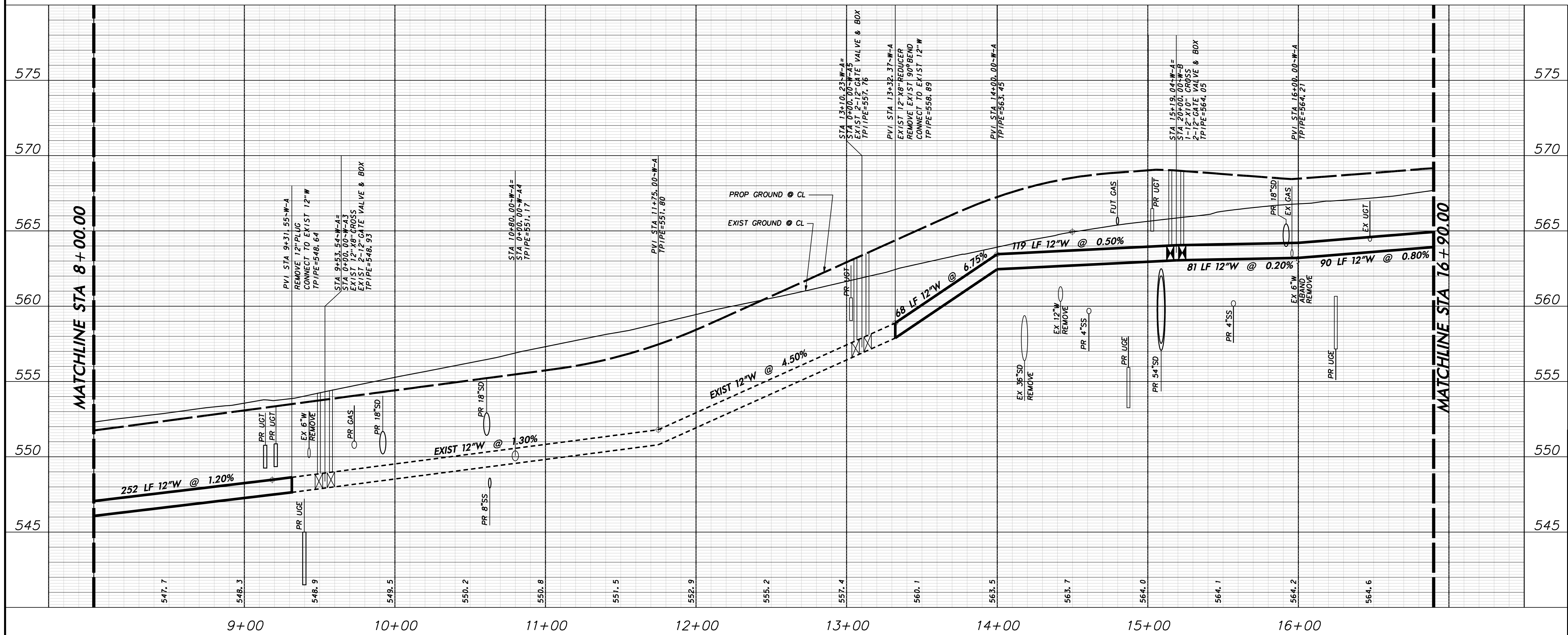
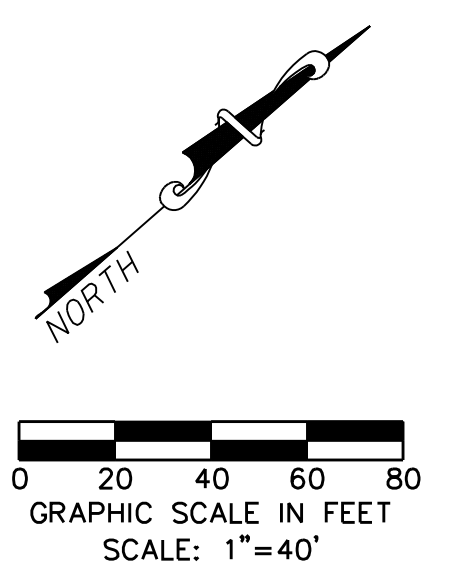
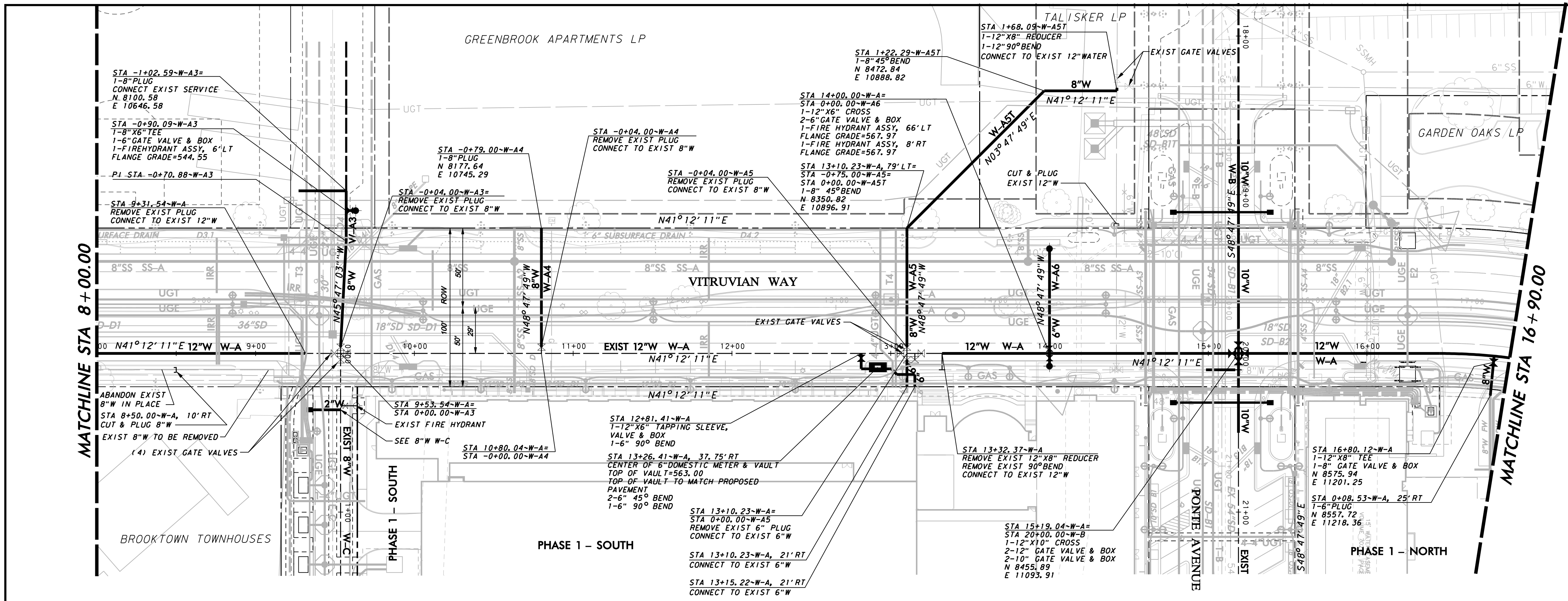
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY & PONTE AVENUE

**WATER LINE PLAN & PROFILE-VW**  
LINE A-STA. 0+00.00 TO 8+00.00 & LINE E

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	55

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

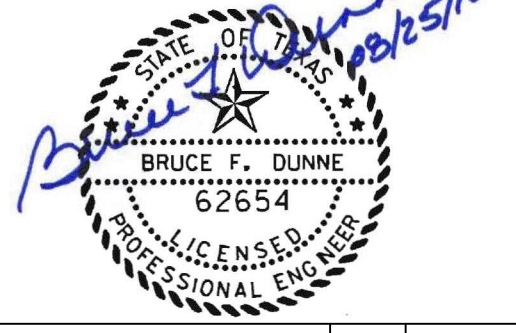
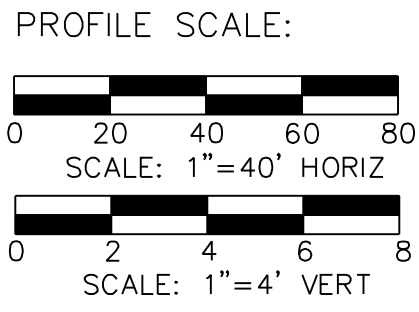


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**BM #2 REF. ELEVATION = 547.84**  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

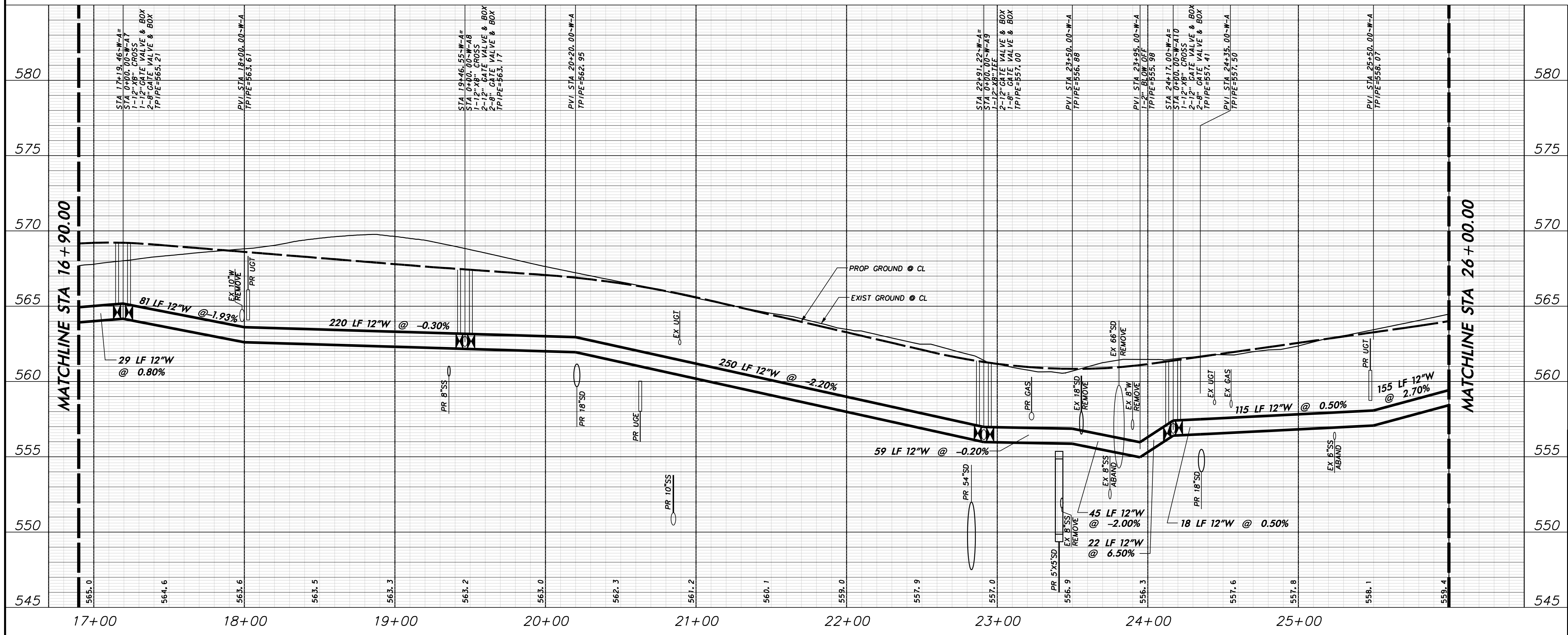
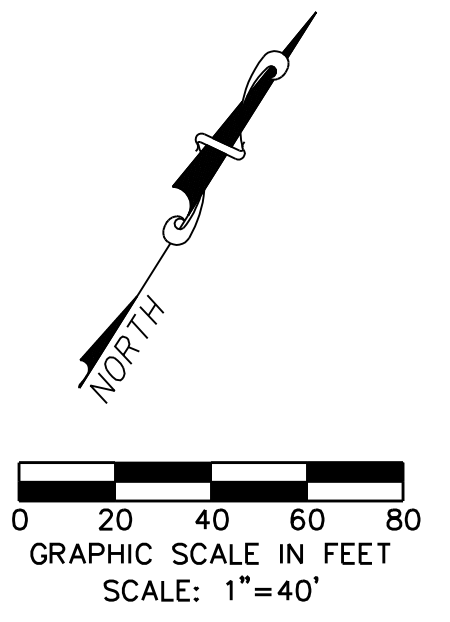
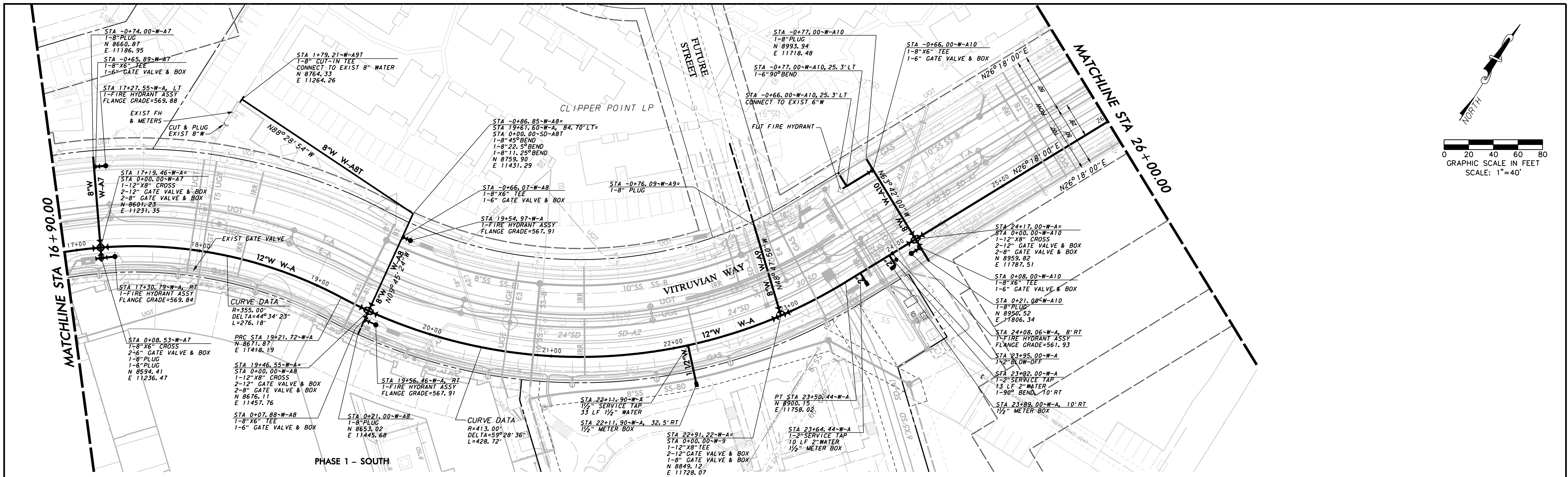
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 DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**WATER LINE PLAN & PROFILE-VW**  
 LINE A-STA. 8+00.00 TO 16+90.00

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Civil Engineers - Designers - Planners		Southlake, TX 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	56		

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

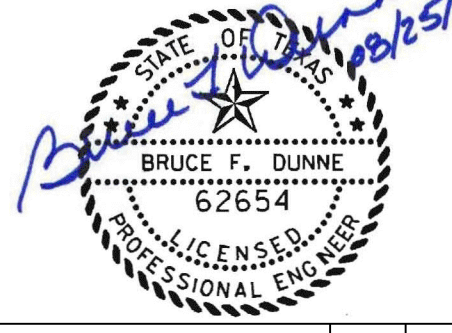
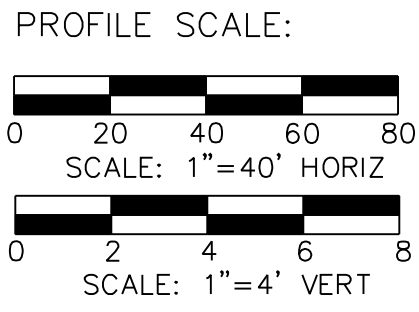


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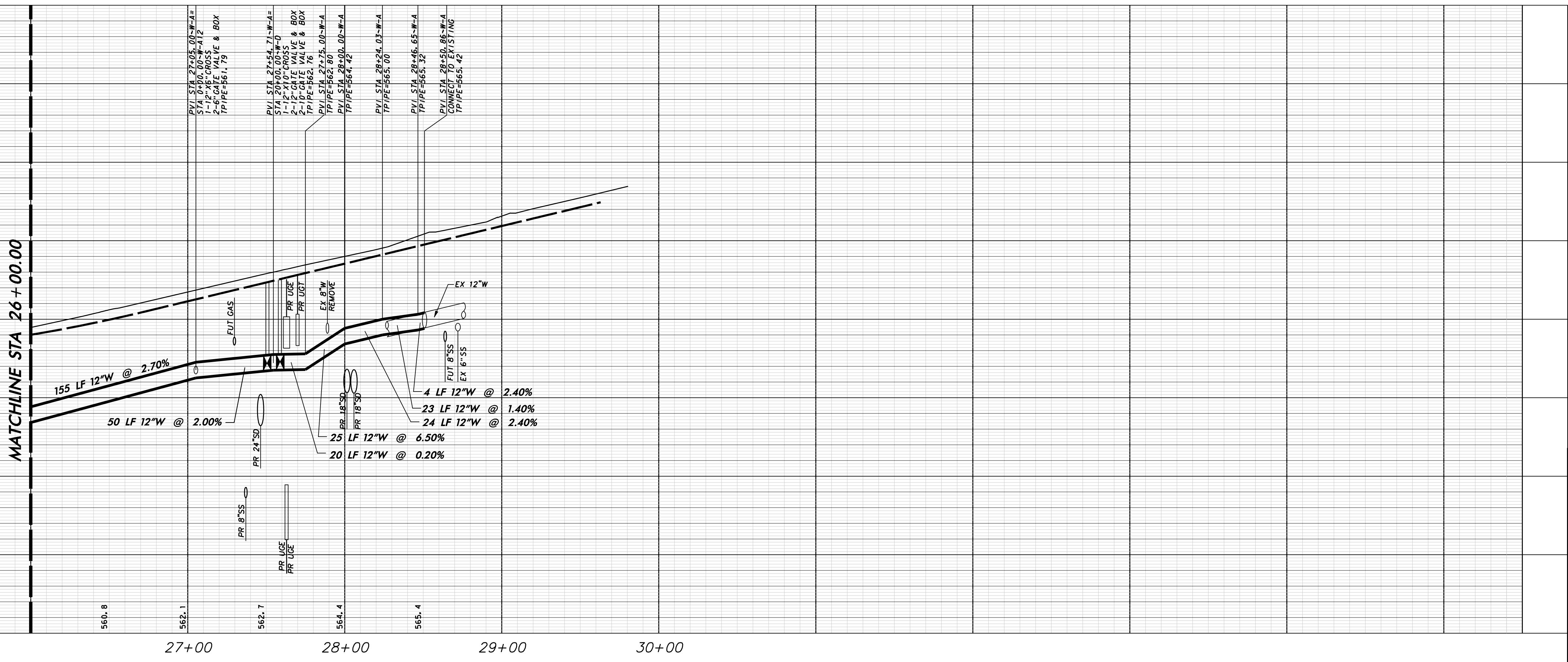
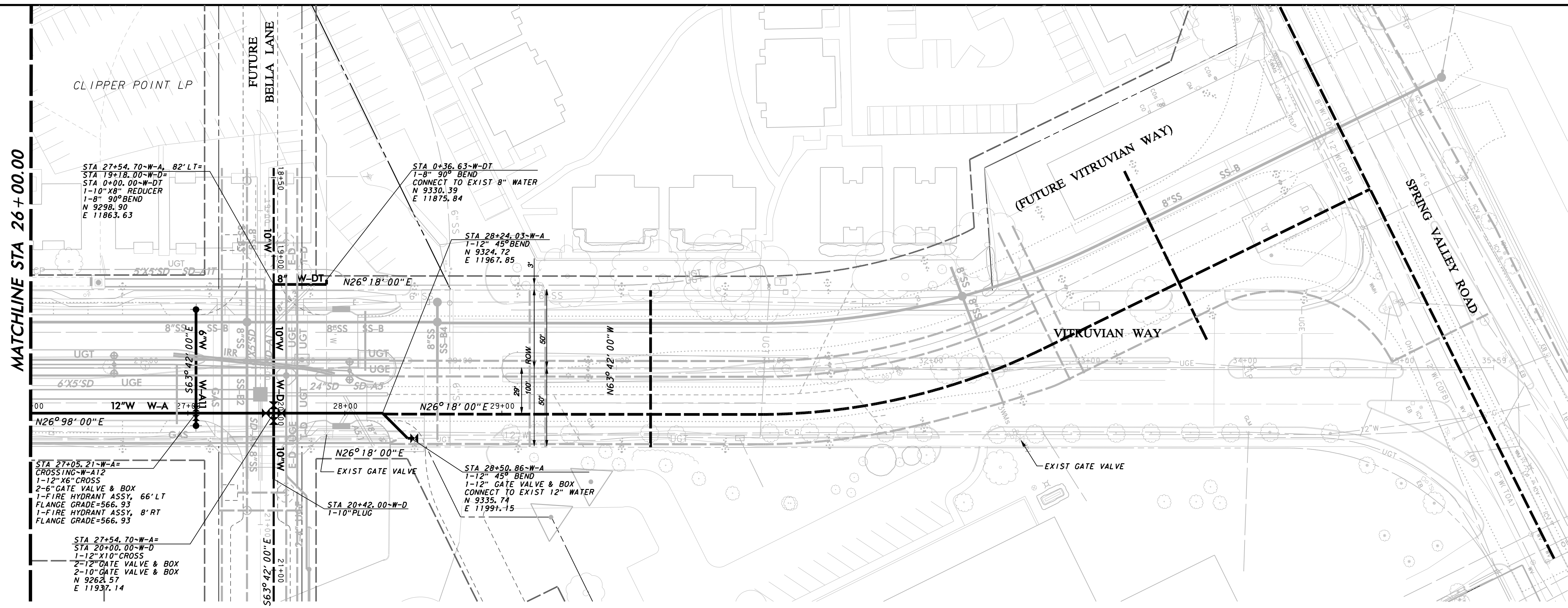
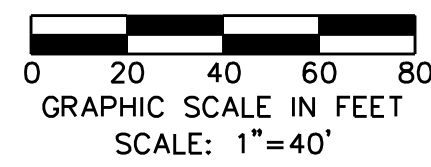
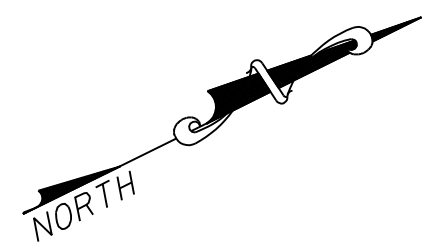
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 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



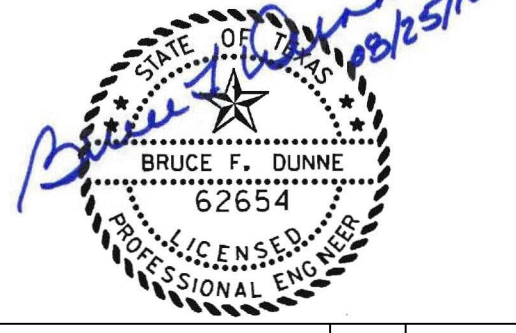
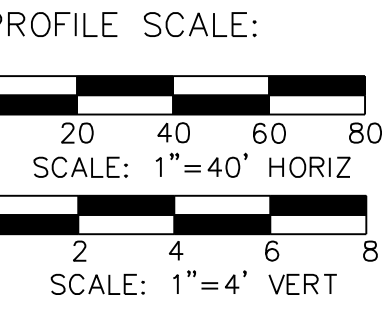
	<b>REVISION</b>		<b>BY</b>	<b>DATE</b>
NO.				
<b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS				
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY & PONTE AVENUE				
<b>WATER LINE PLAN &amp; PROFILE-VW</b> LINE A-STA. 16+90.00 TO 26+00.00				
<b>icon</b>		Consulting Engineers, Inc. Civil Engineers - Designers - Planners		250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210
PROJECT	DESIGN	DRAWN	DATE	FILE
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01
				SHEET
				57

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



**WARNING**  
 CONTRACTOR IS TO CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY LOCATING SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. ICON CONSULTING ENGINEERS, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOR FOR DEPICTING THE EXACT LOCATIONS OF UTILITIES ON THESE DRAWINGS.

BM #1 REF. ELEVATION = 559.47  
 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.  
 BM #2 REF. ELEVATION = 547.84  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

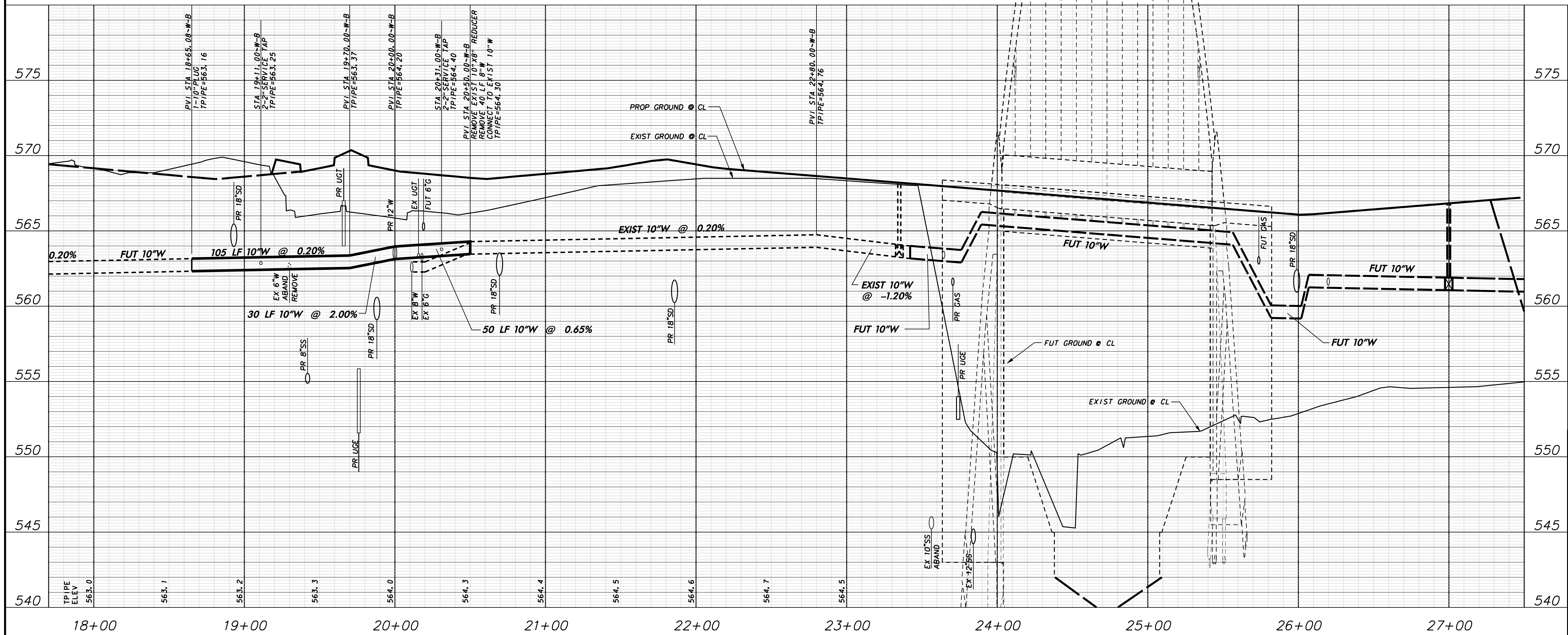
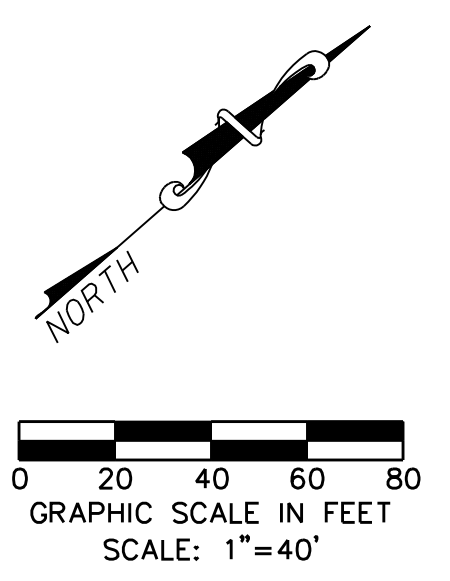
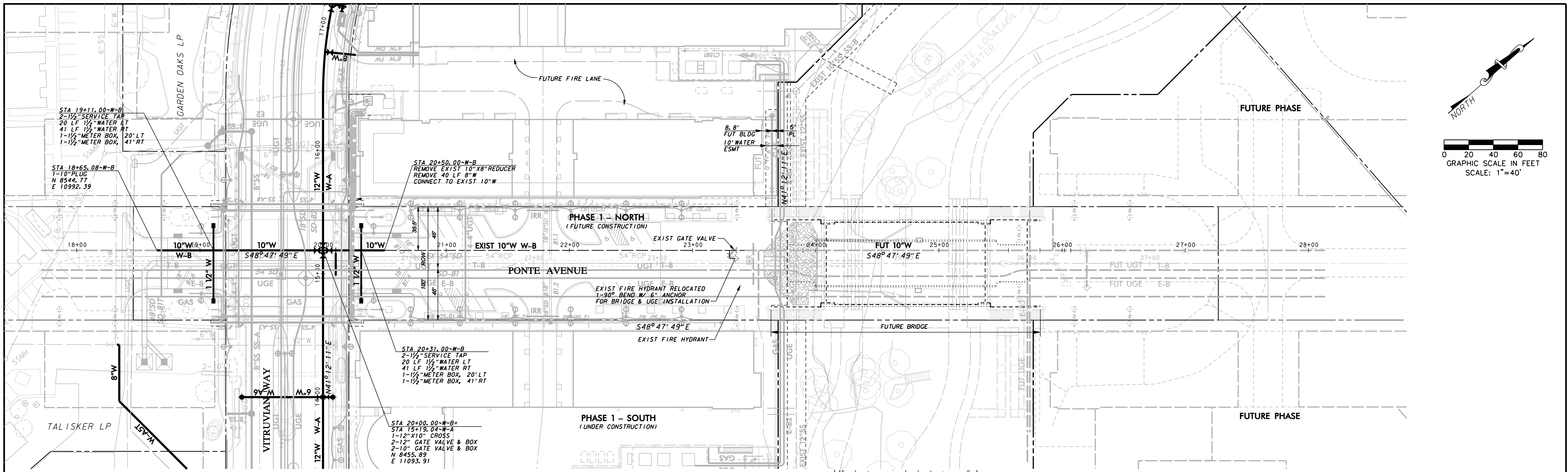
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

WATER LINE PLAN & PROFILE-VW  
 LINE A-STA. 26+00.00 TO 29+70.05

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	58

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

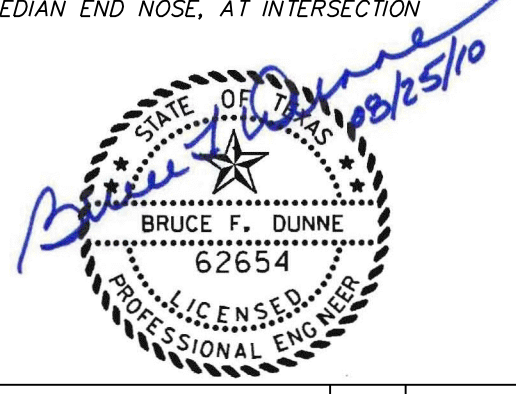
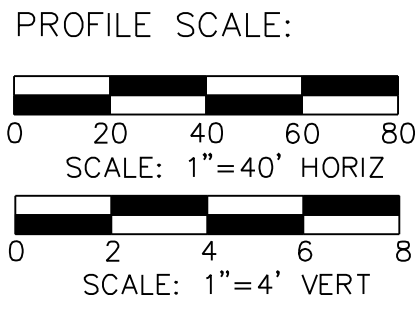


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NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

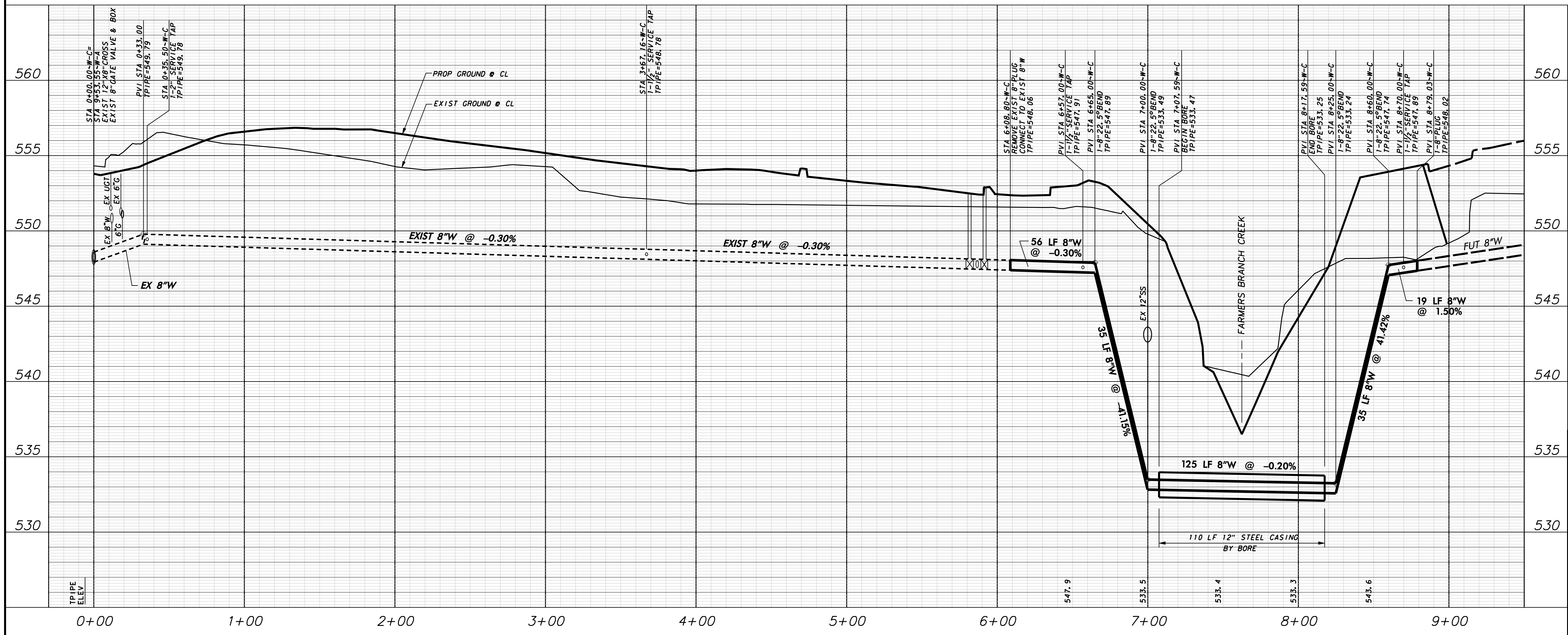
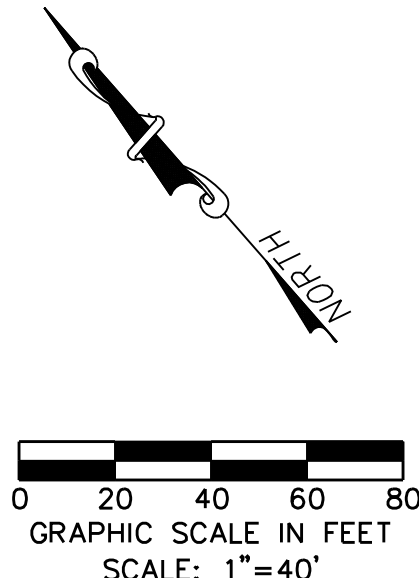
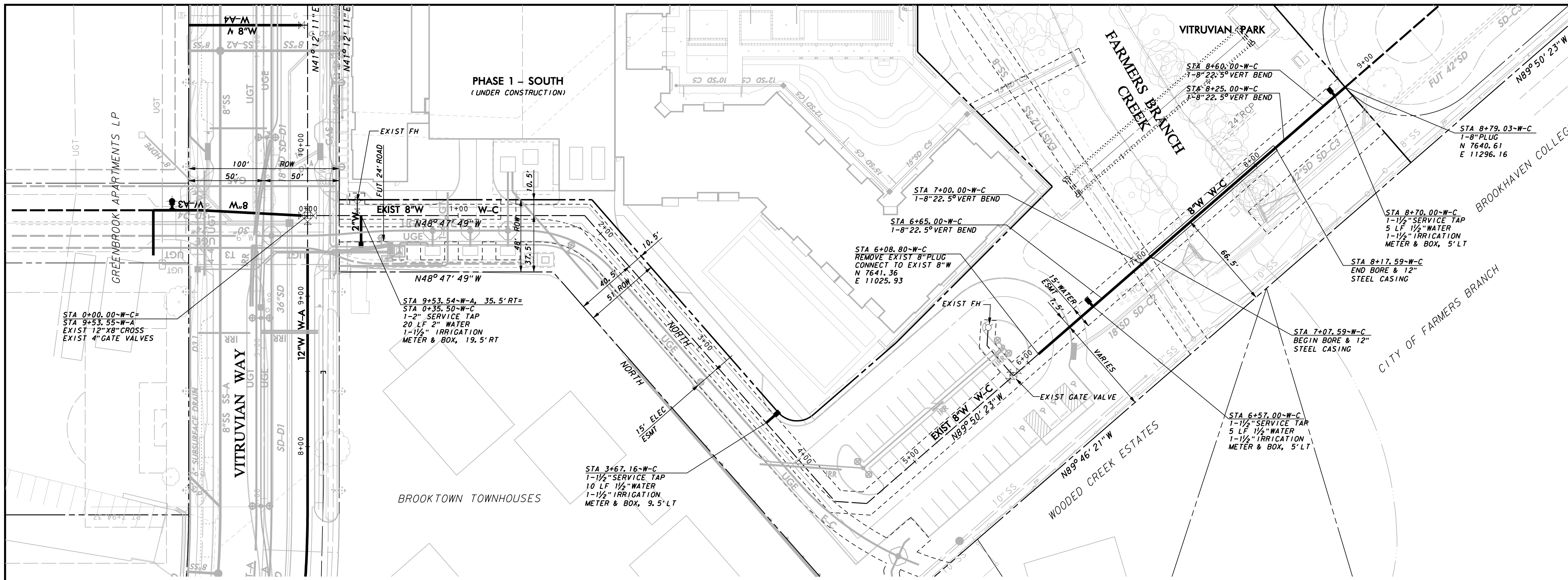
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE

**WATER LINE PLAN & PROFILE-PA**  
 LINE B-STA. 19+00.00 TO 27+26.80

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	59

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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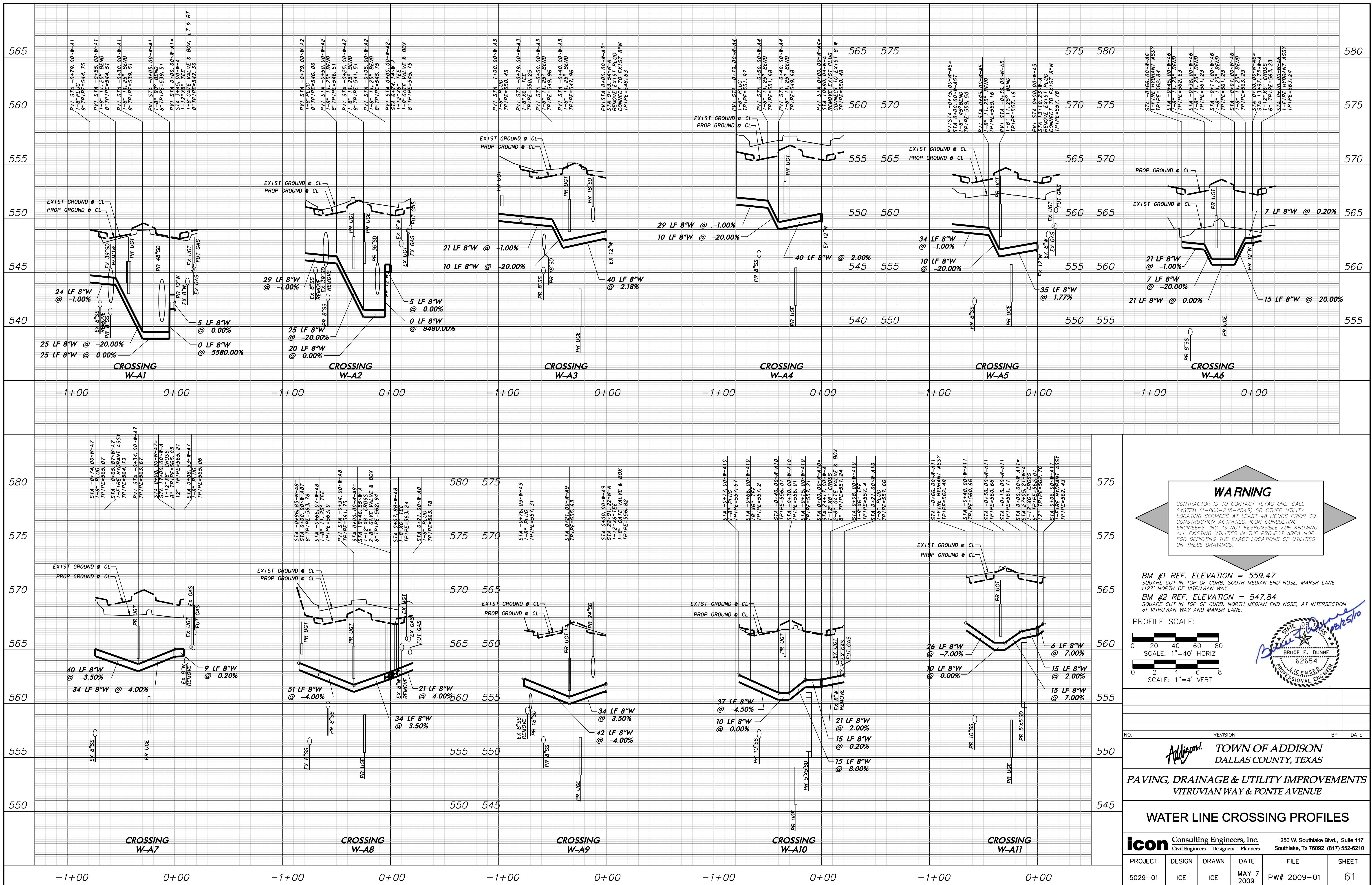
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SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.

**BRUCE F. DUNNE**  
62654  
LICENSED PROFESSIONAL ENGINEER

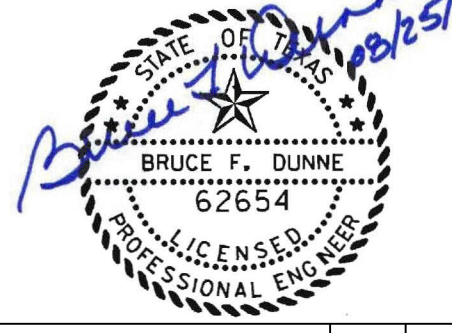
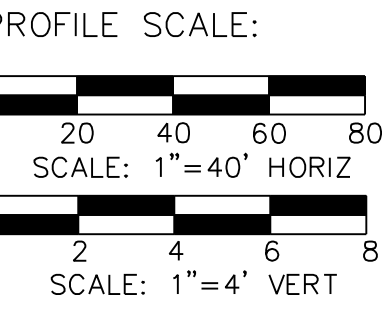
NO.	REVISION	BY	DATE
<b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS <b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY & PONTE AVENUE <b>WATER PLAN &amp; PROFILE-PARK RD</b> LINE C-STA. 6+08.80 TO 8+79.03			
<b>icon</b> Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210			
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	60		

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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NO. \_\_\_\_\_ REVISION \_\_\_\_\_ BY \_\_\_\_\_ DATE \_\_\_\_\_

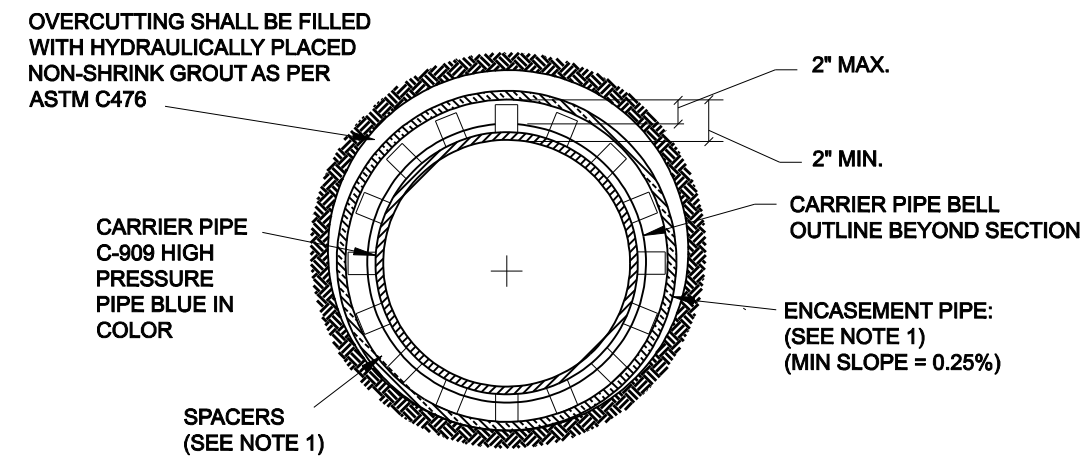
**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

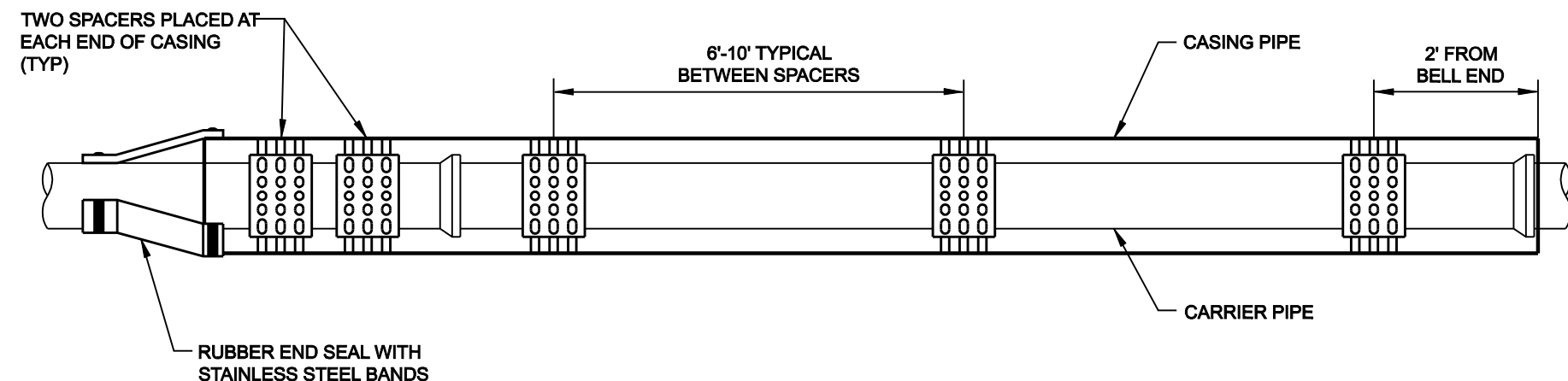
**WATER LINE CROSSING PROFILES**

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	61		

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

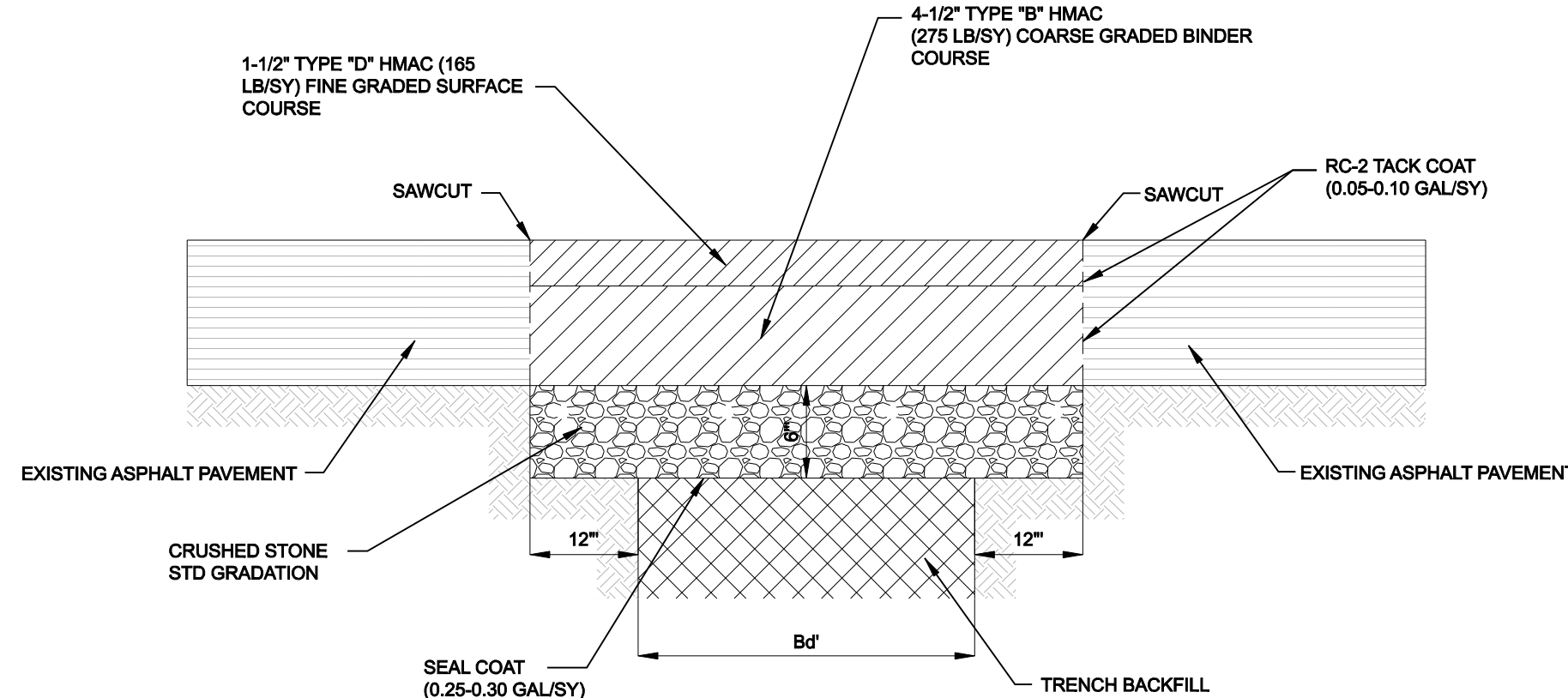


NOTES:  
 (1) HIGH DENSITY POLYETHYLENE SPACERS, RAGI OR EQUAL, SHALL BE USED. WHERE NO CASING PIPE IS REQUIRED OVERCUTTING AROUND UTILITY SHALL BE FILLED WITH HYDRAULICALLY PLACED NON-SHRINK GROUT AS PER ASTM C476.  
 (2) END GROUTING FOR ALL ENCASMENTS SHALL BE AS PER ASTM STANDARD C476 (1\"/>



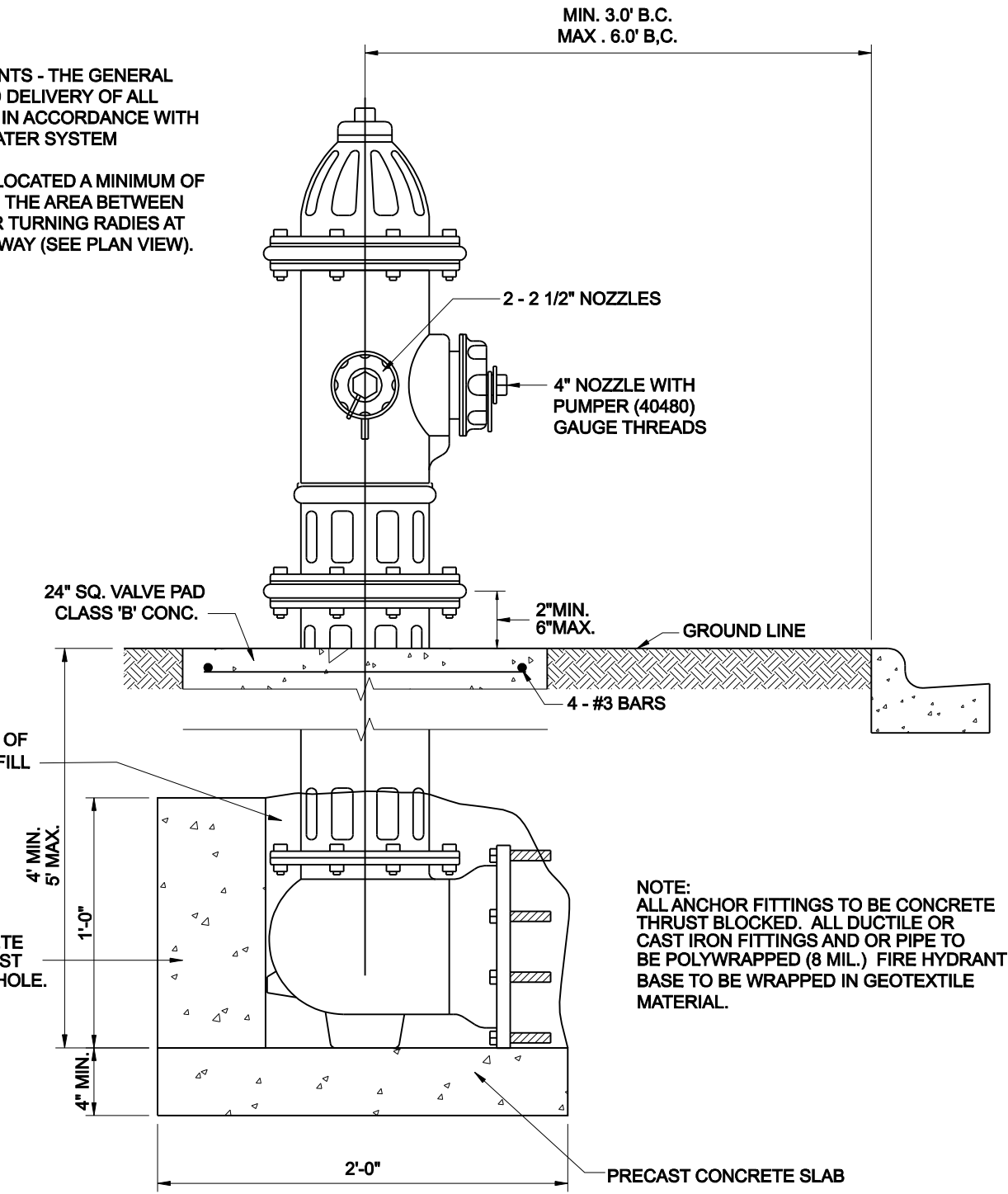
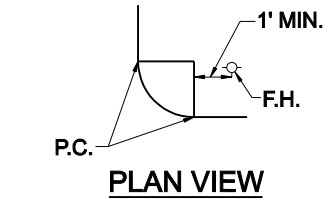
INSULATOR SPACING DETAIL

WATER MAIN ENCASMENT

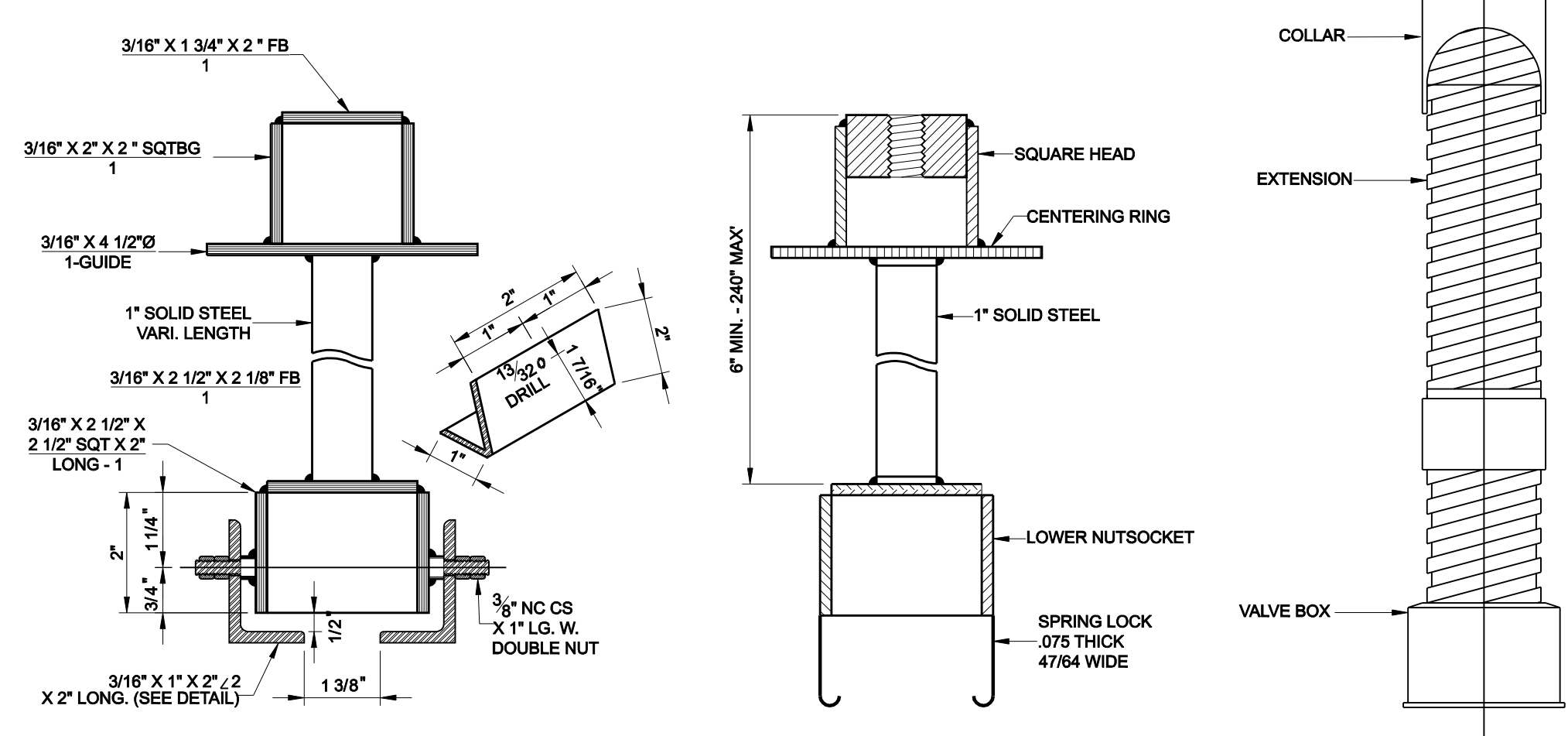


SHORT TERM ASPHALT PAVEMENT REPAIR FOR OPEN CUT TRENCHING

NOTE:  
 1. DESIGN, SITE REQUIREMENTS - THE GENERAL OPERATION, PAINTING AND DELIVERY OF ALL FIRE HYDRANTS SHALL BE IN ACCORDANCE WITH THE TOWN OF ADDISON WATER SYSTEM REQUIREMENTS.  
 2. FIRE HYDRANT SHALL BE LOCATED A MINIMUM OF ONE FOOT (1') OUTSIDE OF THE AREA BETWEEN THE P.C.'S OF THE CORNER TURNING RADIES AT INTERSECTION AND DRIVEWAY (SEE PLAN VIEW).



TYPICAL FIRE HYDRANT INSTALLATION



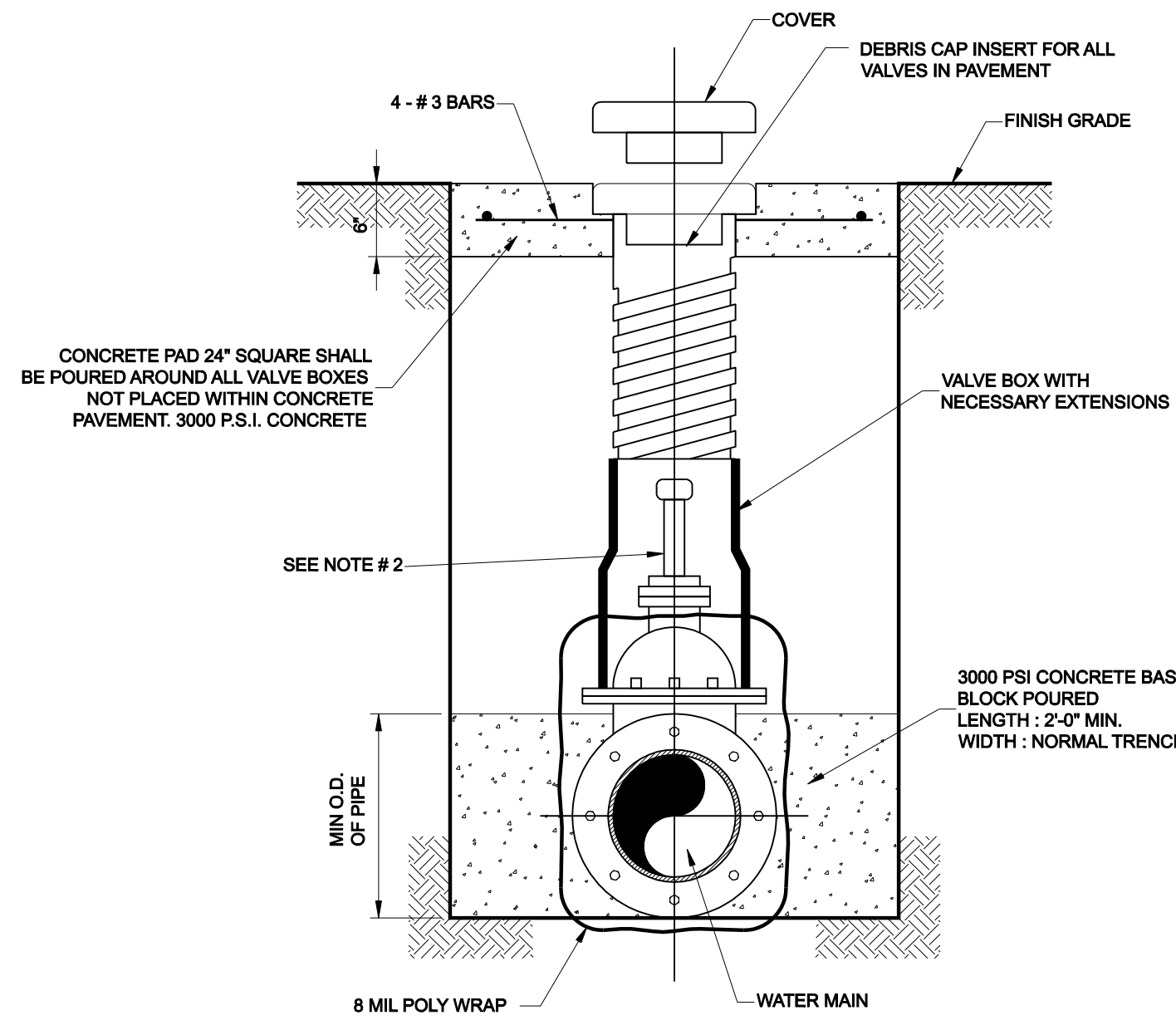
NOTE: TO BE USED ON ALL VALVES DEEPER THAN 5'-0\"/>

TYPE - B VALVE EXTENSION

SPRING LOCK VALVE EXTENSION

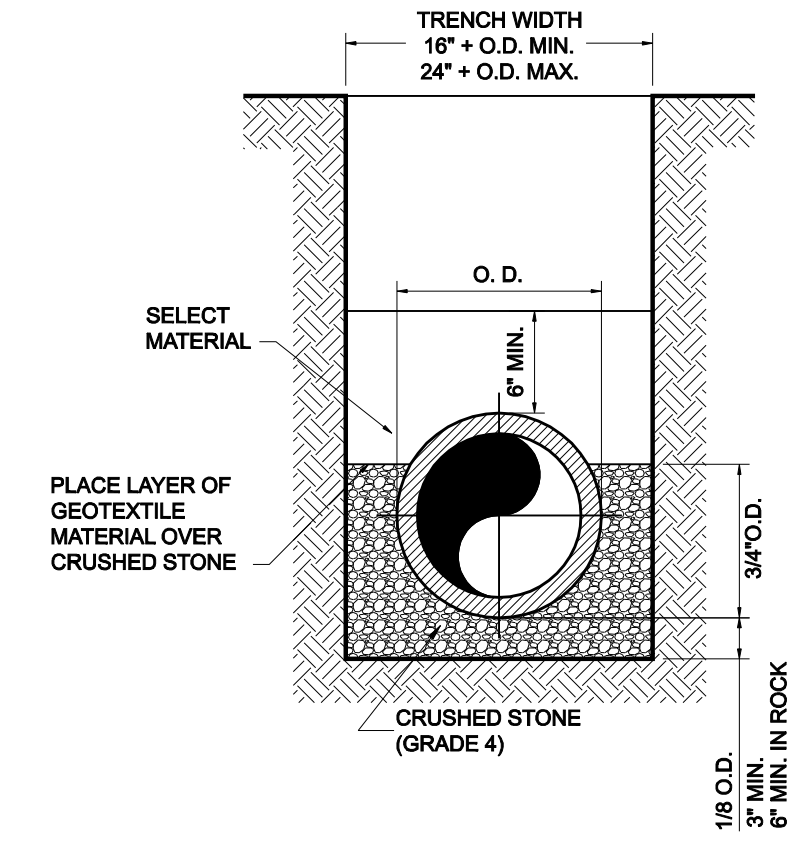
VALVE BOX WITH EXTENSION

ALL CAST IRON FITTINGS SHALL BE DOMESTIC.

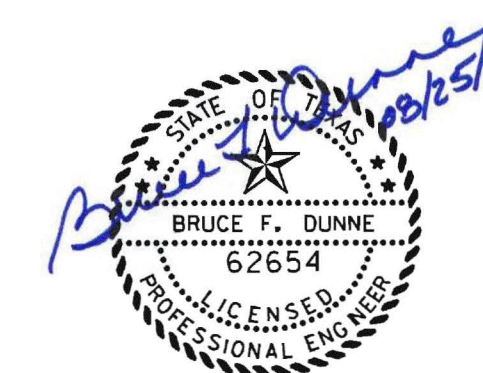


TYPICAL VALVE SETTING & BOX

NOTE:  
 1. 4\"/>



CLASS "B+" EMBEDMENT  
 TYPICAL BACKFILL WATER MAIN P.V.C. WATER PIPE

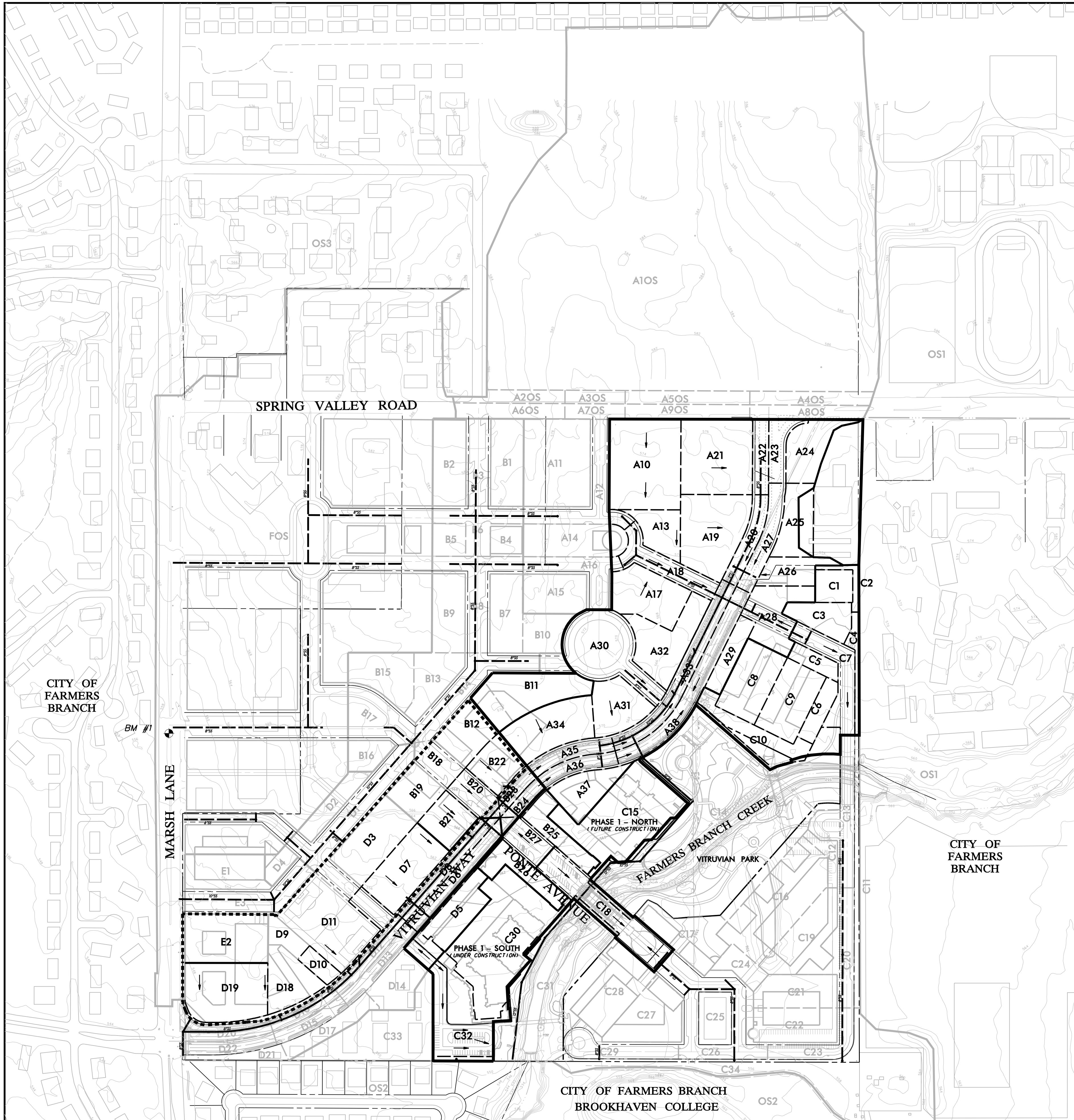


NO.		REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS <b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY & PONTE AVENUE <b>WATER DETAILS</b>				
<b>icon</b> Consulting Engineers, Inc. Civil Engineers - Designers - Planners 250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210				
PROJECT	DESIGN	DRAWN	DATE	FILE SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01 62

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE









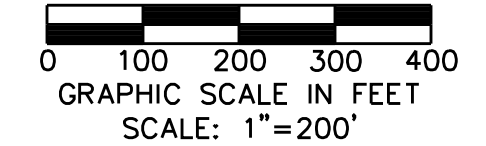
**LINE A - SANITARY SEWER DRAINAGE AREA CALCULATIONS**

Drainage Area	Area (Acres)	Residential Units	Design Flow (Gal/Day)	Infiltration (Gal/Day)	Total Q (Gal/Day)	Acum Q (MGD)	Notes
B-12	1.00	60	27,000	650	27,650	0.0277	to 8" SS Line "A"
B-22	0.60	36	16,200	390	16,590	0.0442	to 8" SS Line "A"
B-18	0.40	24	10,800	260	11,060	0.0111	to 8" SS Line "A"
B-20	0.50	30	13,500	325	13,825	0.0891	to 8" SS Line "A"
B-19	0.60	36	16,200	390	16,590	0.0166	to 8" SS Line "A"
B-21	0.60	36	16,200	390	16,590	0.1023	to 8" SS Line "A"
D-3	1.10	66	29,700	715	30,415	0.0304	to 8" SS Line "A"
D-7	1.10	66	29,700	715	30,415	0.1631	to 8" SS Line "A"
D-11	1.80	96	43,200	1,040	44,240	0.2074	to 8" SS Line "A"
D-9	0.30	18	8,100	195	8,295	0.0083	to 8" SS Line "A"
D-10	0.20	12	5,400	130	5,530	0.2212	to 8" SS Line "A"
D-18	0.80	48	21,600	520	22,120	0.2433	to 8" SS Line "A"
E-2	1.20	72	32,400	780	33,180	0.0332	to 8" SS Line "A"
D-19	1.40	84	37,800	910	38,710	0.3152	to 8" SS Line "A"
Total	11.40	684	307,800	7,410	315,210	0.3152	to Existing 10" SS Line

**LINE B - SANITARY SEWER DRAINAGE AREA CALCULATIONS**

Drainage Area	Area (Acres)	Residential Units	Design Flow (Gal/Day)	Infiltration (Gal/Day)	Total Q (Gal/Day)	Acum Q (MGD)	Notes
A-19	1.50	90	40,500	975	41,475	0.0415	to Future 8" SS Line "B"
A-20	0.50	30	13,500	325	13,825	0.0553	to Future 8" SS Line "B"
A-21	1.60	96	43,200	1,040	44,240	0.0995	to Future 8" SS Line "B"
A-22	0.40	24	10,800	260	11,060	0.1106	to Future 8" SS Line "B"
A-23	0.40	24	10,800	260	11,060	0.1217	to Future 8" SS Line "B"
A-24	0.80	48	21,600	520	22,120	0.1438	to Future 8" SS Line "B"
A-25	0.70	42	18,900	455	19,355	0.1531	to Future 8" SS Line "B"
A-26	0.50	30	13,500	325	13,825	0.1770	to Future 8" SS Line "B"
A-27	0.60	36	16,200	390	16,590	0.1936	to Future 8" SS Line "B"
A-10	2.00	120	54,000	1,300	55,300	0.0553	to Future 8" SS Line "B-3"
A-13	0.60	36	16,200	390	16,590	0.0719	to Future 8" SS Line "B-3"
A-17	1.00	60	27,000	650	27,650	0.0995	to Future 8" SS Line "B-3"
A-18	0.70	42	18,900	455	19,355	0.1189	to Future 8" SS Line "B-3"
A-28	0.90	54	24,300	585	24,885	0.0249	to Future 8" SS Line "B-2"
A-29	0.40	24	10,800	260	11,060	0.0359	to Future 8" SS Line "B-2"
C-1	0.40	24	10,800	260	11,060	0.0470	to Future 8" SS Line "B-2"
C-2	0.10	6	2,700	65	2,765	0.0498	to Future 8" SS Line "B-2"
C-3	0.60	36	16,200	390	16,590	0.0664	to Future 8" SS Line "B-2"
C-4	0.30	18	8,100	195	8,295	0.0747	to Future 8" SS Line "B-2"
C-5	0.30	18	8,100	195	8,295	0.0830	to Future 8" SS Line "B-2"
C-6	0.30	18	8,100	195	8,295	0.0912	to Future 8" SS Line "B-2"
C-7	0.80	48	21,600	520	22,120	0.1134	to Future 8" SS Line "B-2"
C-8	1.00	60	27,000	650	27,650	0.1410	to Future 8" SS Line "B-2"
C-9	1.00	60	27,000	650	27,650	0.1687	to Future 8" SS Line "B-2"
C-10	0.80	48	21,600	520	22,120	0.1908	to Future 8" SS Line "B-2"
A-32	1.10	66	29,700	715	30,415	0.5336	to 8" SS Line "B"
A-33	1.00	60	27,000	650	27,650	0.5613	to 8" SS Line "B"
A-30	1.80	108	48,600	1,170	49,770	0.0498	to 8" SS Line "B"
A-31	0.80	48	21,600	520	22,120	0.0719	to 8" SS Line "B"
A-38	1.10	66	29,700	715	30,415	0.6636	to 8" SS Line "B"
B-11	1.00	60	27,000	650	27,650	0.0277	to 8" SS Line "B"
A-34	1.20	72	32,400	780	33,180	0.0608	to 8" SS Line "B"
A-35	0.40	24	10,800	260	11,060	0.0719	to 8" SS Line "B"
A-36	0.40	24	10,800	260	11,060	0.0830	to 8" SS Line "B"
A-37	0.70	42	18,900	455	19,355	0.1023	to 8" SS Line "B"
C-15	2.20	132	59,400	1,430	60,830	0.8267	to 12" SS Line "B"
B-25	0.60	36	16,200	390	16,590	0.9433	to 12" SS Line "B"
B-26	0.60	36	16,200	390	16,590	0.8599	to 12" SS Line "B"
B-27	0.50	30	13,500	325	13,825	0.8737	to 12" SS Line "B"
C-18	1.20	72	32,400	780	33,180	0.9069	to 12" SS Line "B"
C-30	2.60	156	70,200	1,690	71,890	0.9788	to 12" SS Line "B"
C-32	1.40	84	37,800	910	38,710	1.0175	to 12" SS Line "B"
Total	36.80	2208	993,600	23,920	1,017,520	1.0175	to Existing 10" SS Line

 LINE A - SANITARY SEWER DRAINAGE AREA  
 LINE B - SANITARY SEWER DRAINAGE AREA




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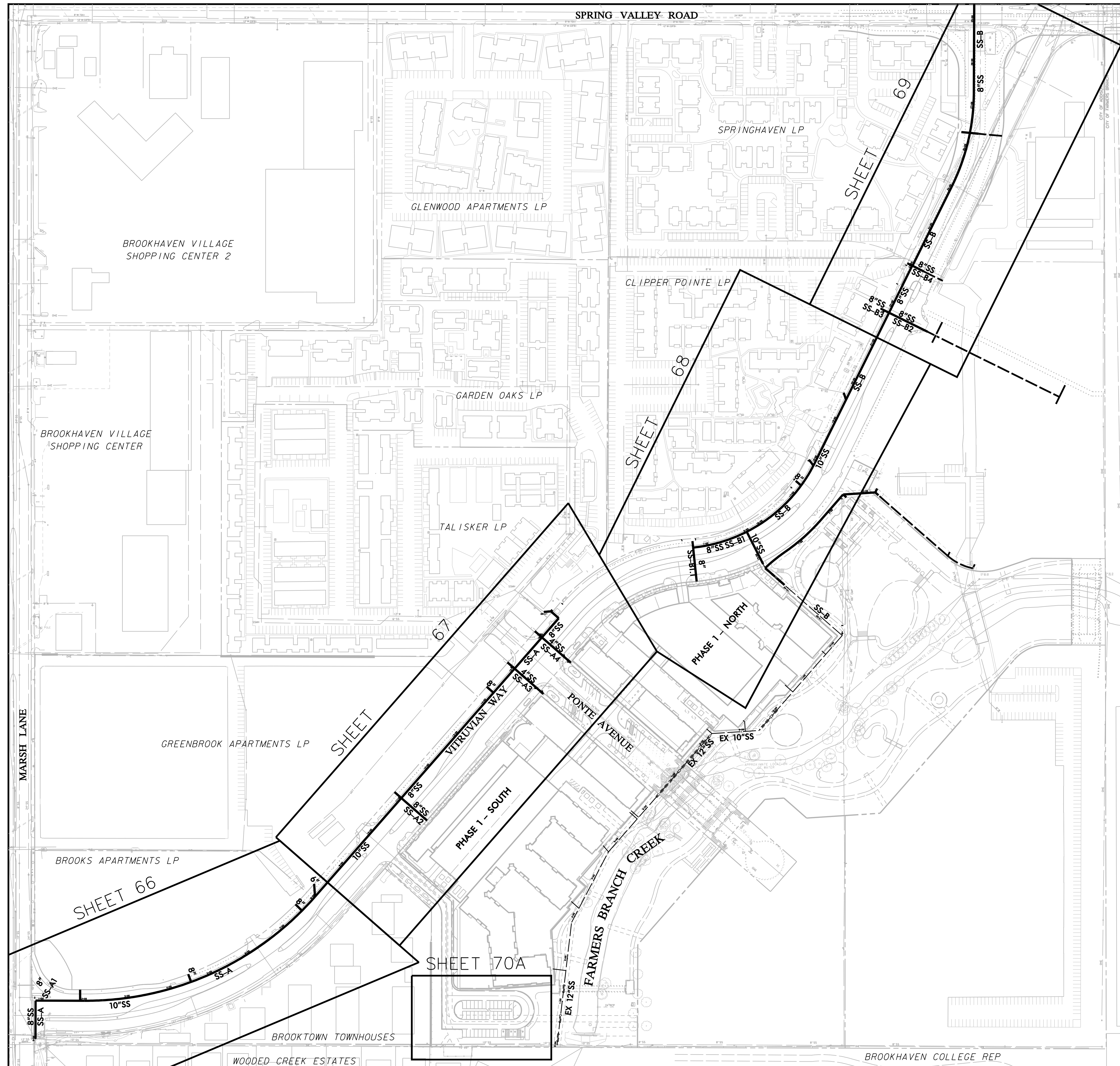
BM #1 REF. ELEVATION = 559.47  
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NO.	REVISION	BY	DATE

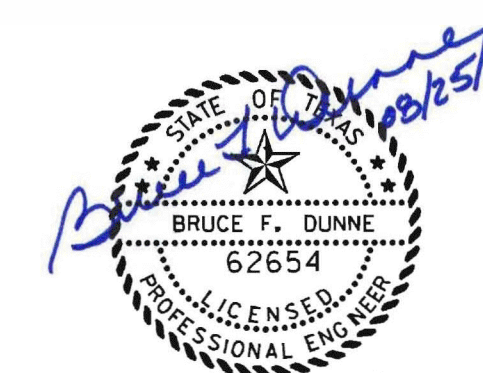
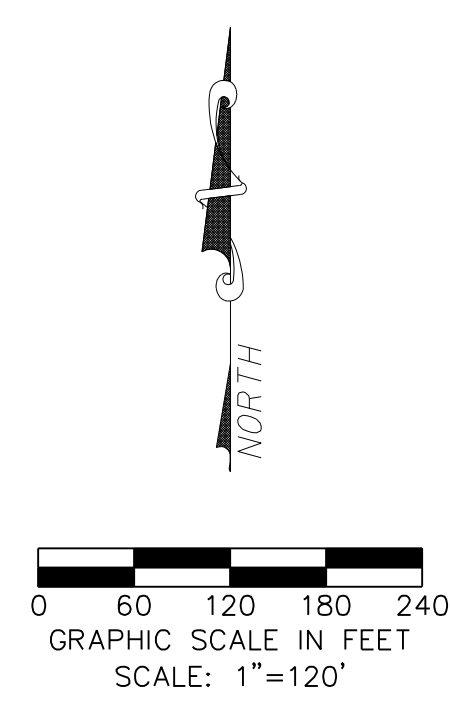
 **TOWN OF ADDISON**  
 DALLAS COUNTY, TEXAS  
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE  
**SANITARY SEWER DRAINAGE AREA MAP**  
**icon** Consulting Engineers, Inc.  
 Civil Engineers - Designers - Planners 250 W. Southlake Blvd., Suite 117  
 Southlake, Tx 76092 (817) 552-6210  
 PROJECT: 5029-01    DESIGN: ICE    DRAWN: ICE    DATE: MAY 7 2009    FILE: PW# 2009-01    SHEET: 64

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



**GENERAL WATER & SEWER NOTES:**

1. REFER TO SHEET 4 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THIS PROJECT.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION AS PUBLISHED BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, AND ANY AND ALL AMENDMENTS BY THE TOWN OF ADDISON, AS WELL AS STANDARD CONSTRUCTION DETAILS OF THE TOWN OF ADDISON.
3. PRIOR TO COMMENCING CONSTRUCTION, THE TOWN OF ADDISON, THE CONSULTING ENGINEERS, THE SUCCESSFUL CONTRACTOR, UTILITY COMPANIES, AND ANY OTHER AFFECTED PARTIES, SHALL CONVENE FOR A PRE-CONSTRUCTION CONFERENCE AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
4. THE CONTRACTOR SHALL OBTAIN A RIGHT-OF-WAY PERMIT FROM THE TOWN OF ADDISON PRIOR TO WORKING WITH THE PUBLIC RIGHT-OF-WAY.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ANY PUBLIC UTILITY COMPANIES FOR LOCATION OF EXISTING FACILITIES IN OR NEAR THE WORK AREAS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
  - TOWN OF ADDISON (WATER, SEWER, SIGNALS) ATMOS ENERGY (GAS)
  - ONCOR ELECTRIC DELIVERY VERIZON (MC)
  - AT&T (SOUTHWESTERN BELL) TIME-WARNER CABLE
6. THE CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER (SIX SETS EACH), FOR APPROVAL OF ALL MATERIALS TO BE ADDED TO THE PUBLIC INFRASTRUCTURE, PRIOR TO INCORPORATING MATERIALS INTO THE JOB.
7. THE CONTRACTOR SHALL PROVIDE AND SUBMIT TO THE TOWN OF ADDISON (SIX SETS EACH), AN APPROVED TRENCH SAFETY PLAN, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS, FOR THE INSTALLATION OF UTILITIES GREATER THAN FIVE (5) FEET IN DEPTH.
8. THE CONTRACTOR SHALL PROVIDE A MAINTENANCE BOND FOR PUBLIC INFRASTRUCTURE WORK IN THE FOLLOWING AMOUNTS:
  - 10% FOR VALUATIONS LESS THAN OR EQUAL TO \$5,000.
  - \$5,000 FOR VALUATION GREATER THAN \$5,000 AND LESS THAN \$50,000.
  - 10% FOR VALUATIONS GREATER THAN \$50,000.
 BONDS SHALL BE FOR A PERIOD OF TWO YEARS BEGINNING WITH THE DATE OF FINAL ACCEPTANCE BY THE TOWN.
9. THE CONTRACTOR SHALL FULLY COMPLY WITH AND SUPPLEMENT AS NECESSARY THE CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT.
10. THE TOWN OF ADDISON PUBLIC WORKS DEPARTMENT WILL APPROVE AND/OR DETERMINE THE TRAFFIC CONTROL PLAN AND WORKING HOURS. CONTACT THE ASSISTANT CITY ENGINEER OR THE PUBLIC WORKS INSPECTOR AT (972) 450-2871.
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, AND SUPPLEMENT AS NECESSARY, THE TRAFFIC CONTROL MEASURES ON THIS PROJECT INCLUDING PROVIDING ADEQUATE FLAGMEN, SIGNAGE, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION IN ACCORDANCE WITH THE TEXAS MANUAL OF UNIFORM CONTROL DEVICES. THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE.
12. TEMPORARY OR PERMANENT BARRICADES SHALL REMAIN AT ALL POINTS OF INGRESS OR EGRESS TO PREVENT PUBLIC USE UNTIL THE WORK RECEIVES FINAL ACCEPTANCE.
13. THE CONTRACTOR SHALL COVER ALL OPEN EXCAVATIONS WITH ANCHORED STEEL PLATING, DURING NON-WORKING HOURS, ALONG EXISTING ROADWAYS AND TRAFFIC AREAS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE AT ALL TIMES DURING CONSTRUCTION INCLUDING PROVIDING ALL TEMPORARY STRUCTURES OR IMPROVEMENTS AS NECESSARY FOR THE SAFETY OF THE PUBLIC.
15. THE TOWN OF ADDISON WILL PROVIDE A GEOTECHNICAL LABORATORY TO PERFORM APPROPRIATE TESTING DURING CONSTRUCTION ACTIVITIES. ANY TEST THAT FAILS TO MEET CITY REQUIREMENTS SHALL BE RETESTED AT THE CONTRACTOR'S EXPENSE.
16. ROUGH GRADING SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF WATER AND SANITARY SEWER FACILITIES.
17. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, FENCES, TREES, SHRUBS, GAS MAINS, TELEPHONE CABLES, ELECTRIC CABLES, DRAINAGE PIPES, UTILITY SERVICES, AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW THE GROUND, THE COST OF WHICH SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
18. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ASSURE PROPER DEPTHS ARE ACHIEVED. IN THE EVENT OF A CONFLICT BETWEEN WATER LINES AND STORM DRAIN OR SANITARY SEWER PIPING, THE CONTRACTOR SHALL ADJUST THE WATER LINE DOWNWARDS IN SUCH A MANNER SO THAT THE PIPE MANUFACTURER'S RECOMMENDATIONS ON THE PIPE DEFLECTION AND JOINT STRESS ARE NOT EXCEEDED.
19. THE CONTRACTOR SHALL VERIFY THE SIZE, TYPE, ELEVATION, CONFIGURATION, AND ANGLE OF EXISTING WATER, SANITARY SEWER AND UTILITY LINES PRIOR TO CONSTRUCTION OF TIE-IN MATERIALS. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR REPAIRS TO EXISTING FACILITIES DAMAGED BY HIS ACTIVITIES.
20. ALL WATER MAIN MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF ADDISON'S WATER SYSTEM REQUIREMENTS.
21. ALL WATER MAINS TWELVE-INCH (12") DIAMETER AND SMALLER SHALL BE ANSII/AWWA C-900-98 MOLECULARLY ORIENTED PVC PRESSURE PIPE WITH CAST IRON O.D. OR WHEN PIPE PENETRATES WATER VAULT WALLS IT SHALL BE DUCTILE IRON. PIPE JOINTS SHALL BE RUBBER RING AND INTEGRAL THICKENED BELL ASSEMBLED WITH A FACTORY SUPPLIED LUBRICANT. WATER MAINS SHALL HAVE A MINIMUM CLASS RATING OF 150-PSI FOR DOMESTIC USE AND A MINIMUM CLASS RATING OF 200-PSI FOR FIRE LINE APPLICATIONS. JOINT MATERIAL FOR PVC SHALL CONFORM TO ASTM F471.
22. EMBEDMENT FOR WATER AND SEWER MAINS SHALL COMPLY WITH NCTCOG CLASS "B" EMBEDMENT OF CRUSHED STONE TO THE SPRING LINE OF THE PIPE, WITH SAND (12" MIN) OVER THE PIPE. A LAYER OF GEO-TEXTILE FABRIC SHALL BE PLACED ON TOP OF THE STONE PRIOR TO THE PLACEMENT OF THE SAND.
23. THE MINIMUM COVER TO THE TOP OF THE PIPE MUST VARY WITH THE VALVE STEM. IN GENERAL, THE MINIMUM COVER BELOW THE TOP OF CURB AT STREET TO TOP OF THE PIPE SHOULD BE AS FOLLOWS:
  - A. LINES LARGER THAN SIXTEEN-INCH (16") SHALL HAVE A MINIMUM COVER OF SIX FEET (6') OF COVER WHICH IS SUFFICIENT TO ALLOW WATER AND SEWER AND OTHER UTILITIES TO GO OVER THE LARGE MAIN.
  - B. SIXTEEN-INCH (16") MAINS SHALL HAVE A MINIMUM COVER OF FIVE FEET (5').
  - C. TWELVE-INCH (12") AND SMALLER MAINS SHALL HAVE A MINIMUM COVER OF FOUR FEET (4').
24. THE CONTRACTOR SHALL SUPPLY AND INSTALL ANY ADDITIONAL BENDS WITH THRUST BLOCKING AND OTHER APPURTENANCES REQUIRED TO ASSURE PROPER INSTALLATION OF WATER MAINS AND LATERALS. THE CONTRACTOR MAY PULL PIPE AS NEEDED AT THE BENDS WHERE THE DEFLECTION ANGLE OF THE PIPE DOES NOT MATCH THE ANGLE OF THE BEND PROVIDED THE PIPE DEFLECTION IS WITHIN TOLERABLE MANUFACTURERS LIMITS. THE COST FOR ADDITIONAL BENDS AND BLOCKING SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
25. ALL VALVES, DUCTILE IRON AND CAST IRON PIPE, FITTINGS AND SPECIALS SHALL BE POLYETHYLENE WRAPPED.
26. HORIZONTAL BLOCKING FOR WATER LINES HAS BEEN OMITTED FOR CLARITY; HOWEVER, BLOCKING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES STANDARD DETAILS.
27. ALL FITTINGS SHALL BE DUCTILE IRON, FULL BODIED, MECHANICAL JOINT TYPE WITH RESTRAINING GLANDS, AND HAVE A MINIMUM RATED WORKING PRESSURE OF 250 PSI. FITTINGS SHALL BE WRAPPED WITH 8-MIL POLY PRIOR TO BACKFILL.
28. ALL VALVES AND FITTINGS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED. THRUST BLOCKING SHALL BE MINIMUM 3000 PSI CONCRETE AND BE ABLE TO WITHSTAND A MINIMUM 200 PSI TEST PRESSURE.
29. THRUST BLOCKING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES STANDARD DETAILS. DO NOT COVER BELLS OR FLANGES WITH CONCRETE. THE CONTRACTOR SHALL REMOVE EXISTING THRUST BLOCKING OR RESTRAINTS WHERE NECESSARY TO ALLOW THE WORK TO PROCEED, AND SHALL REPLACE THE THRUST BLOCKS WHERE REQUIRED. THE COST TO REMOVE, REPLACE OR PROVIDE THRUST BLOCKING SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
30. TRACER WIRE SHALL BE PLACED ON PIPE PRIOR TO EMBEDMENT. WIRE SHALL BE #12 PLASTIC COATED COPPER WIRE, TIED TO ALL VALVES AND FIRE HYDRANTS, AND EXTENDING TO SIX (6) INCHES ABOVE FINISHED GRADE ALONG THE OUTSIDE OF ALL VALVE STACKS AND HYDRANTS.
31. FINISH BACKFILL SHALL BE NATIVE SOIL FREE OF ALL ROCKS AND CLODS GREATER THAN THREE INCHES IN DIAMETER, COMPACT TO 95% STANDARD PROCTOR OR DENSITY, IN SIX (6) INCH MAXIMUM LOOSE LIFTS, WITH ZERO TO PLUS THREE, OPTIMUM MOISTURE.
32. NO PERSON SHALL OPEN, TURN OFF, INTERFERE WITH, ATTACH ANY HOSE TO, OR TAP ANY WATER MAIN BELONGING TO THE TOWN OF ADDISON UNLESS DULY AUTHORIZED TO DO SO BY THE TOWN OF ADDISON PUBLIC WORKS DEPARTMENT (972-450-2871).
33. THE CONTRACTOR WILL REMOVE EXISTING WATER METERS NOT USED FOR PROPOSED DEVELOPMENT. REMOVE METERS AND METER LIDS IN A WAY AS TO NOT DAMAGE THE METER OR LID AND DELIVER SALVAGED METERS TO THE TOWN OF ADDISON. CONTRACTOR SHALL KILL EXISTING DEADHEAD SERVICE FOR REMOVED METERS AT THE MAIN LINE.
34. THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF EXISTING 8" WATER MAIN AFTER FINAL COMPLETION AND ACCEPTANCE OF NEW 12" WATER MAIN.
35. THE CONTRACTOR SHALL REPLACE EXISTING SERVICE LINES DESIGNATED TO REMAIN, FROM EXISTING METERS TO NEW WATER MAIN WITH NEW COPPER (TYPE K ONLY) LINES. NEW SIZES TO BE THE SAME AS EXISTING, WITH A MINIMUM OF 3/4" DIAMETER.
36. ALL WASTEWATER MAIN PIPING SHALL MEET THE EXTRA STRENGTH REQUIREMENTS OF ASTM SPECIFICATION D3034 (SDR-35). PIPE SHALL HAVE THE BELL AND SPIGOT TYPE JOINTS, CONSISTING OF INTEGRAL WALL SECTION WITH FACTORY INSTALLED COMPRESSION RUBBER RING GASKET, SECURELY LOCKED IN BELL GROOVE TO PROVIDE POSITIVE SEAL UNDER ALL INSTALLATION CONDITIONS. PIPE SHALL BE LAID WITH THE BELL END ON THE UPSTREAM SIDE.
37. ALL SEWER MANHOLES SHALL BE PRESSURE TYPE FRAME AND COVERS SHALL HAVE THE INTERIOR SURFACE COATED WITH AN EPOXY COATING (RAVEN 405 OR APPROVED EQUAL), MINIMUM 40 MILS THICKNESS, INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
38. ALL EXISTING AND PROPOSED IMPROVEMENTS (VALVES, MANHOLES, FIRE HYDRANTS, WATER METERS, ETC.) SHALL BE ADJUSTED TO FINAL FINISHED GRADE BY THE CONTRACTOR.
39. THE CONTRACTOR SHALL STAMP A 2-INCH "W" AND A 2-INCH "S" IN THE CURB AT THE LOCATION OF THE WATER AND SEWER SERVICE LINES RESPECTIVELY. A 2-INCH "C" SHALL MARK CONDUITS CROSSING PAVEMENT, AND A 2-INCH "V" SHALL MARK WATER VALVES WITH THE "POINT" OF THE "V" TOWARD THE VALVE.
40. WATERLINES SHALL BE TESTED BOTH BACTERIOLOGICALLY AND HYDROSTATICALLY. WATER MAINS SHALL BE HYDROSTATICALLY TESTED AT 150 PSI FOR FOUR (4) HOURS. FIRE LINES SHALL BE HYDROSTATICALLY TESTED AT 200 PSI FOR (2) HOURS. ALL BLEEDER LINES SHALL BE REMOVED UPON COMPLETION OF TESTING BY REMOVING THE CORPORATION STOP AND INSTALLING A BRASS PLUG. HEAVILY CHLORINATED WATER (8.8 MGL OR GREATER FREE CHLORINE) RESULTING FROM WATER LINE STERILIZATION SHALL BE DIRECTED TO THE SANITARY SEWER AFTER THE MANDATORY CHLORINE RETENTION TIME (USUALLY 24 HOURS) UNLESS OTHERWISE NOTED.
41. ALL WASTEWATER MAINS SHALL BE CAMERA INSPECTED BY THE CONTRACTOR AFTER THE INSTALLATION OF ALL UTILITIES AND PRIOR TO FINAL ACCEPTANCE OF NEW WASTEWATER FACILITIES.
42. THE CONTRACTOR SHALL PROVIDE VERIFICATION OF COMPLETION AND COMPLIANCE OF ALL REQUIRED TESTS (PRESSURE, BACTERIOLOGICAL, BACKFLOW, VACUUM, MANDREL, VHS VIDEO OF SANITARY SEWER, ETC.) TO THE TOWN OF ADDISON.
43. THE CONTRACTOR SHALL CALL (972) 450-2847 TO REQUEST A FINAL WALK-THROUGH INSPECTION OF THE PUBLIC INFRASTRUCTURE WORK.
44. ANY ADJACENT PROPERTIES AFFECTED BY THE CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.
45. BLUE REFLECTORIZED BUTTONS ARE TO BE INSTALLED IN THE CENTER OF THE DRIVE LANE NEAREST THE OUTSIDE CURB OPPOSITE ALL FIRE HYDRANTS.



NO.	REVISION	BY	DATE

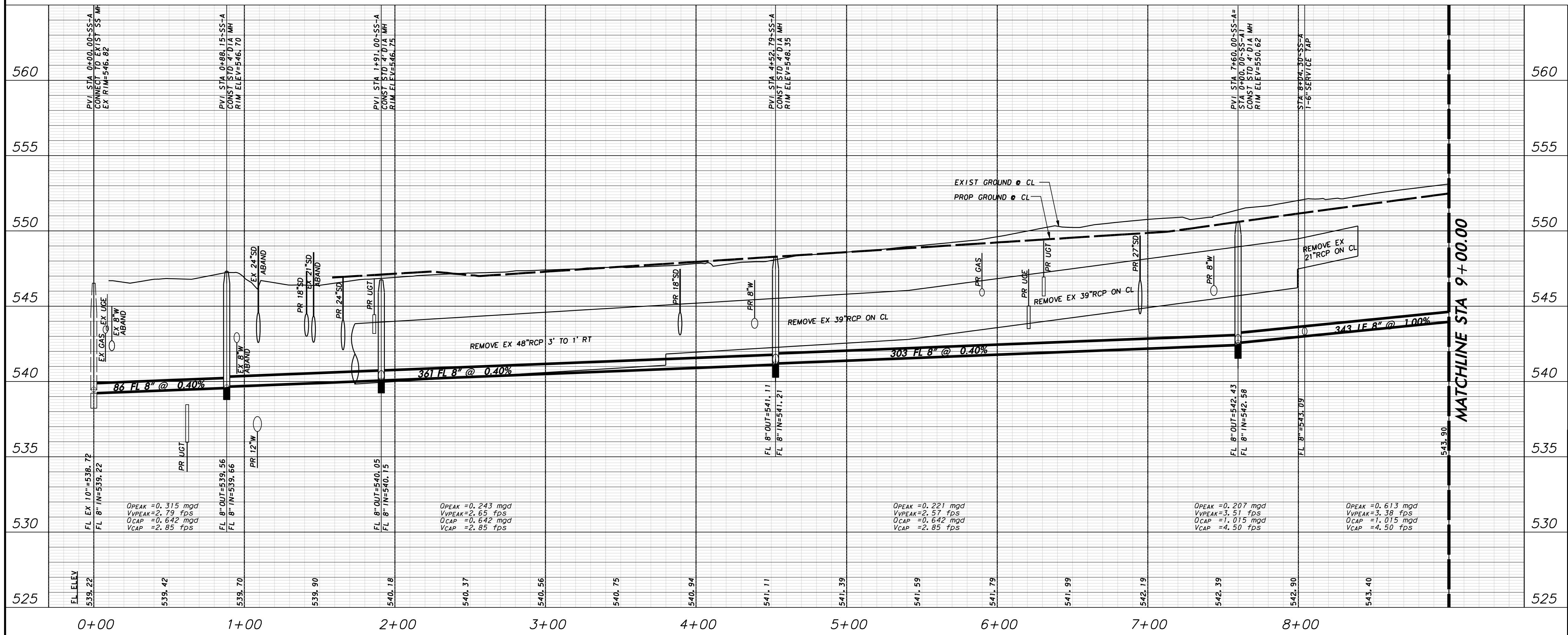
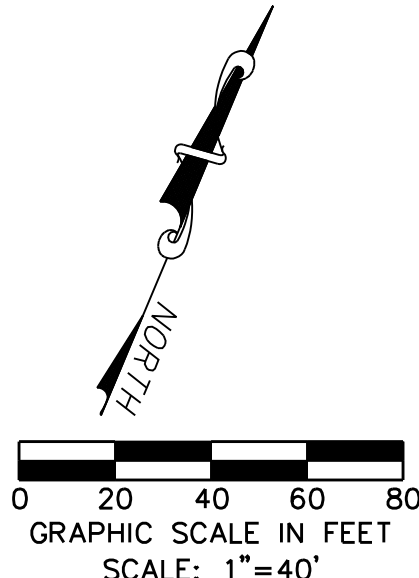
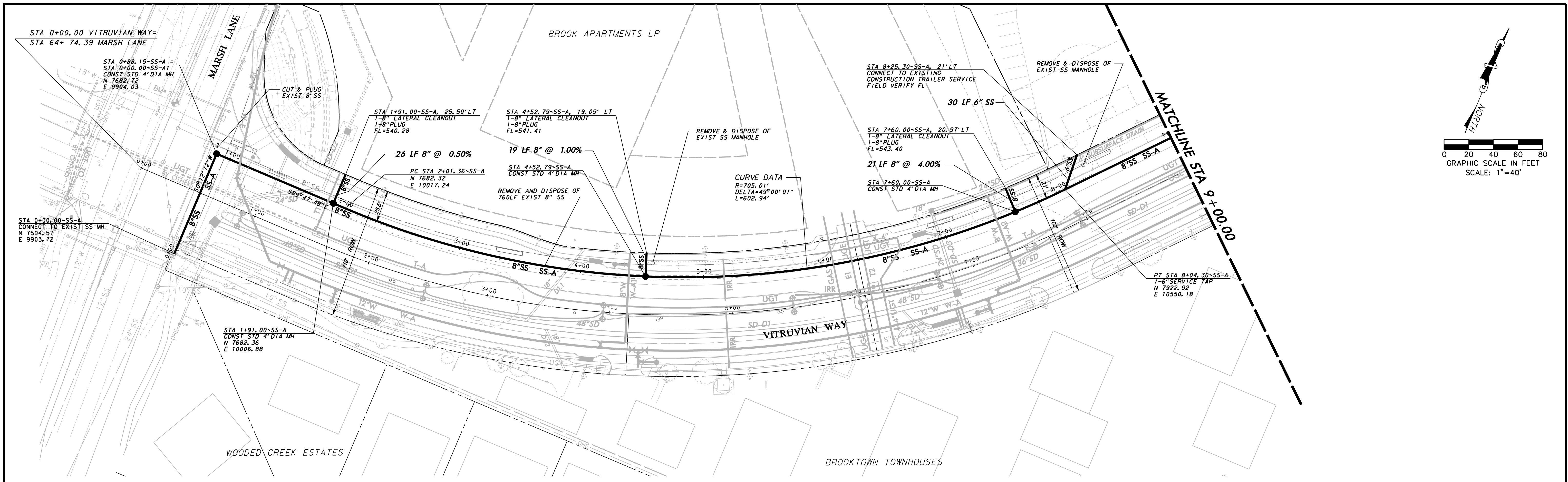
**Addison** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY & PONTE AVENUE

**OVERALL SANITARY SEWER LAYOUT & NOTES**

<b>icon</b> Consulting Engineers, Inc. Civil Engineers - Designers - Planners	250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210				
PROJECT: 5029-01	DESIGN: ICE	DRAWN: ICE	DATE: MAY 7 2009	FILE: PW# 2009-01	SHEET: 65

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

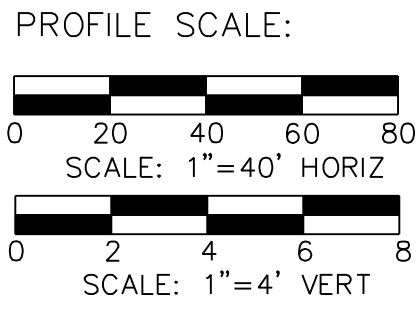


**WARNING**

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**BM #1 REF. ELEVATION = 559.47**  
 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE  
 1127' NORTH OF VITRUVIAN WAY.

**BM #2 REF. ELEVATION = 547.84**  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION  
 OF VITRUVIAN WAY AND MARSH LANE.



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**Addison!** TOWN OF ADDISON  
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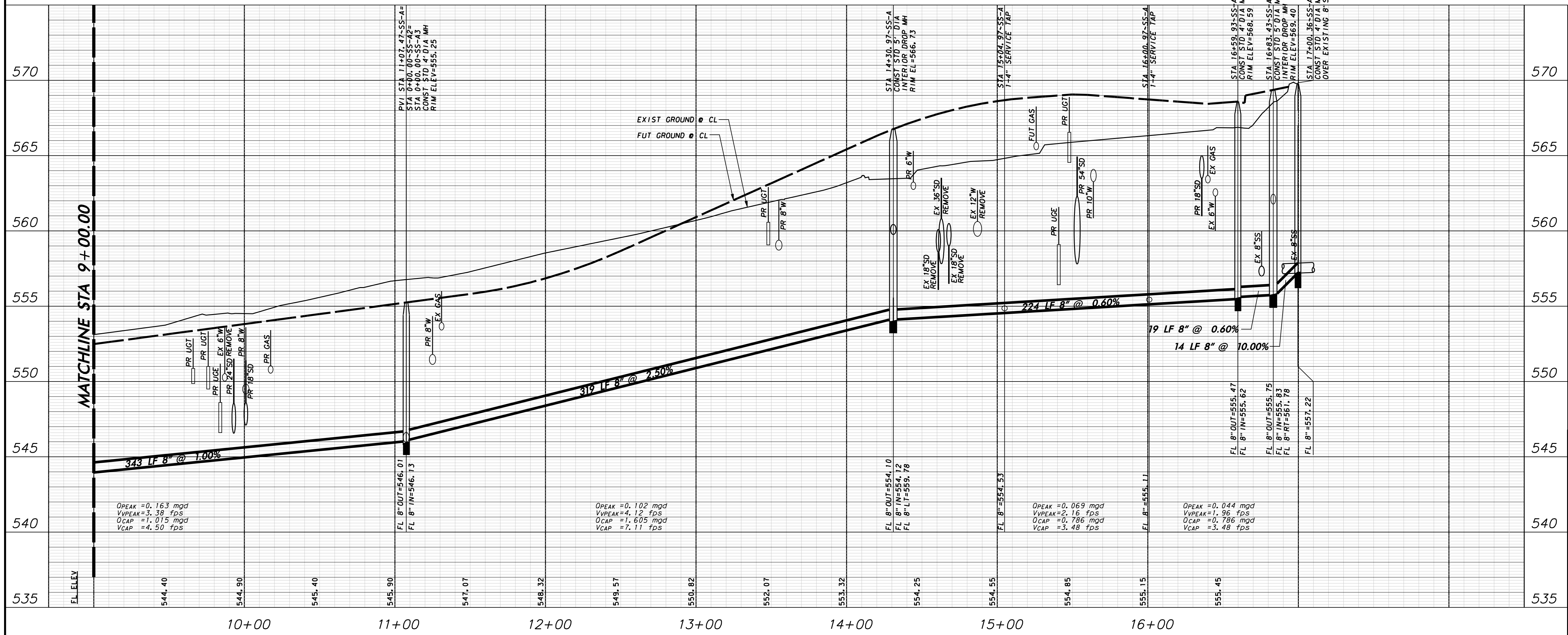
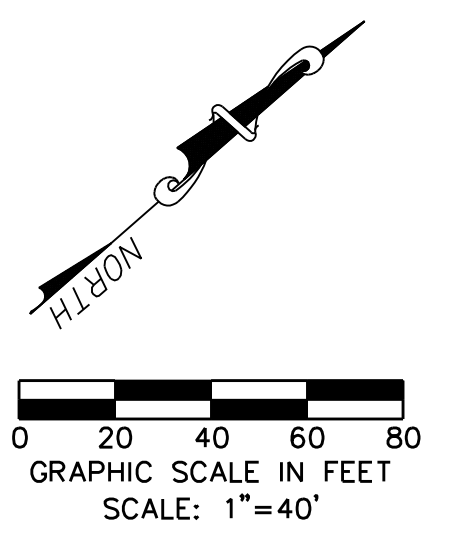
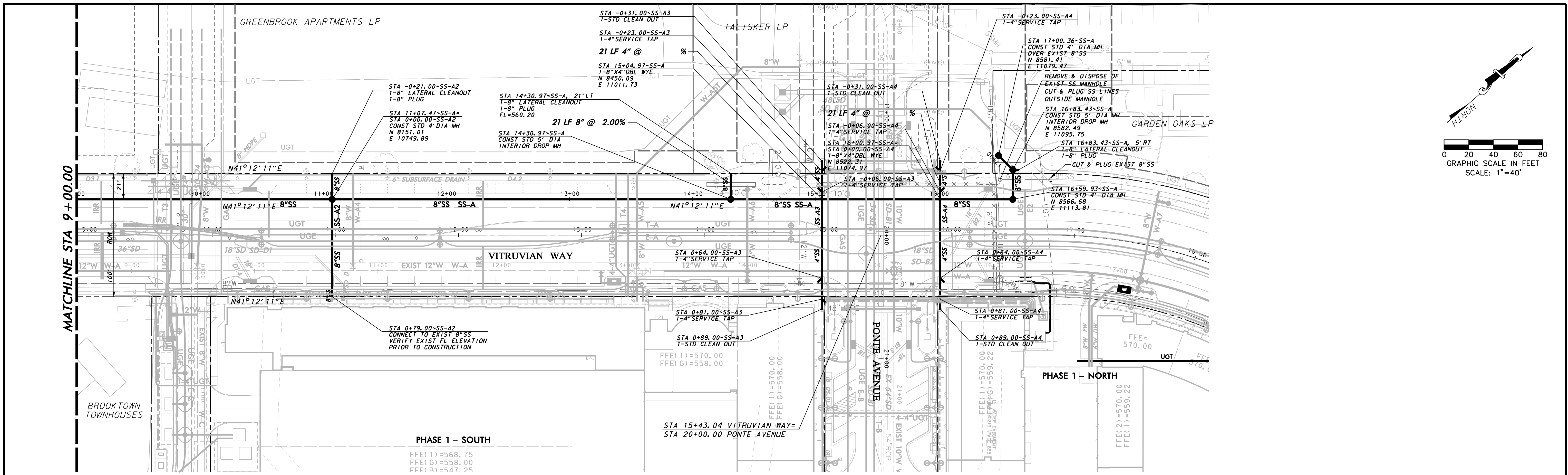
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

SANITARY SEWER PLAN & PROFILE-VW  
 LINE A-STA. 0+00.00 TO 9+00.00

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PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	66

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

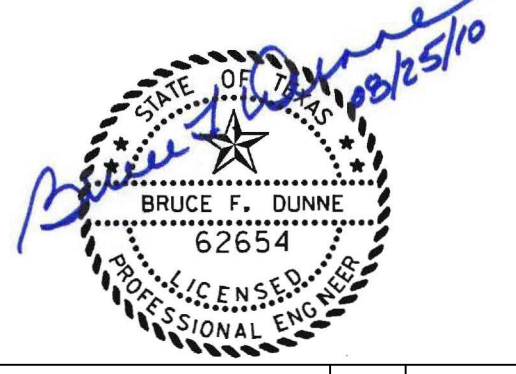
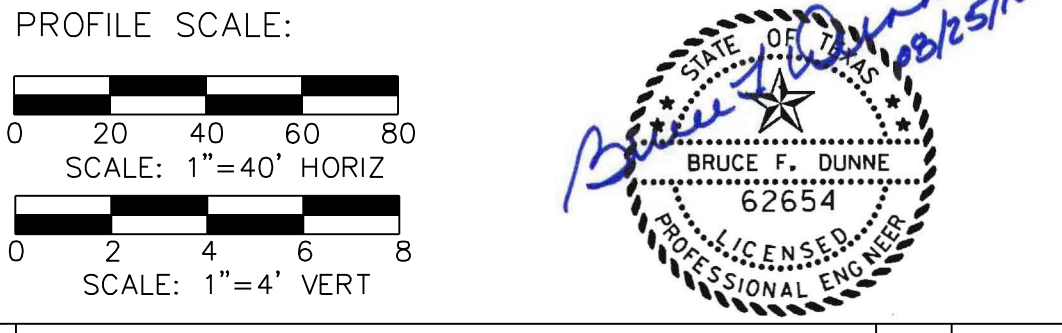


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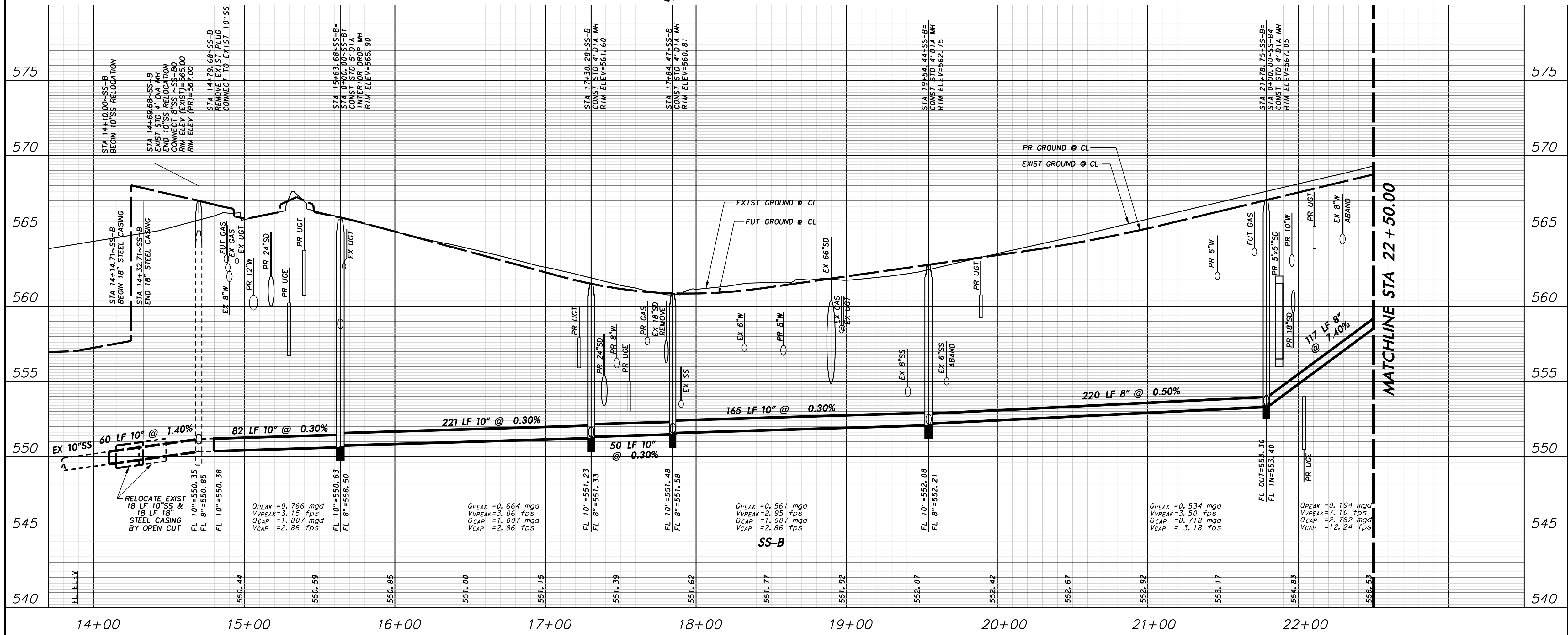
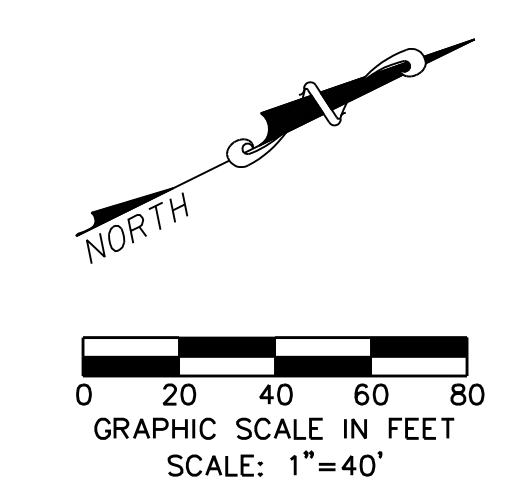
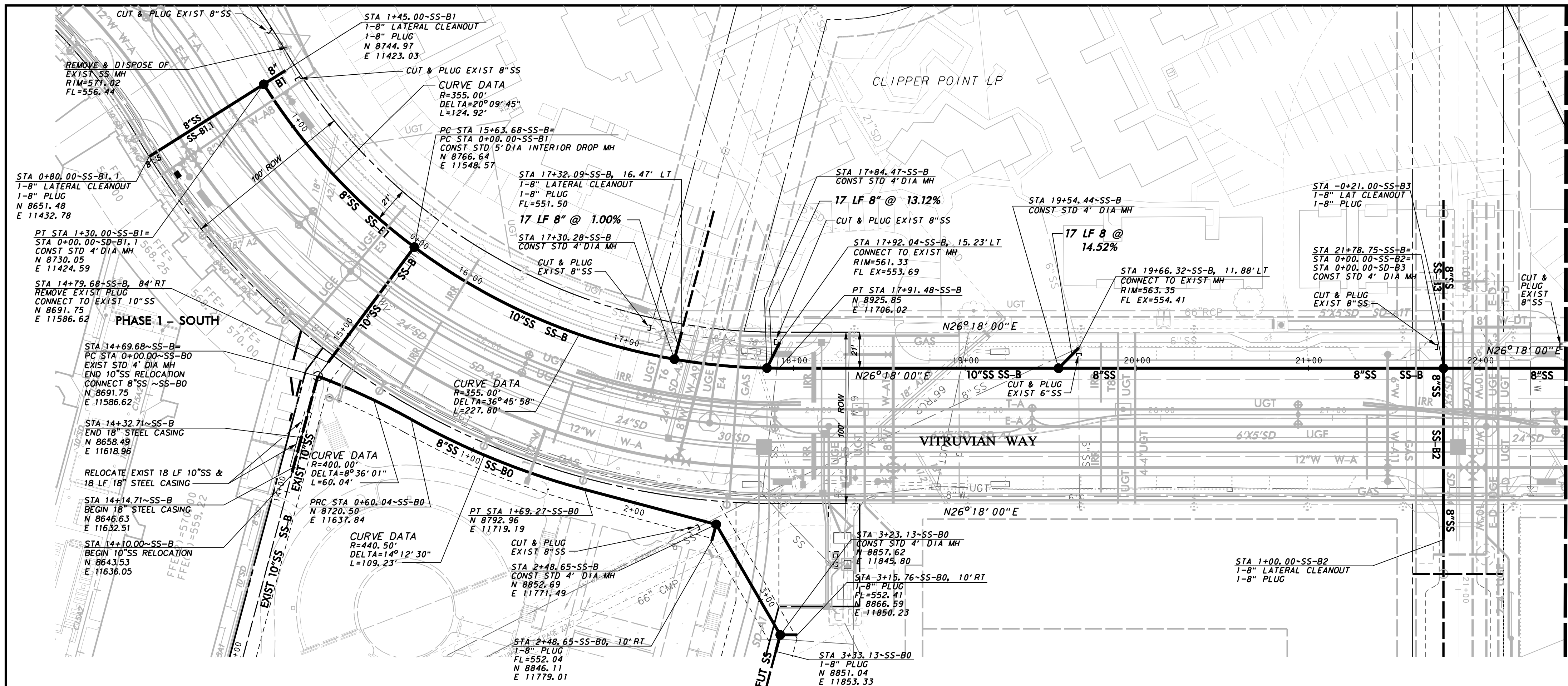
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE

**SANITARY SEWER PLAN & PROFILE-VW**  
 LINE A-STA. 9+00.00 TO 16+29.46

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PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	67

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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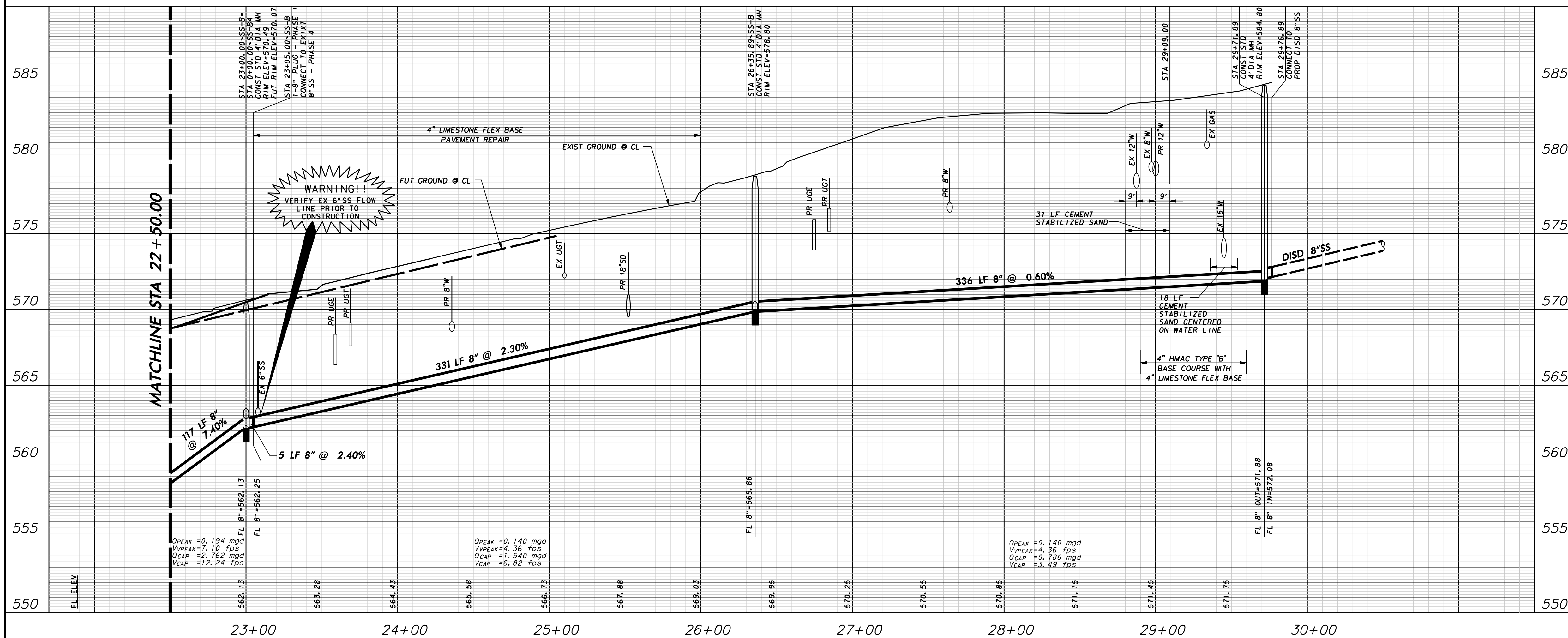
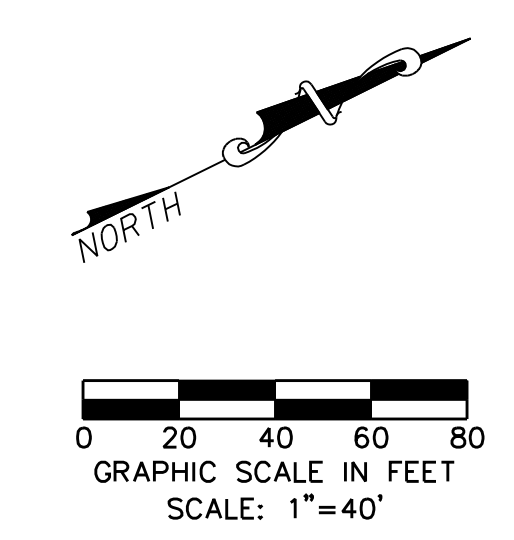
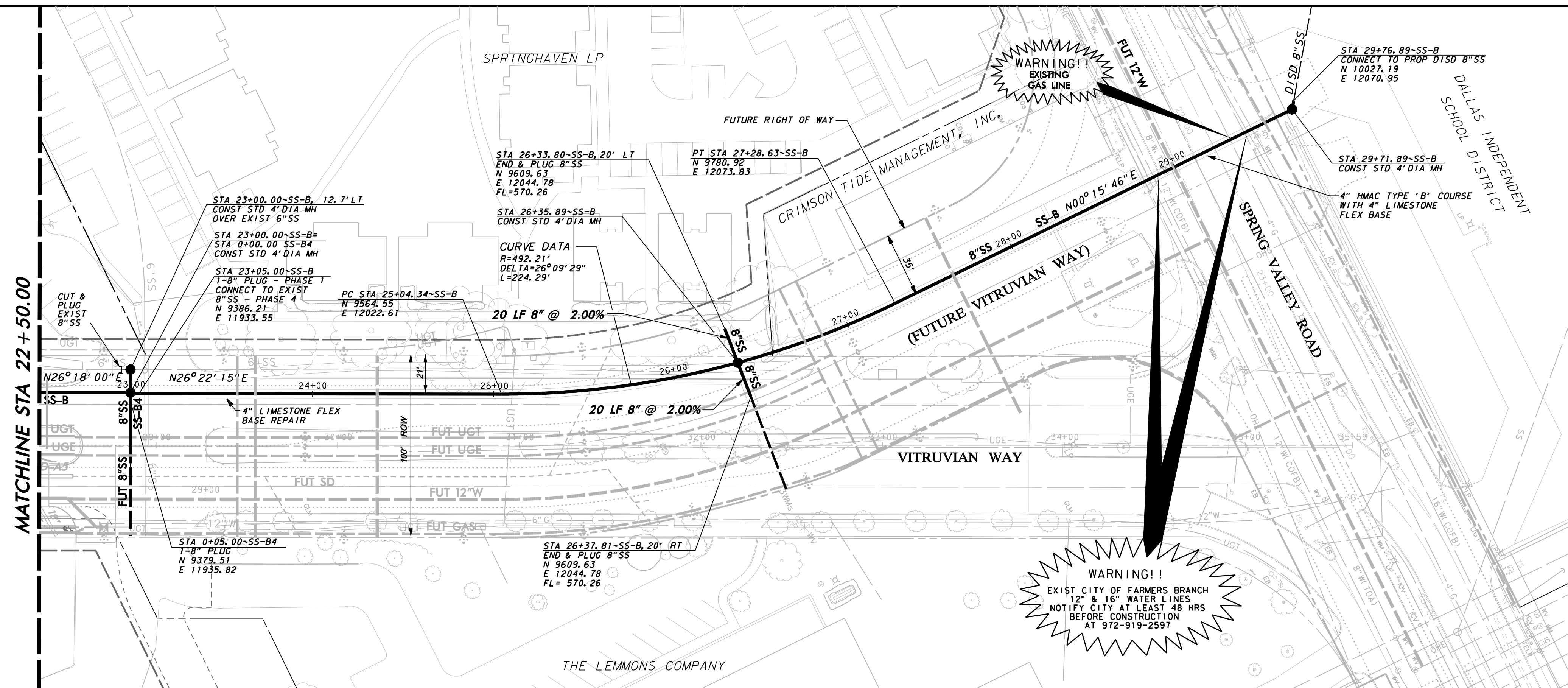


NO.		REVISION	BY	DATE
<p align="center"><b>Addison!</b> TOWN OF ADDISON DALLAS COUNTY, TEXAS</p> <p align="center"><b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY &amp; PONTE AVENUE</p> <p align="center"><b>SANITARY SEWER PLAN &amp; PROFILE-VW</b> LINE B-STA. 14+79.68 TO 22+50.00</p> <p><b>icon</b> Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210</p>				
PROJECT	DESIGN	DRAWN	DATE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01 68

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

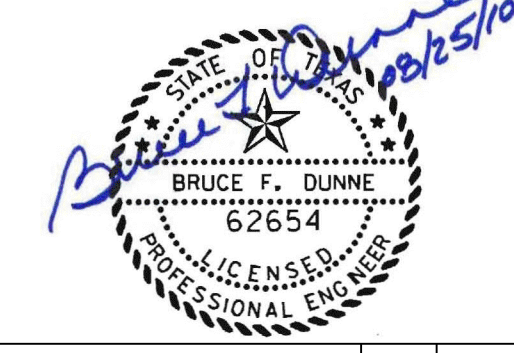
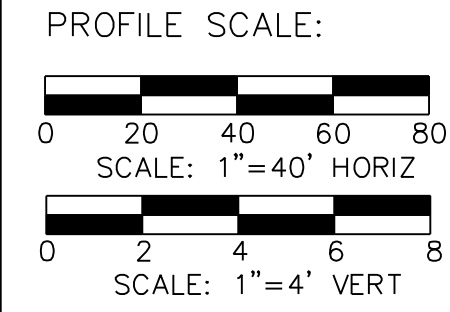
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MATCHLINE STA 22 + 50.00



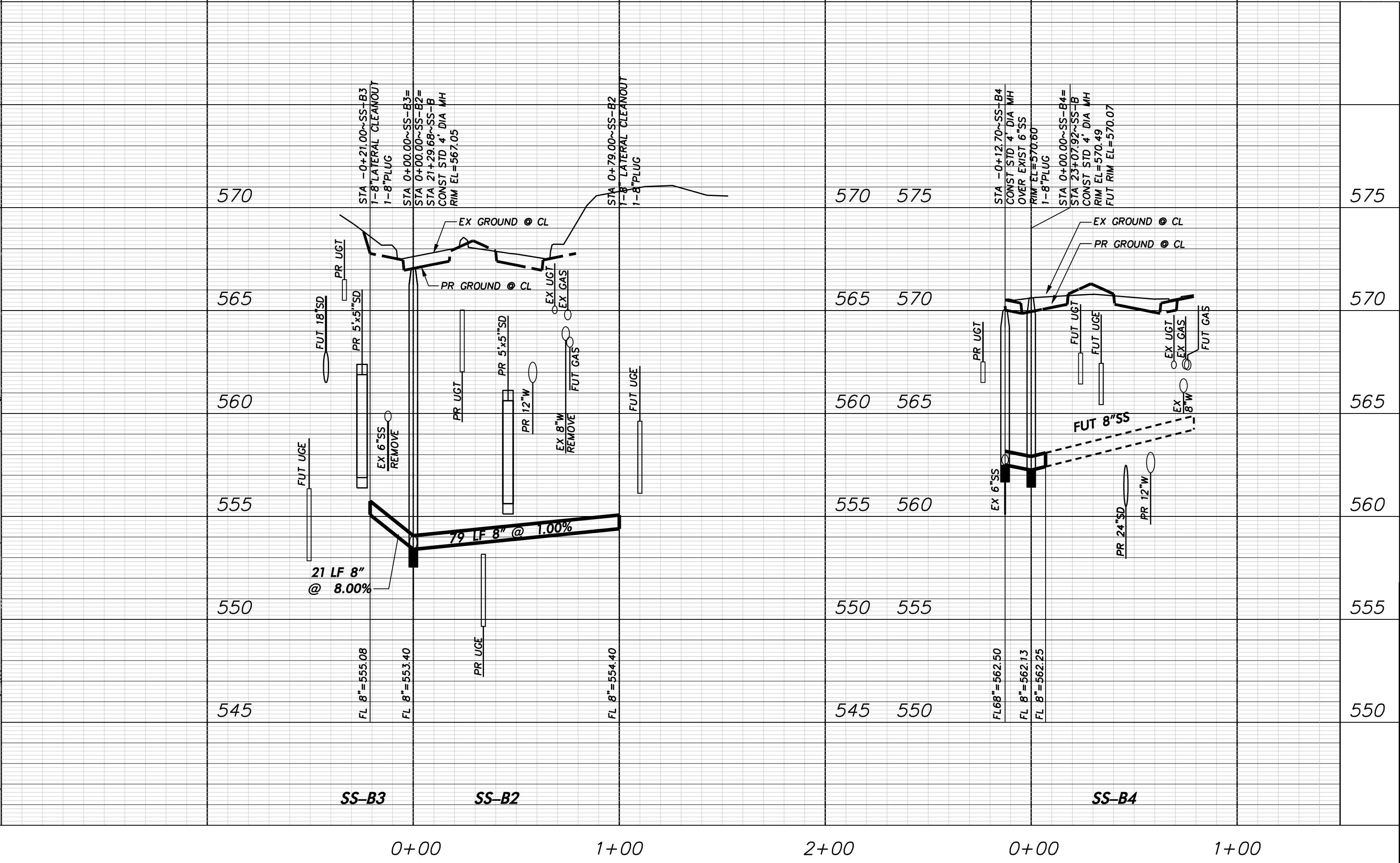
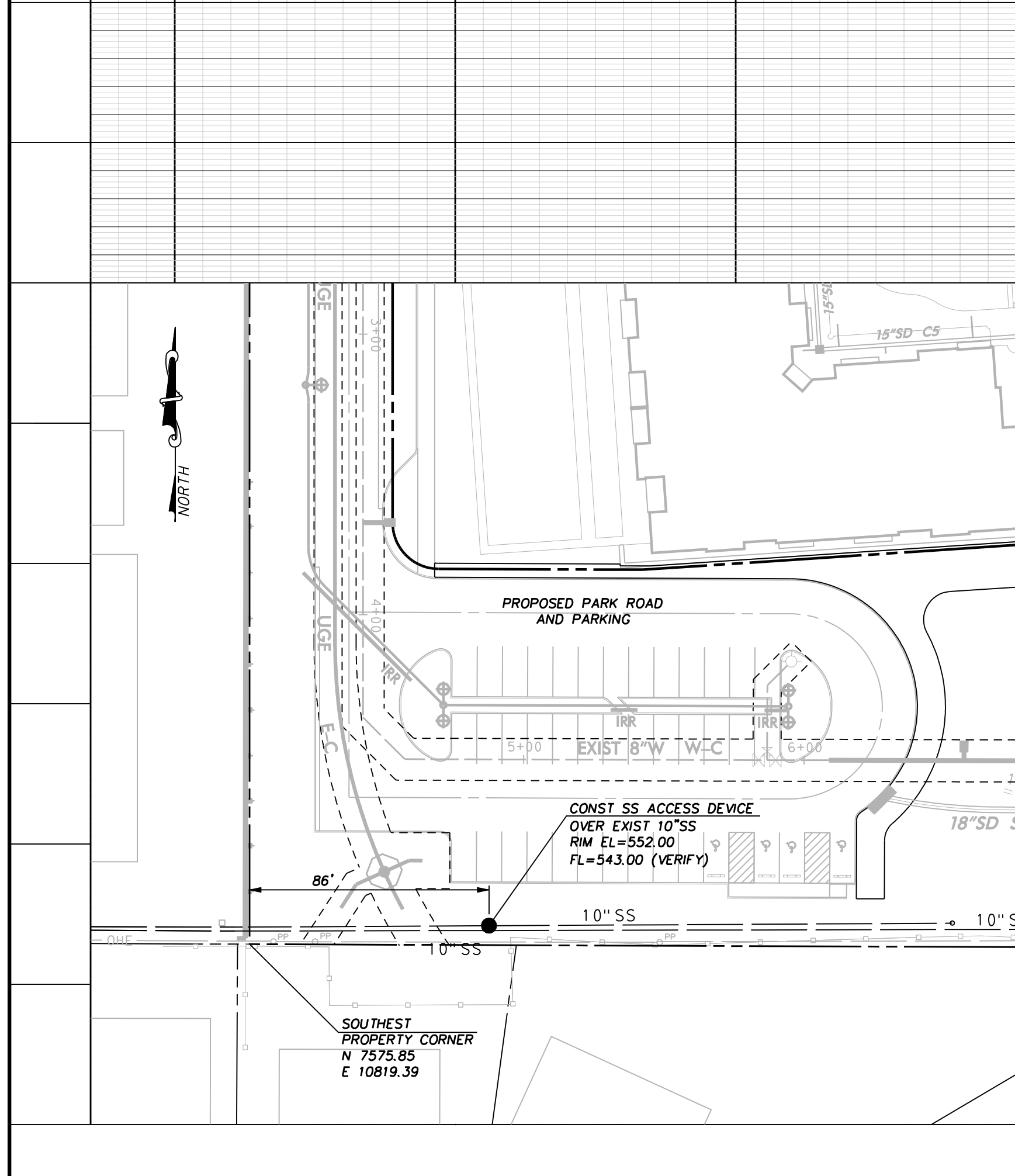
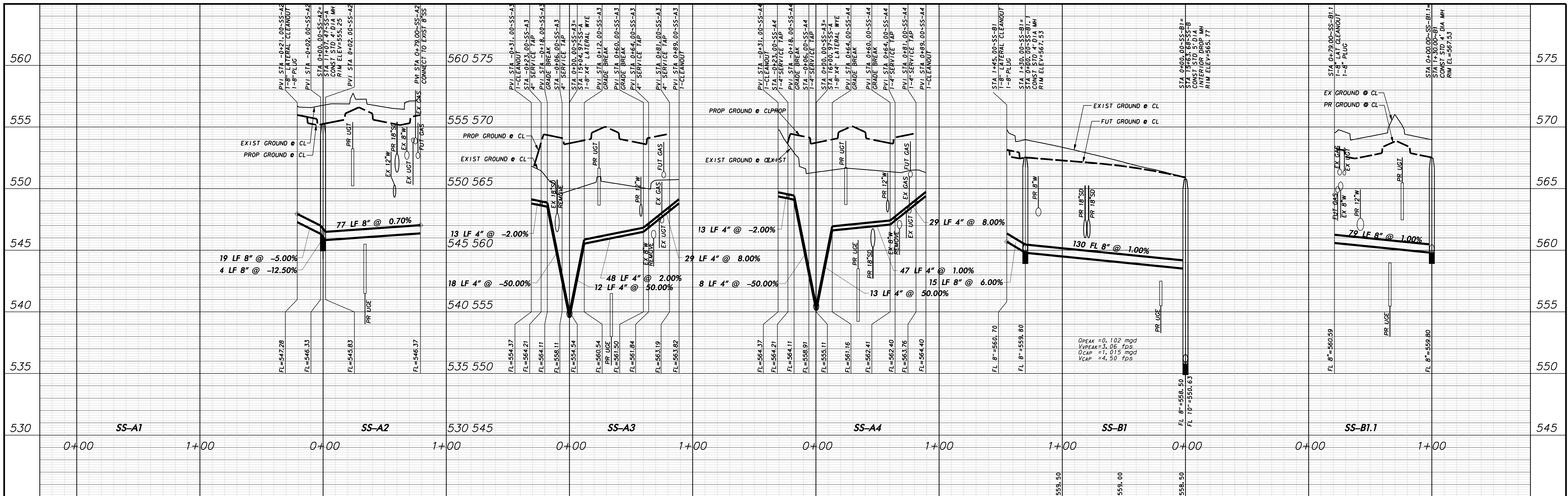
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<b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS				
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY & PONTE AVENUE				
<b>SANITARY SEWER PLAN &amp; PROFILE-VW</b> LINE B-STA. 22+50.00 TO 29+76.89				
<b>icon</b>		Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210
PROJECT	DESIGN	DRAWN	DATE	FILE SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01 69

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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PROFILE SCALE:

NO.	REVISION	BY	DATE

**ADDISON** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY & PONTE AVENUE

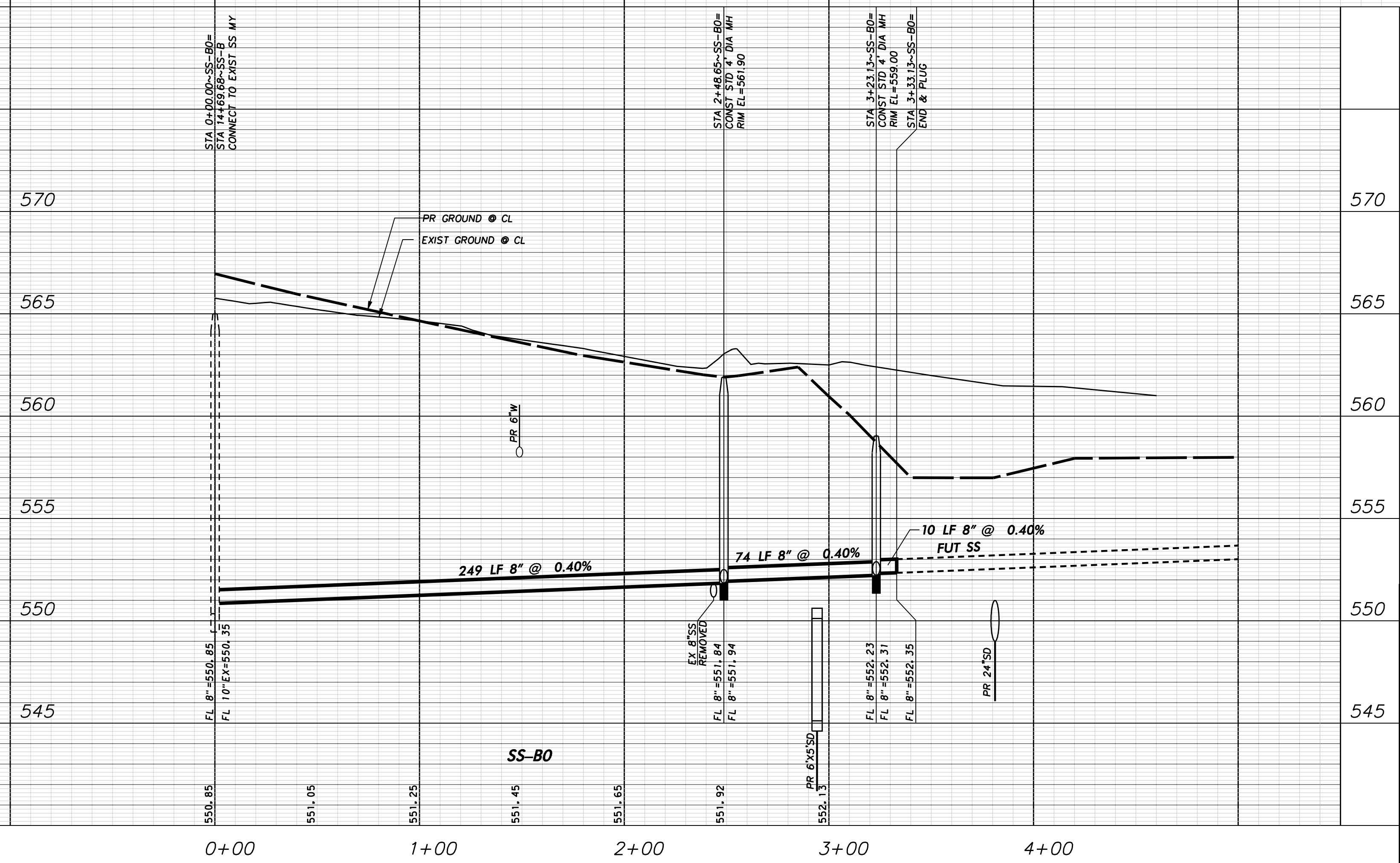
**SANITARY SEWER PROFILES**  
LINES A & B

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PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	70A

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



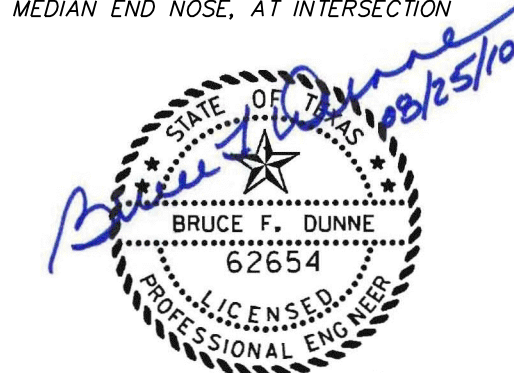
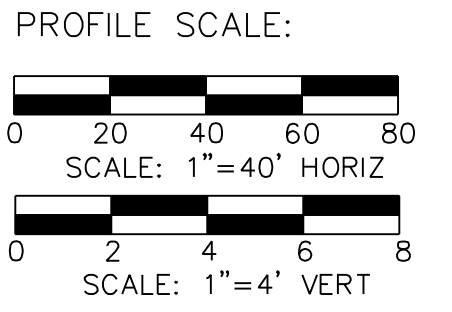


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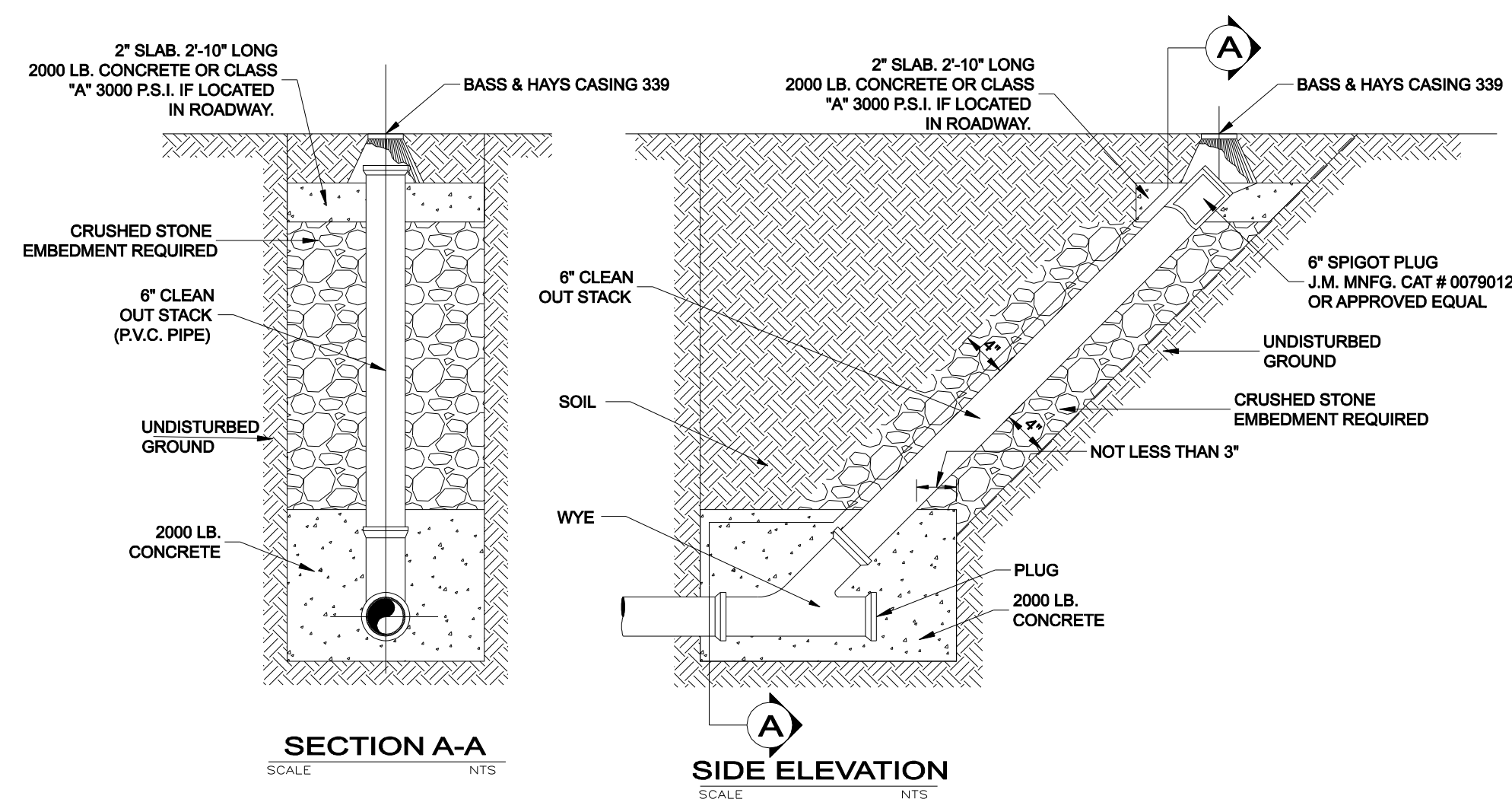
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**SANITARY SEWER PROFILES  
 LINE B**

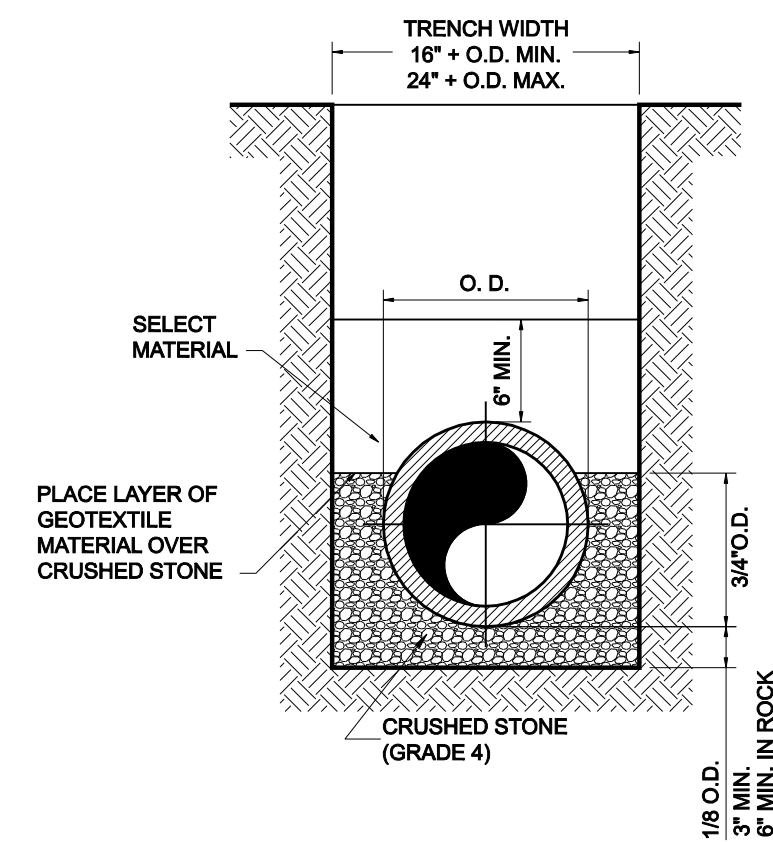
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PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	70B

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



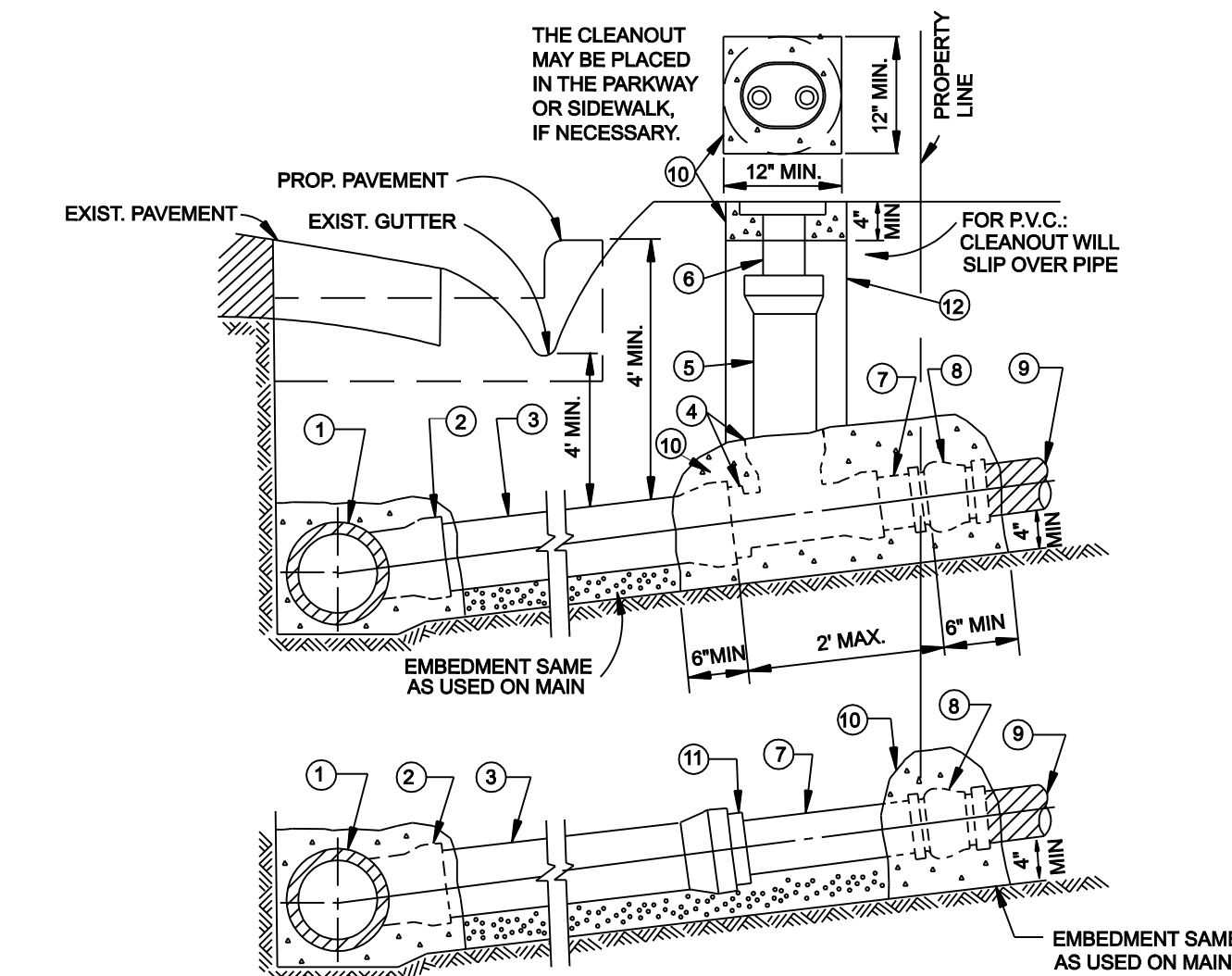
STANDARD CLEANOUT



CRUSHED STONE SHALL BE 3/4\", PASSING # 4 SIEVE

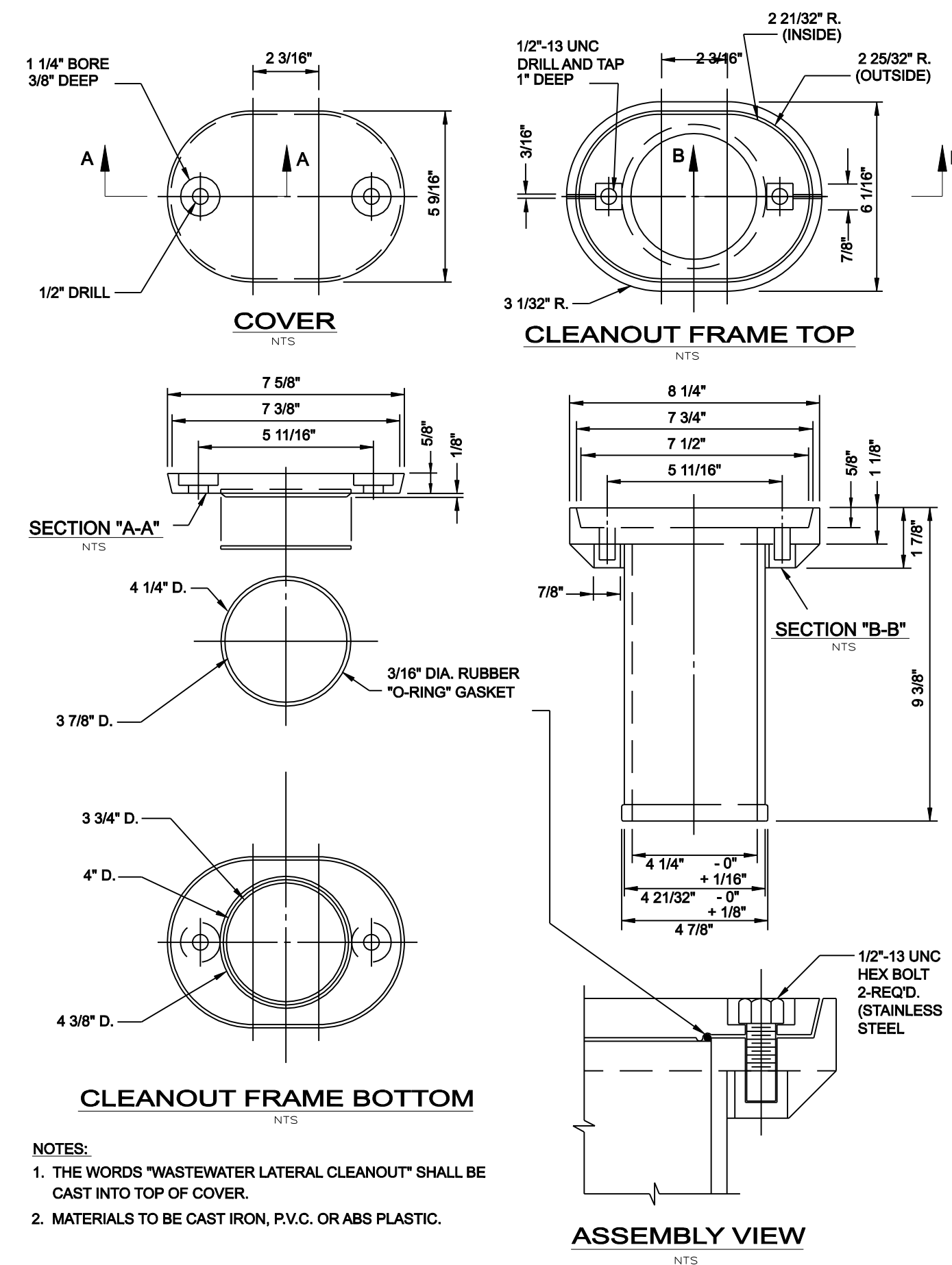
CLASS "B+" EMBEDMENT  
TYPICAL BACKFILL WATER MAIN  
P.V.C. WATER PIPE

- KEY:
- ① WASTEWATER MAIN
  - ② 6\"/>
  - ③ 6\"/>
  - ④ 6\"/>
  - ⑤ 4\"/>
  - ⑥ 4\"/>
  - ⑦ 4\"/>
  - ⑧ ADAPTOR
  - ⑨ BUILDING SEWER LAT.
  - ⑩ CLASS "B" CONCRETE
  - ⑪ 8\"/>
  - ⑫ COMPACTED AS SPECIFIED, OR INUNDATED SAND



- NOTES:
- CLEANOUT CASTING TO BE FURNISHED AND PLACED PER SPECIAL CONDITIONS. IN VEHICLE TRAFFIC AREAS AND FOR COMMERCIAL MAINLINE LATERALS, WASTEWATER CLEANOUT SHALL BE OF CAST IRON.
  - SLOPE OF LATERAL TO BE 1% MIN., 2% MAX. UNLESS INSTRUCTED OTHERWISE BY OWNER.
  - THE WASTEWATER LATERAL SHALL BE CONNECTED TO BUILDING LATERAL AND CONSTRUCTED IN SUCH MANNER AS TO CLEAR EXISTING UTILITIES AND PROPOSED FACILITIES SUCH AS STORM SEWER MAINS, PAVING, SIDEWALKS, RETAINING WALLS, ETC. VERTICAL BENDS (22.5\"/>
  - THE MAINLINE LATERAL CONNECTION TO THE PRIVATE BUILDING LATERAL SHALL BE AS CLOSE TO THE PROPERTY LINE AS POSSIBLE.
  - INSTALL 4\"/>
  - SUBSTITUTE 4\"/>
  - THE CLEANOUT STACK & CASTING MAY BE PLACED IN THE PARKWAY, VEHICLE TRAFFIC AREAS, OR SIDEWALK, IF NECESSARY.

SANITARY SEWER LATERAL  
WITH & WITHOUT CLEANOUT



- NOTES:
- THE WORDS "WASTEWATER LATERAL CLEANOUT" SHALL BE CAST INTO TOP OF COVER.
  - MATERIALS TO BE CAST IRON, P.V.C. OR ABS PLASTIC.

SANITARY SEWER LATERAL  
CLEANOUT FRAME & COVER



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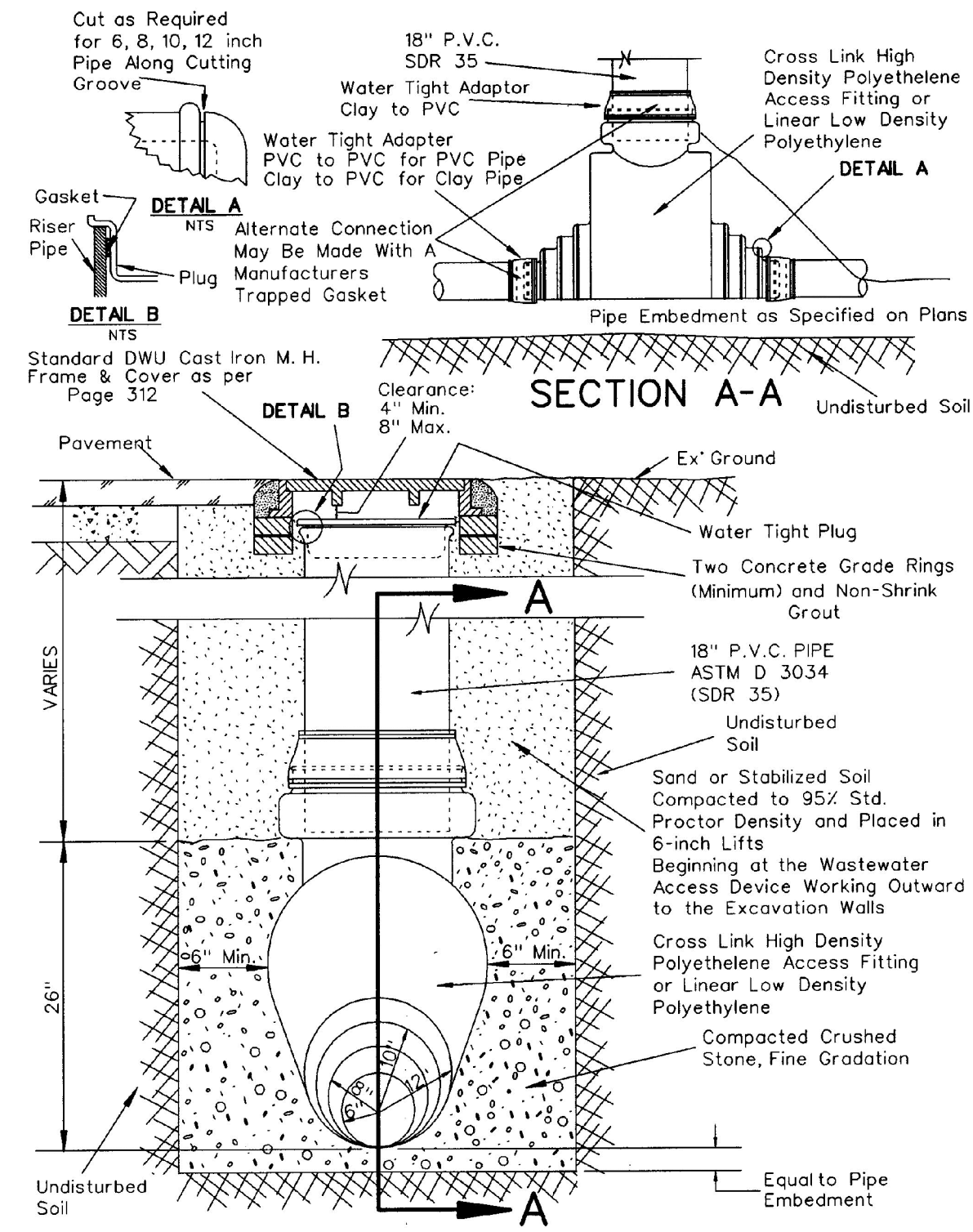
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**SANITARY SEWER DETAILS**

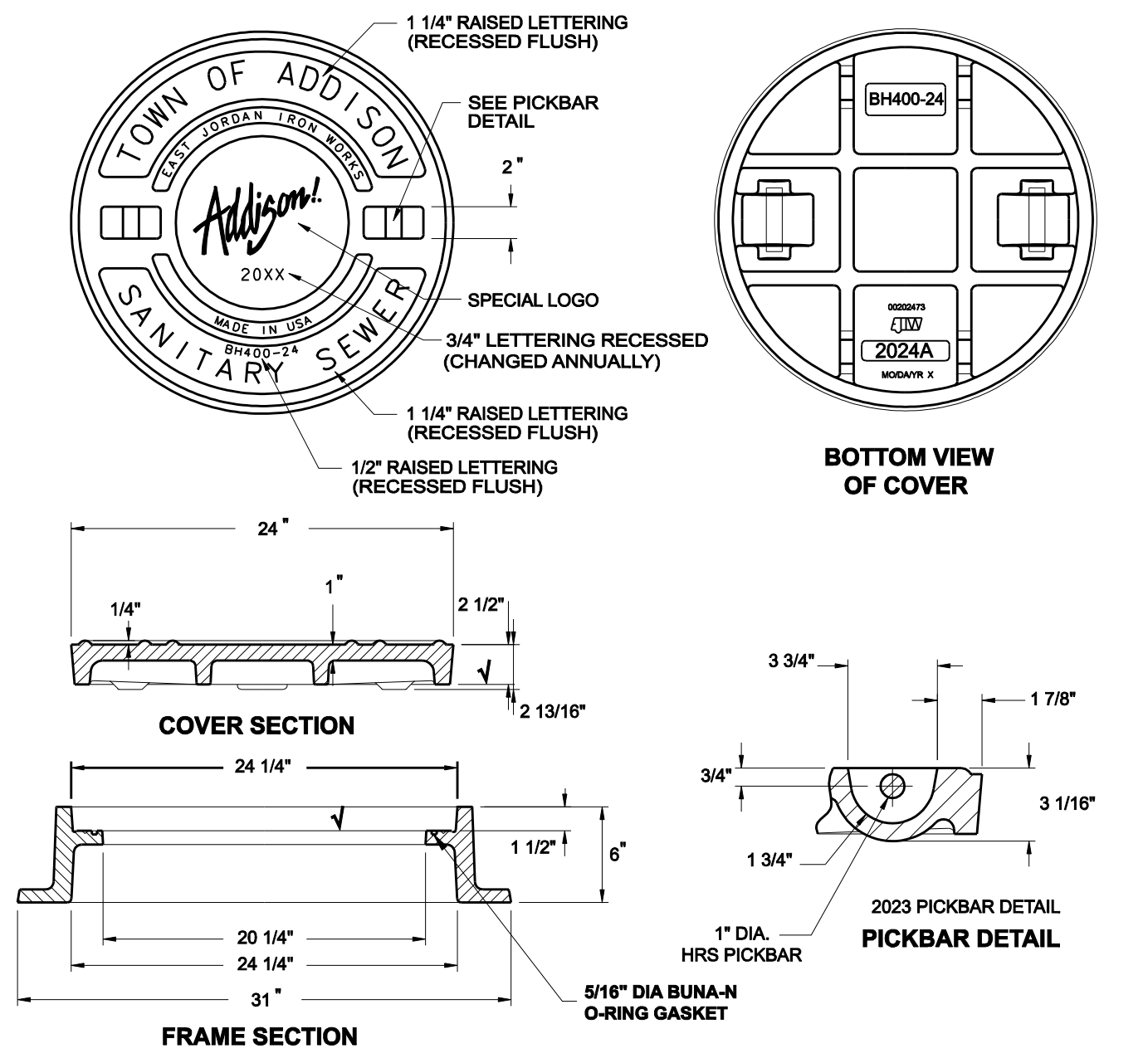
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PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
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PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



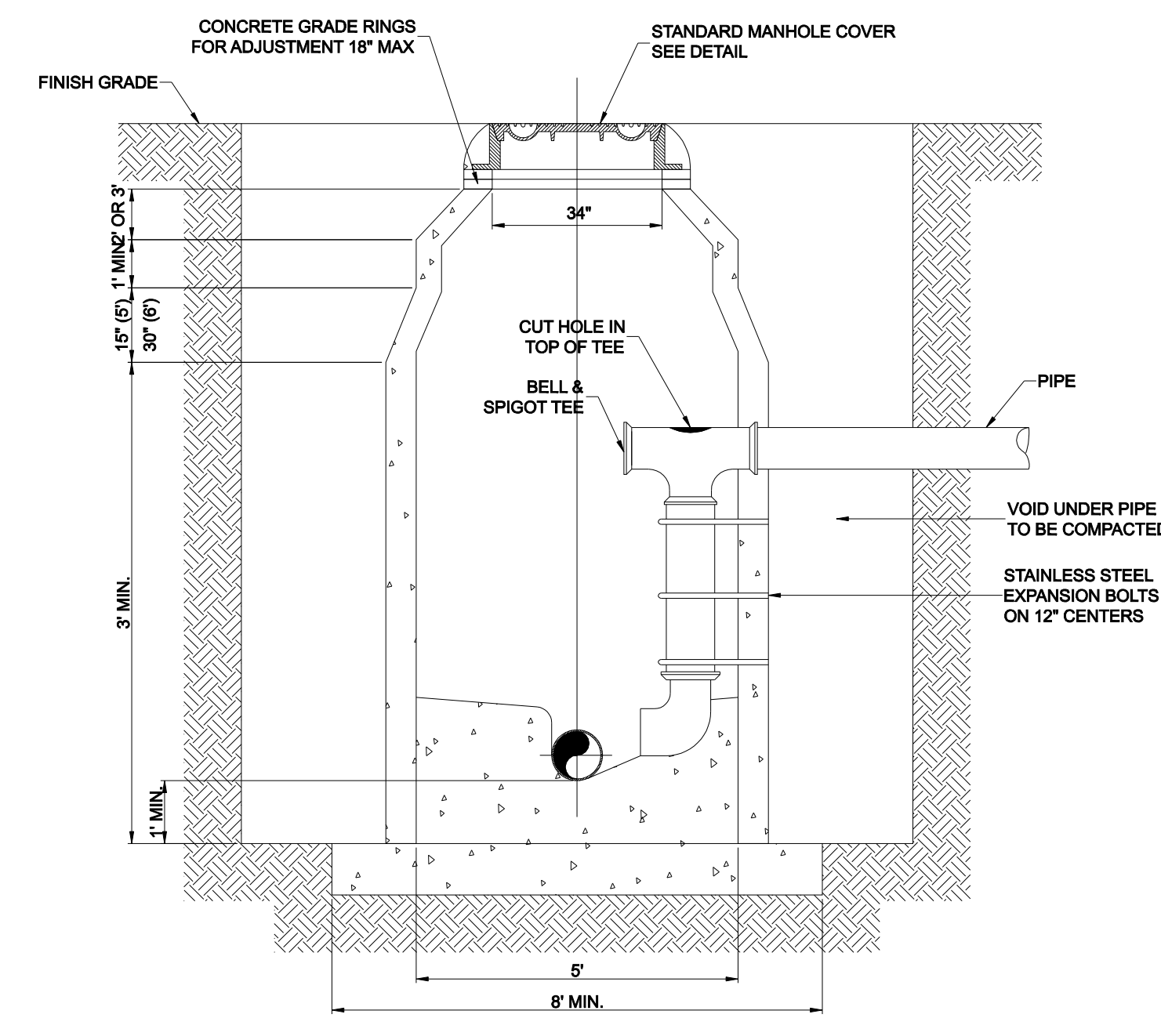
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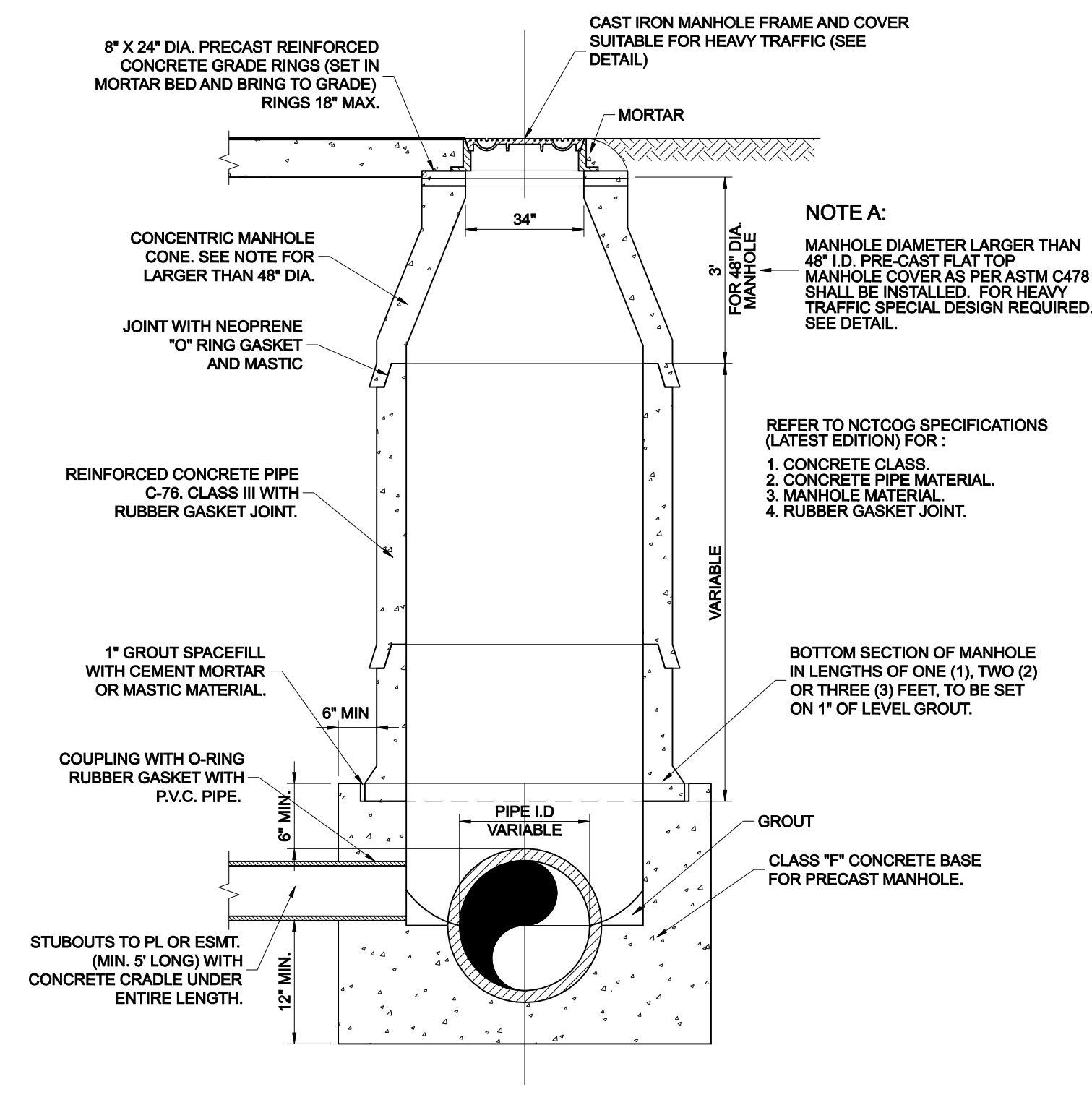
LOAD RATING	COATING	ESTIMATED WEIGHT	MATERIAL SPECIFICATION
HEAVY DUTY	DIPPED	COVER: 190 LBS 86 kg	COVER - GRAY IRON ASTM A48 CL35B

√ DESIGNATES MACHINE SURFACE

CAST IRON FRAME AND COVER



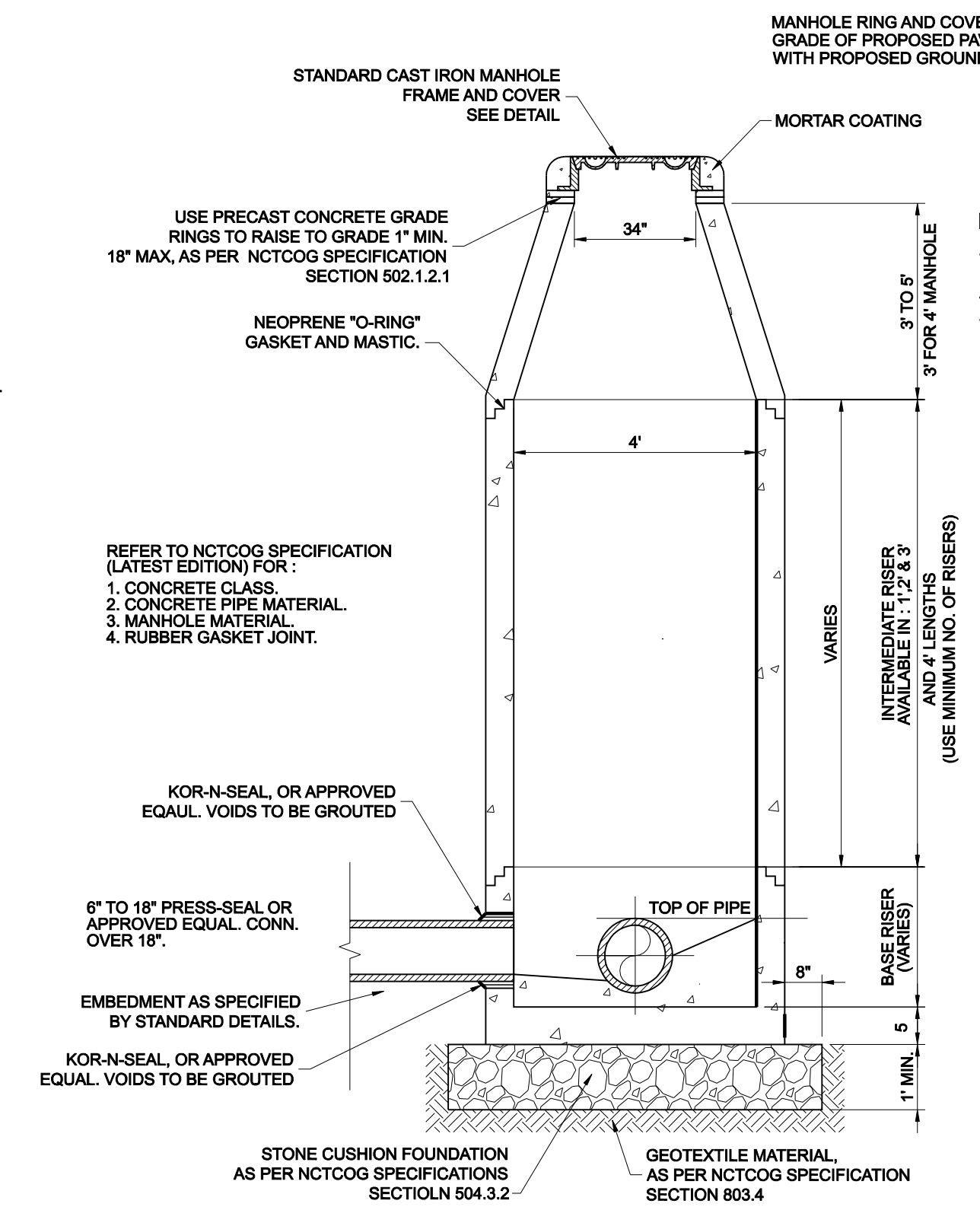
INTERIOR DROP MANHOLE DETAIL



PRECAST CONCRETE PIPE MANHOLE ALTERNATE "A"

NOTE: IF FALSE MANHOLE BOTTOMS ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED.

ALL MANHOLES SHALL PASS VACUUM TEST AS PER NCTCOG SPECIFICATIONS



PRECAST CONCRETE MANHOLE ALTERNATE "B"

NOTE: IF FALSE MANHOLE BOTTOMS ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED.

ALL MANHOLES SHALL PASS VACUUM TEST AS PER NCTCOG SPECIFICATIONS

NO.	REVISION	BY	DATE

**TOWN OF ADDISON**  
DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**SANITARY SEWER DETAILS**

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PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

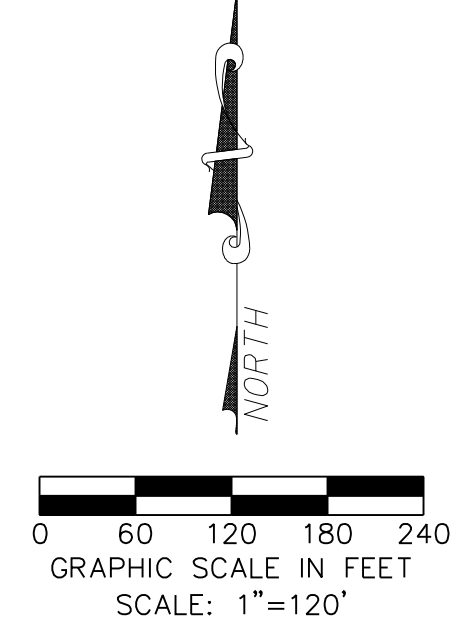
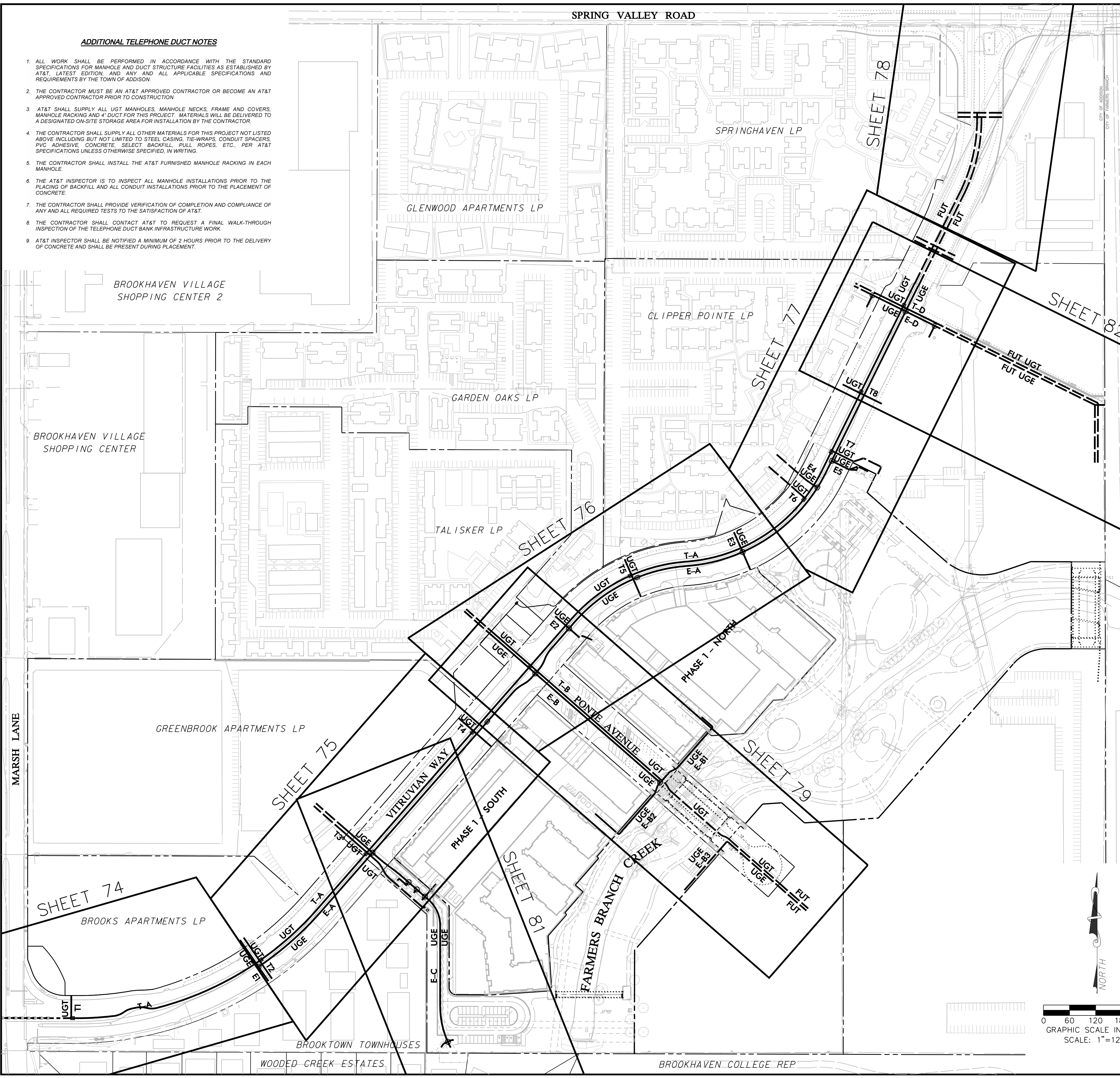
SPRING VALLEY ROAD

ADDITIONAL TELEPHONE DUCT NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MANHOLE AND DUCT STRUCTURE FACILITIES AS ESTABLISHED BY AT&T, LATEST EDITION, AND ANY AND ALL APPLICABLE SPECIFICATIONS AND REQUIREMENTS BY THE TOWN OF ADDISON.
2. THE CONTRACTOR MUST BE AN AT&T APPROVED CONTRACTOR OR BECOME AN AT&T APPROVED CONTRACTOR PRIOR TO CONSTRUCTION.
3. AT&T SHALL SUPPLY ALL UGT MANHOLES, MANHOLE NECKS, FRAME AND COVERS, MANHOLE RACKING AND 4" DUCT FOR THIS PROJECT. MATERIALS WILL BE DELIVERED TO A DESIGNATED ON-SITE STORAGE AREA FOR INSTALLATION BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL SUPPLY ALL OTHER MATERIALS FOR THIS PROJECT NOT LISTED ABOVE INCLUDING BUT NOT LIMITED TO STEEL CASING, TIE-WRAPPS, CONDUIT SPACERS, PVC ADHESIVE CONCRETE, SELECT BACKFILL, PULL ROPES, ETC., PER AT&T SPECIFICATIONS UNLESS OTHERWISE SPECIFIED, IN WRITING.
5. THE CONTRACTOR SHALL INSTALL THE AT&T FURNISHED MANHOLE RACKING IN EACH MANHOLE.
6. THE AT&T INSPECTOR IS TO INSPECT ALL MANHOLE INSTALLATIONS PRIOR TO THE PLACING OF BACKFILL AND ALL CONDUIT INSTALLATIONS PRIOR TO THE PLACEMENT OF CONCRETE.
7. THE CONTRACTOR SHALL PROVIDE VERIFICATION OF COMPLETION AND COMPLIANCE OF ANY AND ALL REQUIRED TESTS TO THE SATISFACTION OF AT&T.
8. THE CONTRACTOR SHALL CONTACT AT&T TO REQUEST A FINAL WALK-THROUGH INSPECTION OF THE TELEPHONE DUCT BANK INFRASTRUCTURE WORK.
9. AT&T INSPECTOR SHALL BE NOTIFIED A MINIMUM OF 2 HOURS PRIOR TO THE DELIVERY OF CONCRETE AND SHALL BE PRESENT DURING PLACEMENT.

DUCT BANK GENERAL AND ELECTRICAL NOTES

1. REFER TO CIVIL SHEET 3 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THIS PROJECT.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MANHOLE AND DUCT STRUCTURE FACILITIES AS ESTABLISHED BY ONCOR ELECTRIC DELIVERY, LATEST EDITION, AND ANY AND ALL APPLICABLE SPECIFICATIONS AND REQUIREMENTS BY THE TOWN OF ADDISON. ONCOR SPECIFICATIONS INCLUDE THE FOLLOWING: DDS-4 SPECIFICATIONS FOR ELECTRICAL UNDERGROUND DISTRIBUTION SYSTEMS FROM PADMOUNTED TRANSFORMATION, SECONDARY SERVICE ACCOUNTS, MMSD SPECIFICATIONS FOR MANHOLE AND DUCT STRUCTURE FACILITIES, AND ONCOR UNDERGROUND DISTRIBUTION CONSTRUCTION STANDARD DRAWINGS 205-460, 205-465, 205-470, 205-475, 205-480, 205-485, AND 205-490. THE ONCOR STANDARD DRAWINGS SHALL TAKE PRECEDENCE OVER THE OMISSION OF OR CONFLICT WITH INFORMATION IN THE DDS-4 OR MMSD SHEETS.
3. PRIOR TO COMMENCING CONSTRUCTION, THE TOWN OF ADDISON, THE CONSULTING ENGINEERS, THE SUCCESSFUL CONTRACTOR, UTILITY COMPANIES, AND ANY OTHER AFFECTED PARTIES, SHALL CONVENE FOR A PRE-CONSTRUCTION CONFERENCE AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION. THE APPLICABLE ONCOR STANDARD DRAWINGS, MMSD-S SHEETS, AND DDS-4 SHEETS SHALL BE PROVIDED TO THE CONTRACTOR AT THE PRE-CONSTRUCTION CONFERENCE BY THE ONCOR REPRESENTATIVE.
4. THE CONTRACTOR SHALL OBTAIN A RIGHT-OF-WAY PERMIT FROM THE TOWN OF ADDISON PRIOR TO WORKING WITHIN THE PUBLIC RIGHT-OF-WAY.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ANY PUBLIC UTILITY COMPANIES FOR LOCATION OF EXISTING FACILITIES IN OR NEAR THE WORK AREAS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:  
TOWN OF ADDISON (WATER, SEWER, SIGNALS), AT&T (SOUTHWESTERN BELL), ONCOR ELECTRIC DELIVERY, ATMOS ENERGY (GAS), VERIZON / MCI, TIME-WARNER CABLE
6. THE CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER (SIX SETS EACH), FOR APPROVAL OF ALL MATERIALS TO BE ADDED TO THE PUBLIC INFRASTRUCTURE, PRIOR TO INCORPORATING MATERIALS INTO THE JOB.
7. THE CONTRACTOR SHALL PROVIDE A MAINTENANCE BOND FOR PUBLIC INFRASTRUCTURE WORK IN THE FOLLOWING AMOUNTS:  
• 100% FOR VALUATIONS LESS THAN OR EQUAL TO \$5,000.  
• \$5,000 FOR VALUATION GREATER THAN \$5,000, AND LESS THAN \$50,000.  
• 10% FOR VALUATIONS GREATER THAN \$50,000.  
BONDS SHALL BE FOR A PERIOD OF TWO YEARS BEGINNING WITH THE DATE OF FINAL ACCEPTANCE BY THE TOWN.
8. THE CONTRACTOR SHALL FULLY COMPLY WITH AND SUPPLEMENT AS NECESSARY, THE CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT.
9. THE TOWN OF ADDISON PUBLIC WORKS DEPARTMENT WILL APPROVE AND/OR DETERMINE THE TRAFFIC CONTROL PLAN AND WORKING HOURS. CONTACT THE ASSISTANT CITY ENGINEER AT (972) 450-2887 OR THE PUBLIC WORKS INSPECTOR AT (972) 450-2871.
10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, AND SUPPLEMENT AS NECESSARY, THE TRAFFIC CONTROL MEASURES ON THIS PROJECT, INCLUDING PROVIDING ADEQUATE FLAGMEN, SIGNAGE, STRIPING, AND WARNING DEVICES, ETC. DURING CONSTRUCTION IN ACCORDANCE WITH THE TEXAS MANUAL OF UNIFORM CONTROL DEVICES. THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION DURING WORKING HOURS OR PROVIDE AN ALL-WEATHER DETOUR AROUND THE CONSTRUCTION SITE, INCLUDING PUBLIC NOTIFICATION AND SIGNING.
11. TEMPORARY OR PERMANENT BARRICADES SHALL REMAIN AT ALL POINTS OF INGRESS OR EGRESS TO PREVENT PUBLIC USE UNTIL THE WORK RECEIVES FINAL ACCEPTANCE.
12. THE CONTRACTOR SHALL COVER ALL OPEN EXCAVATIONS WITH ANCHORED STEEL PLATING DURING NON-WORKING HOURS, ALONG EXISTING ROADWAYS AND TRAFFIC AREAS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE AT ALL TIMES DURING CONSTRUCTION, INCLUDING PROVIDING ALL TEMPORARY STRUCTURES OR IMPROVEMENTS AS NECESSARY FOR THE SAFETY OF THE PUBLIC.
14. THE TOWN OF ADDISON WILL PROVIDE A GEOTECHNICAL LABORATORY TO PERFORM APPROPRIATE TESTING DURING CONSTRUCTION ACTIVITIES. ANY TEST THAT FAILS TO MEET ONCOR AND/OR TOWN OF ADDISON REQUIREMENTS SHALL BE RETESTED AT THE CONTRACTOR'S EXPENSE.
15. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, FENCES, TREES, SHRUBS, UTILITY SERVICES, BUILDING FOUNDATIONS AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW THE GROUND, THE COST OF WHICH SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
16. ALL APPLICABLE CODES AND ORDINANCES SHALL BE FOLLOWED IN THE DESIGN AND CONSTRUCTION OF THE MANHOLE AND CONDUIT LINE SYSTEM. INCLUDED, BUT NOT LIMITED TO, ARE THE FOLLOWING:  
A. LOCAL TOWN OF ADDISON BUILDING CODES  
B. THE NATIONAL ELECTRIC SAFETY CODE (NEC) (NESC)  
C. THE CONTRACTOR SHALL BE FAMILIAR WITH AND SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THESE SPECIFICATIONS AND WITH OSHA REQUIREMENTS IF THERE ARE ANY CONFLICTS OR OMISSIONS. THE OSHA REQUIREMENTS SHALL BE MET. ANY CONFLICT OR OMISSION SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY OF COMPLYING WITH OSHA REQUIREMENTS.  
D. LOCAL TOWN OF ADDISON LOCATION AND COORDINATION POLICY (IF APPLICABLE).  
E. THE AMERICAN CONCRETE INSTITUTE (ACI).  
F. THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).  
G. TEXAS STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION - UTILITY ACCOMMODATION POLICY.  
H. LOCAL CITY, STATE AND FEDERAL ENVIRONMENTAL REGULATIONS.
17. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES, WHETHER INDICATED ON THE DESIGN DRAWINGS OR DISCOVERED DURING THE WORK. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ONCOR'S AUTHORIZED REPRESENTATIVE WHEN ANY UTILITY NOT PREVIOUSLY INDICATED OR INACCURATELY INDICATED ON THE DESIGN DRAWING IS DISCOVERED.
18. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND IMPLEMENTING A TRENCH SAFETY PROGRAM. THREE COPIES OF A TRENCH SAFETY SPECIFICATION (PREPARED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS) SHALL BE SUPPLIED TO ONCOR ELECTRIC DELIVERY BEFORE CONSTRUCTION BEGINS.
19. THE CONTRACTOR SHALL SUPPLY ALL MATERIALS FOR THIS JOB INCLUDING MANHOLES, NECKS, FRAMES AND COVERS, CON-SEAL GROUND RODS, PVC CONDUIT, PVC BENDS, PVC COUPLINGS, TIE-WRAPPS, CONDUIT SPACERS, PVC ADHESIVE CONCRETE, SELECT BACKFILL, PULL ROPES, PRE-CAST MITCHELL PADS, ELECTRONIC CABLE MARKERS, MANHOLE LADDER RUNGS, ETC., PER ONCOR ELECTRIC DELIVERY SPECIFICATIONS UNLESS OTHERWISE SPECIFIED, IN WRITING.
20. CONCRETE ENCASED DUCT STRUCTURE INSTALLATION SHALL BE PERFORMED AS FOLLOWS:  
A. ALL CONDUITS SHALL BE CONCRETE ENCASED WITH A MINIMUM OF 3" OF CONCRETE COVER DEPENDING ON LOCATION SITE. REFER TO CONSTRUCTION DRAWINGS FOR DUCT SECTION. CONCRETE ENCASEMENT SHALL HAVE A PATTERN FINISH.  
B. CONCRETE SHOULD BE 5 SACK, PORTLAND TYPE 1 CEMENT, 3/4" MAXIMUM SIZE AGGREGATE, 3000 PSI AT 28 DAYS. THE SLUMP OF THE CONCRETE MAY BE INCREASED BY THE CONTRACTOR WITH THE APPROVAL OF THE ONCOR INSPECTOR IN ORDER TO FACILITATE A WETTER MIX TO INSURE TOTAL ENCASEMENT OF THE DUCT. HOWEVER, THE SLUMP SHOULD NOT BE INCREASED TO THE POINT WHERE THE ULTIMATE STRENGTH OF THE CONCRETE IS COMPROMISED.  
C. ALL CONCRETE SHALL BE INSTALLED BY THE USE OF A HOPPER, TRIMMIE, CHUTE, OR PUMP TRUCK UNLESS OTHERWISE SPECIFIED BY ONCOR ELECTRIC DELIVERY. INSPECTOR AT 90 DEGREES CENTIGRADE RATED OR GREATER FRONT-END LOADER OR ANY OTHER SIMILAR TYPE OF MACHINERY.  
D. THE DUCT LINE SHALL BE SECURED TO EARTH AT EACH SPACER LOCATION PRIOR TO POURING CONCRETE TO PREVENT FLOATING OR RACKING OF THE DUCT DURING PLACEMENT OF THE CONCRETE.  
E. CONDUIT, BENDS, ELBOWS AND COUPLINGS SHALL BE PVC CONDUIT, MINIMUM 6" TYPE DR-10-DB-80ASTM-1-12, AND 90 DEGREES CENTIGRADE RATED OR GREATER UNLESS OTHERWISE SPECIFIED. ALL PVC 6" BENDS AND ELBOWS SHALL HAVE A 36" RADIUS.  
F. SPACERS SHALL BE CARLON #289RLN (BASE) AND #289 RLN (INTERMEDIATE), SPACED AT 5 FOOT INTERVALS (MAX). SPACERS WILL BE REQUIRED AND TIED TOGETHER WITH NON-METALLIC TIE-WRAPPS. SPACERS SHALL ALSO BE USED TO "HOLD-DOWN" THE TOP ROW OF DUCTS.  
G. FINISH BACKFILL SHOULD BE PLACED IN LEVEL, UNIFORM LIFTS, WITH EACH LIFT COMPACTED TO THE MINIMUM DRY DENSITY WITHIN THE COMPACTION SOIL MOISTURE RANGES RECOMMENDED. THE LOOSE LIFT THICKNESS SHOULD NOT EXCEED SIX (6) INCHES. EACH LAYER SHOULD BE PROPERLY PLACED, MIXED, SPREAD, AND COMPACTED TO BETWEEN NINETY-FIVE (95) AND ONE HUNDRED (100) PERCENT OF STANDARD PROCTOR DENSITY AT 0% TO 3% OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 698.  
H. WHEN COMPLETE, EACH CONDUIT INSTALLED WILL BE CHECKED BY PULLING BOTH A MANDREL AND A SWAB THROUGH THE ENTIRE LENGTH OF CONDUIT.  
I. DUCT SPACERS ARE TO PROVIDE 3 INCHES OF VERTICAL AND HORIZONTAL SEPARATION BETWEEN CONDUITS.  
J. RED POWDER CONCRETE DYE IS TO BE PLACED ON THE DUCT ENCASEMENT CAP IMMEDIATELY AFTER THE CONCRETE POUR HAS TAKEN PLACE TO AID WITH FUTURE LOCATION OF PRIMARY DUCT.  
K. CONDUITS FOR INCOMPLETE DUCT LINES (STUBS) ARE TO REMAIN EXPOSED FROM THE ENCASEMENT FOR FUTURE RETRIEVAL. BE CAPPED WATER-TIGHT AND HAVE AN ELECTRONIC MARKER INSTALLED.  
L. EACH CONDUIT OF AN ENCASED DUCT IS TO HAVE A 8000 POUND PULL TAPE INSTALLED FOR FUTURE CABLE PULLING.
21. CONCRETE MANHOLE INSTALLATION SHALL BE PERFORMED AS FOLLOWS:  
A. PRECAST TYPE, UNLESS OTHERWISE NOTED, SHOULD BE SUPPLIED BY BROOKS/OLD CASTLE OR OTHER APPROVED SUPPLIER AND BE OCTAGONAL SHAPE, 3-SECTIONS 15,000 LBS./SECTION UNLESS OTHERWISE SPECIFIED.  
B. 8 INCHES MINIMUM PEA GRAVEL OF CUSHION SHALL BE INSTALLED IN THE BOTTOM OF THE EXCAVATION AREA PRIOR TO THE MANHOLE INSTALLATION. SAND BASE MAY BE USED WITH PRIOR ONCOR APPROVAL.  
C. SELECT BACKFILL SHOULD BE INSTALLED AROUND ALL MANHOLES AND COMPACTED TO 95% MINIMUM. FLOWABLE MATERIAL MAY BE USED AS SELECT BACKFILL WHEN REQUESTED.  
D. CONTRACTOR SHALL INSTALL THE FRAME/COVER AND NECK. ONCOR ELECTRIC DELIVERY CONSTRUCTION PLANS SHOW THE APPROXIMATE EXCAVATION ELEVATION. HOWEVER IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL THE NECESSARY AMOUNT OF NECK TO BRING THE TOP OF THE COVER 2" ABOVE FINISHED GRADE (OR FLUSH WITH STREET GRADE WHEN COVER IS IN STREET). SAW CUTTING OR GROUT-FILL MAY BE REQUIRED TO OBTAIN THE APPROPRIATE ENTRANCE ELEVATION.  
E. THE CONTRACTOR SHALL SUPPLY FOUR (4) 8" X 58" COPPER CLAD GROUND RODS, WEAR TYPE IN EACH MANHOLE. GROUND ROD SHALL BE VERTICALLY DRIVEN INTO UNDISTURBED SOIL. IF ROCK IS ENCOUNTERED, GROUNDING SHALL BE AS DIRECTED BY ONCOR ELECTRIC DELIVERY INSPECTOR.  
F. THE CONTRACTOR SHALL INSTALL A 5' X 5' X 6" CONCRETE PAD AROUND ALL MANHOLE ENTRANCES IN ALL NON-PAVED AREAS. SEE STANDARD DETAIL DRAWINGS FOR REINFORCED STEEL REQUIREMENTS.  
G. ALL JOINTS BETWEEN MANHOLE SECTIONS SHALL BE MADE WATER-TIGHT AT THE TIME OF INITIAL INSTALLATION.  
H. DO NOT REMOVE THE "KNOCK OUT" MEMBRANES OF ANY UNUSED TERMINATOR POSITION. DUCT PLUGS SHOULD BE INSTALLED IN ALL CONDUITS THAT ARE UNOCCUPIED BY CABLE.  
I. FINAL SLOPE OF TOP OF MANHOLE SHALL BE 2" MINIMUM TO DRAIN WATER FROM TOP OF MANHOLE.  
J. ANY MANHOLE WITH GREATER THAN 4" NECK SHALL HAVE LADDER RUNGS FIELD INSTALLED PER ONCOR STANDARD DRAWINGS 205-480. OLD CASTLE IS AN APPROVED SUPPLIER OF LADDER RUNGS.  
22. THE ONCOR ELECTRIC DELIVERY INSPECTOR IS TO INSPECT ALL MANHOLE INSTALLATIONS PRIOR TO THE PLACING OF BACKFILL AND ALL CONDUIT INSTALLATIONS PRIOR TO THE PLACEMENT OF CONCRETE.  
23. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE HIS WORK WITH TRENCHING OPERATIONS FOR OTHER UTILITIES INCLUDING GAS AND TELECOMMUNICATION SERVICES, LANDSCAPE IRRIGATION CONDUITS, LIGHTING CONDUITS, STREETSCAPE IMPROVEMENTS, ETC.  
24. CONCRETE SHALL NOT BE PLACED WHEN THE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT AND FALLING, BUT MAY BE PLACED WHEN THE TEMPERATURE IS ABOVE 35 DEGREES FAHRENHEIT AND RISING. THE TEMPERATURE READING SHALL BE TAKEN IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT.  
25. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR REPAIRS TO ALL EXISTING FACILITIES DAMAGED BY HIS ACTIVITIES.  
26. THE CONTRACTOR SHALL PROVIDE VERIFICATION OF COMPLETION AND COMPLIANCE OF ANY AND ALL REQUIRED TESTS TO THE SATISFACTION OF ONCOR ELECTRIC DELIVERY.  
27. THE CONTRACTOR SHALL CONTACT ONCOR ELECTRIC DELIVERY TO REQUEST A FINAL WALK-THROUGH INSPECTION OF THE ELECTRIC DUCT BANK INFRASTRUCTURE WORK.  
28. ANY ADJACENT PROPERTIES AFFECTED BY THE CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.  
29. ONCOR ELECTRIC DELIVERY INSPECTOR SHALL BE NOTIFIED A MINIMUM OF 2 HOURS PRIOR TO THE DELIVERY OF CONCRETE AND SHALL BE PRESENT DURING PLACEMENT.  
30. CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE APPROPRIATE ONCOR ELECTRIC DELIVERY AUTHORIZED PERSONNEL PRIOR TO ANY MODIFICATION TO THE ORIGINAL DESIGN DRAWINGS THAT WILL CHANGE THE NUMBER OF BENDS OR ADD 10 PERCENT OR MORE TO THE OVERALL CONDUIT LENGTH FOUND ON THE ORIGINAL DESIGN PLAN. THIS WRITTEN REQUEST MUST BE PROVIDED PRIOR TO IMPLEMENTATION OF CHANGES.  
31. EQUIPMENT PADS SHALL BE INSTALLED PER DDS-4 SPECIFICATIONS. PIERS AND BEAMS ARE REQUIRED ON ALL EQUIPMENT PADS UNLESS WAIVED BY COMPANY INSPECTOR. IF REQUIRED, STABILIZATION METHODS WILL BE DETERMINED BY THE COMPANY INSPECTOR. THE DEPTH SHALL EXTEND TO ROCK OR A CHANGE IN SOIL CONDITIONS SUFFICIENT TO BEAR THE LOAD OF PAD AND TRANSFORMER TO PREVENT SETTLEMENT DUE TO UNDERCUTTING FOR CONDUIT BEND INSTALLATION OR WASHING DUE TO DRAINAGE.



NO.	REVISION	BY	DATE

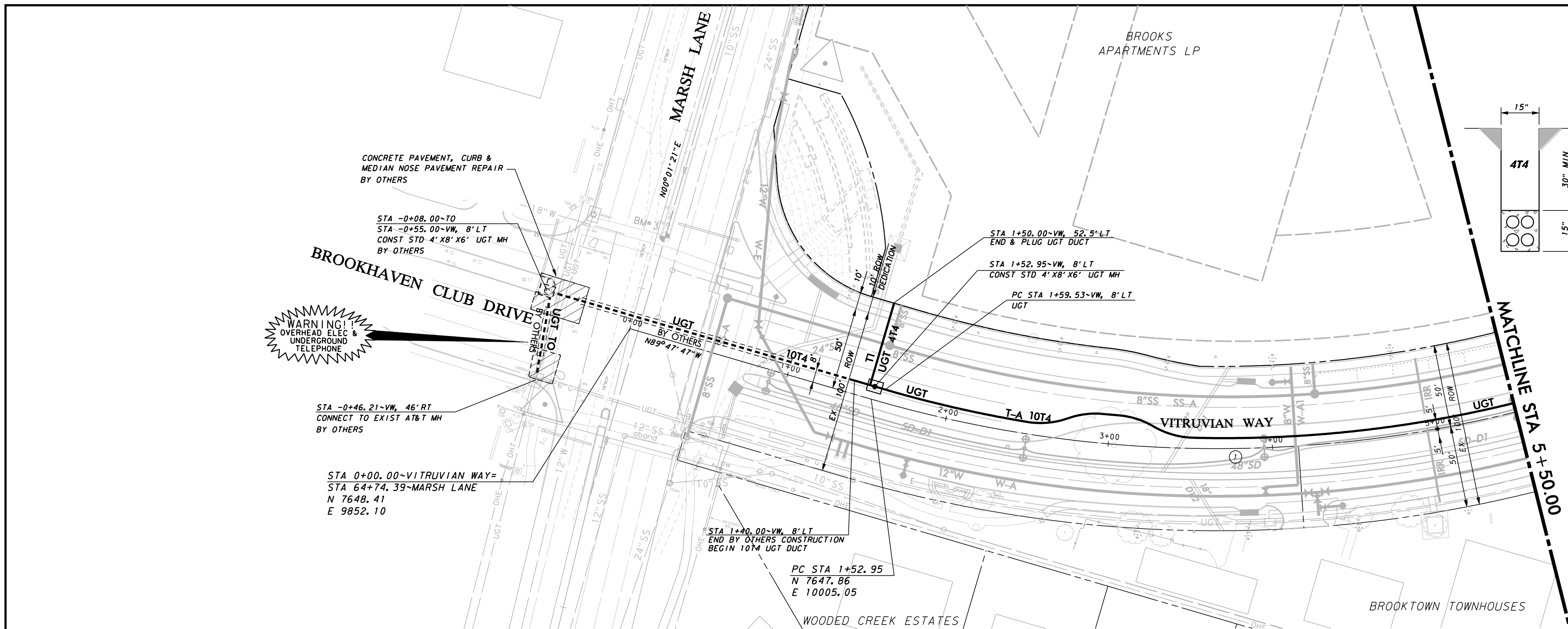
**Addison!**  
**TOWN OF ADDISON**  
**DALLAS COUNTY, TEXAS**

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
**VITRUVIAN WAY & PONTE AVENUE**

**OVERALL DUCT BANK LAYOUT & NOTES**

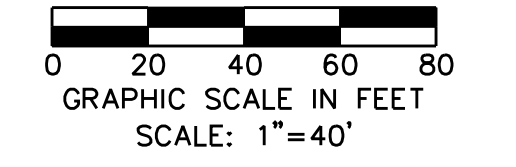
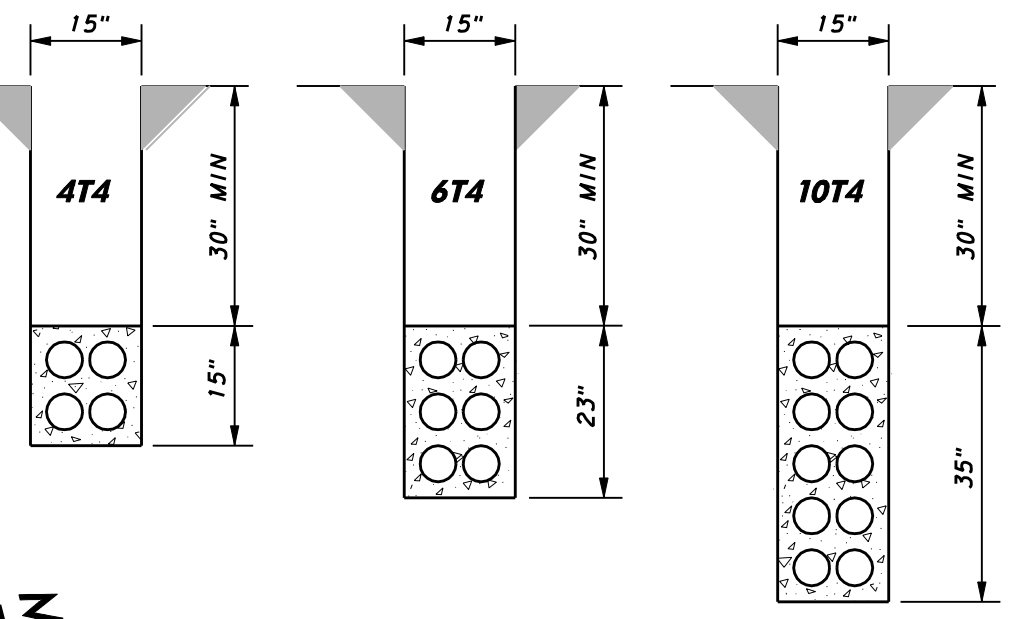
**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
Southlake, TX 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
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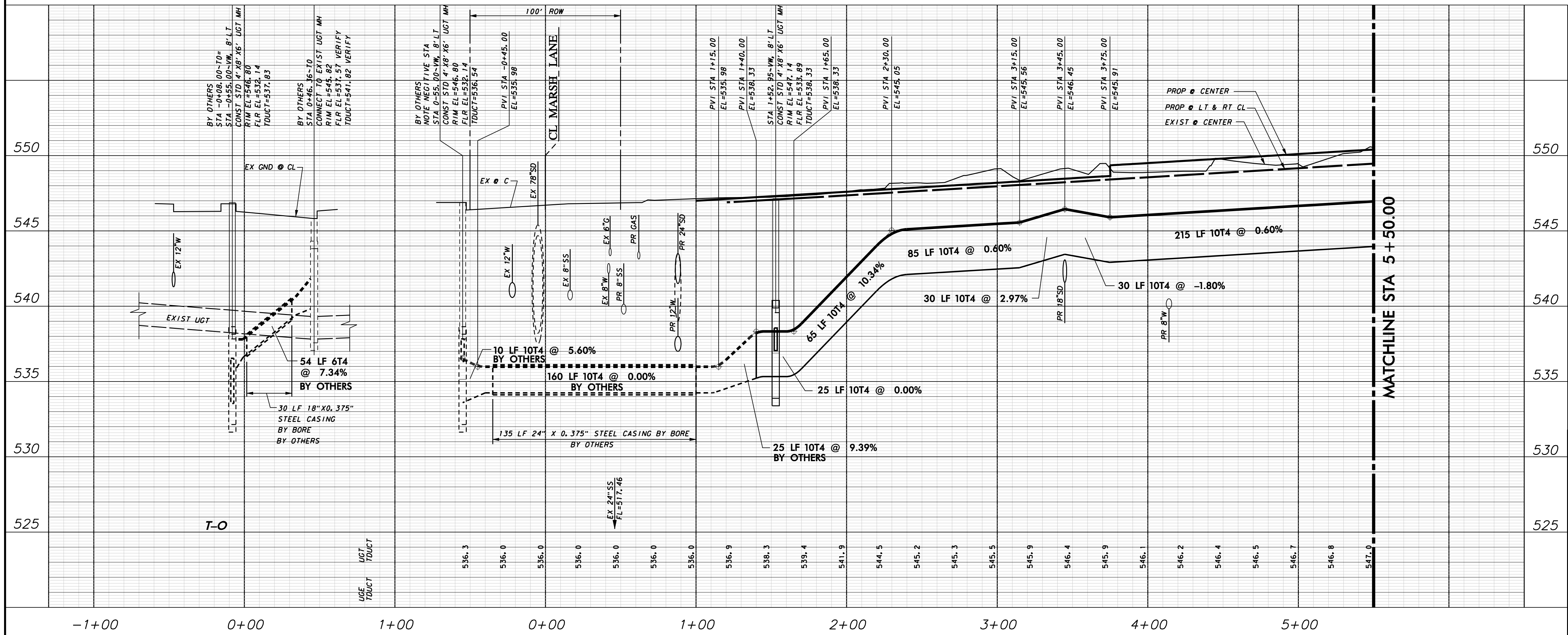


VITRUVIAN WAY CENTER LINE

NO	DELTA	RADIUS	LENGTH
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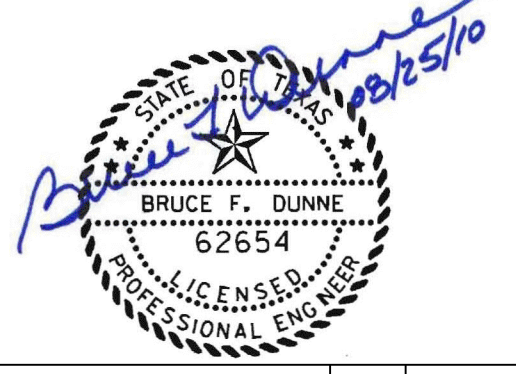
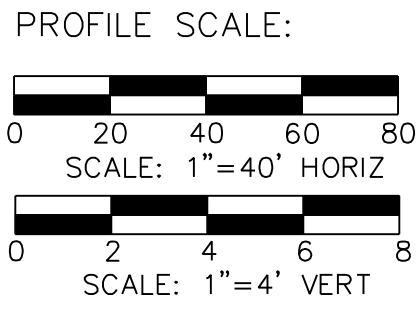


NOTE:  
1. SEE OVERALL DUCT BANK PLAN LAYOUT SHEET FOR UGE AND UGT GENERAL NOTES.



**WARNING**  
CONTRACTOR IS TO CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY LOCATING SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. ICON CONSULTING ENGINEERS, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOR FOR DEPICTING THE EXACT LOCATIONS OF UTILITIES ON THESE DRAWINGS.

BM #1 REF. ELEVATION = 559.47  
SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.  
BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO. \_\_\_\_\_ REVISION \_\_\_\_\_ BY \_\_\_\_\_ DATE \_\_\_\_\_

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

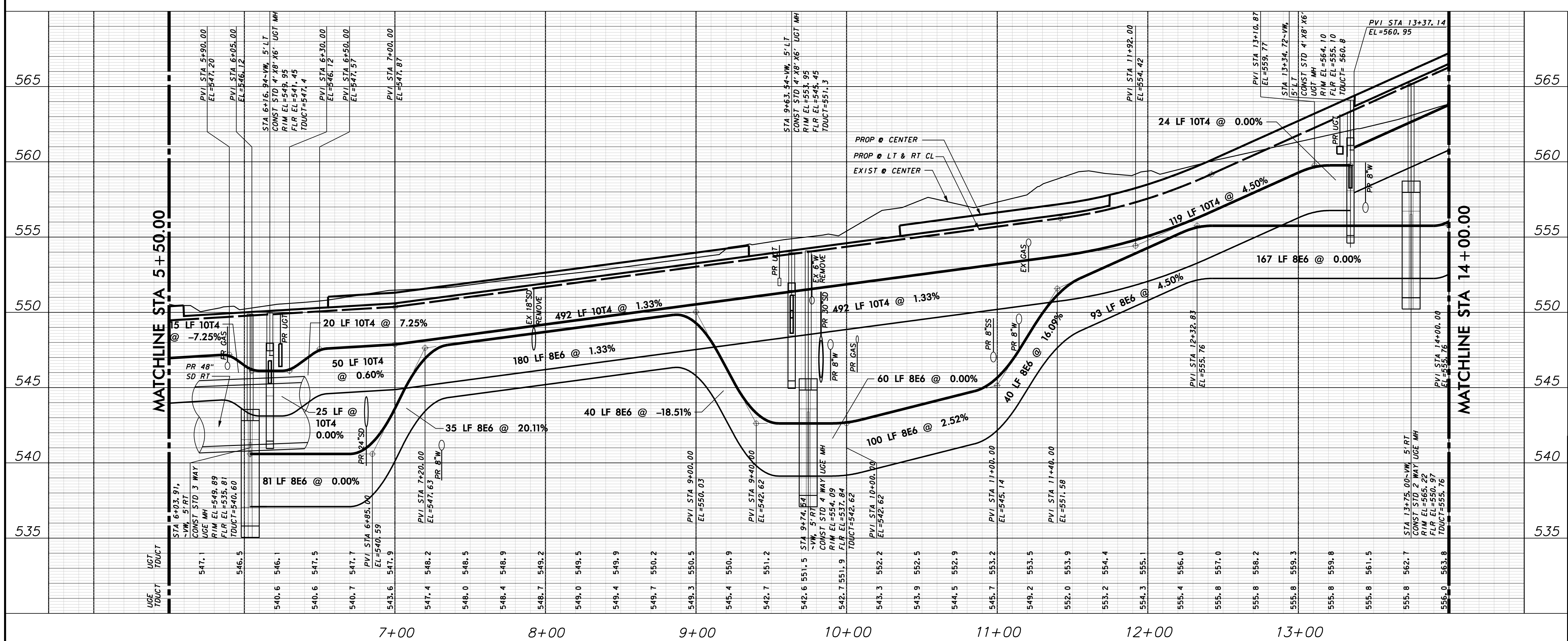
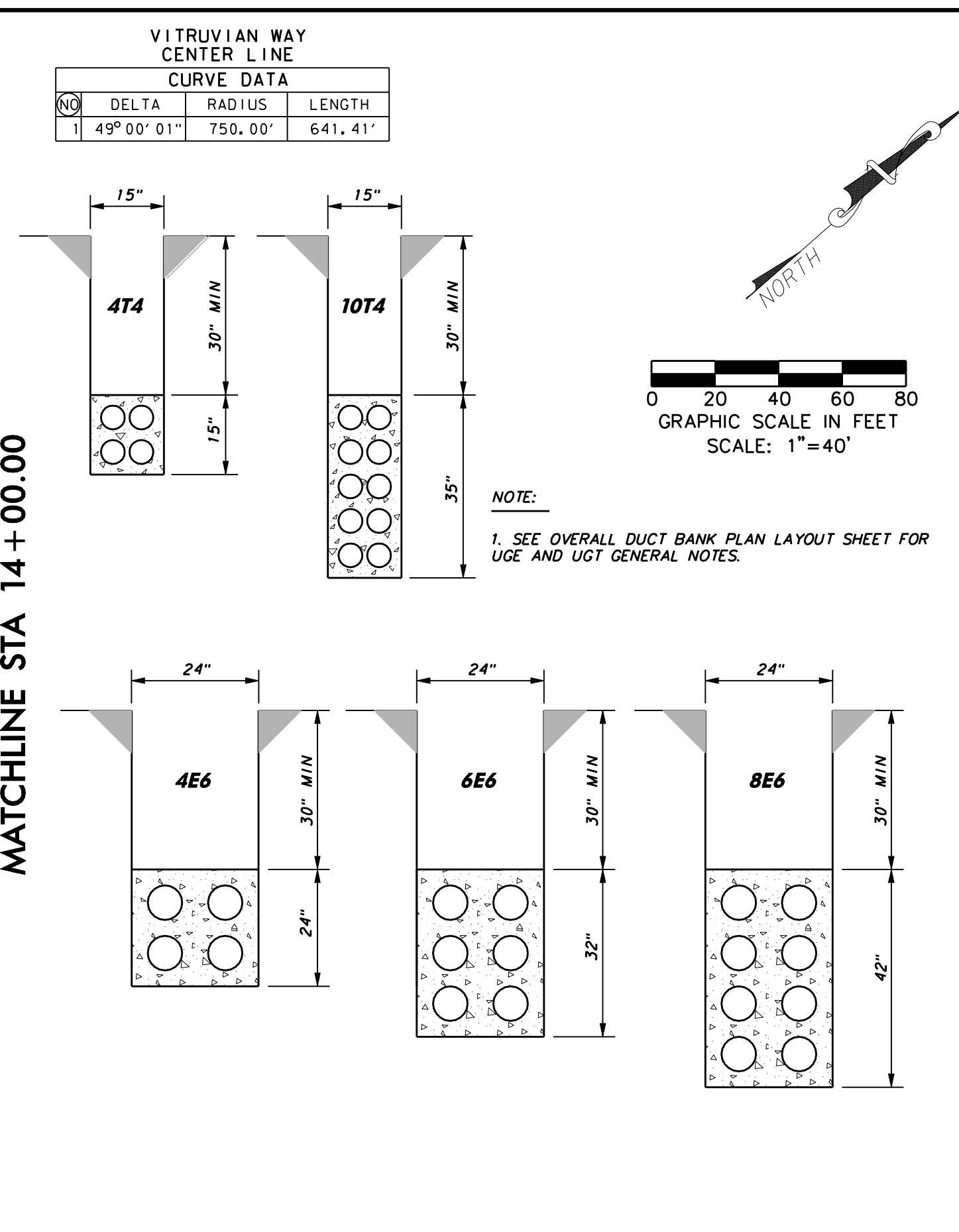
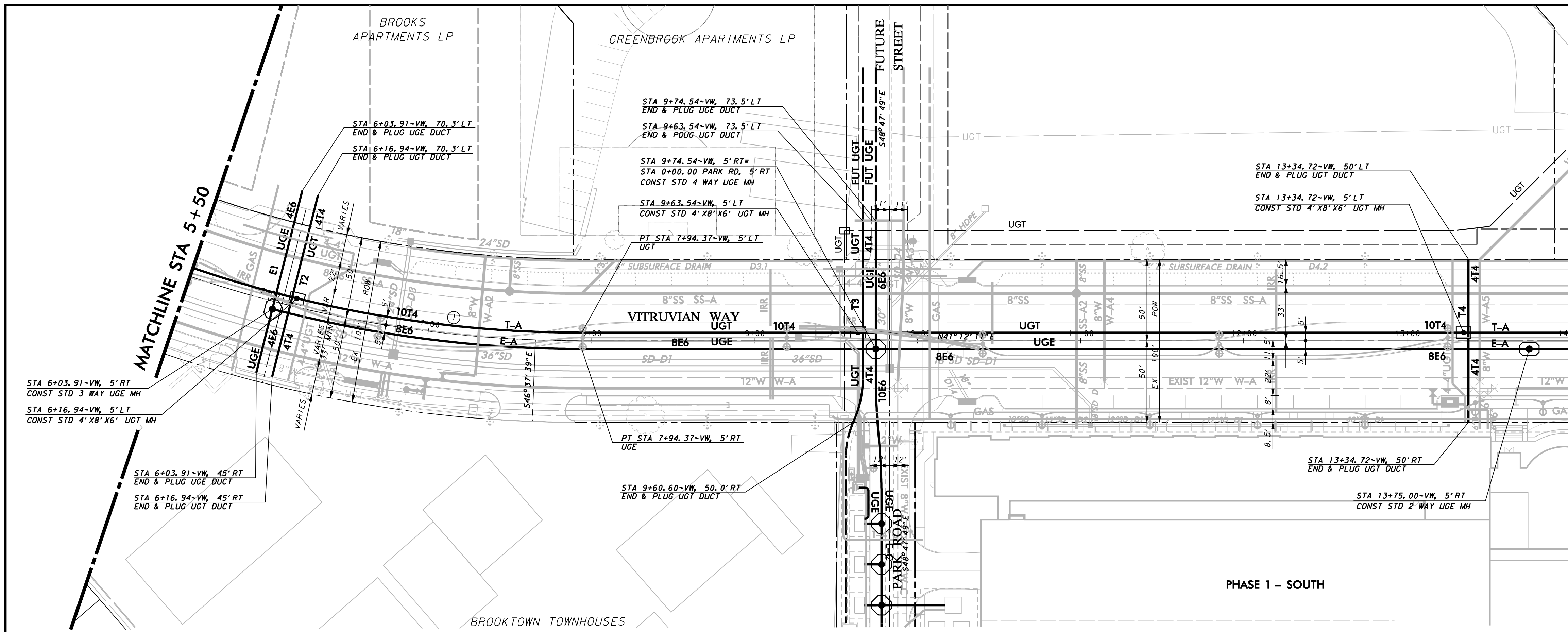
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

DUCT BANK PLAN & PROFILE - VW  
LINE A- STA. 0+00.00 TO 5+50.00

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	74

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.

PROFILE SCALE:  
SCALE: 1"=40' HORIZ  
SCALE: 1"=4' VERT

STATE OF TEXAS  
BRUCE F. DUNNE  
62654  
LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	BY	DATE

**ADDISON!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY & PONTE AVENUE

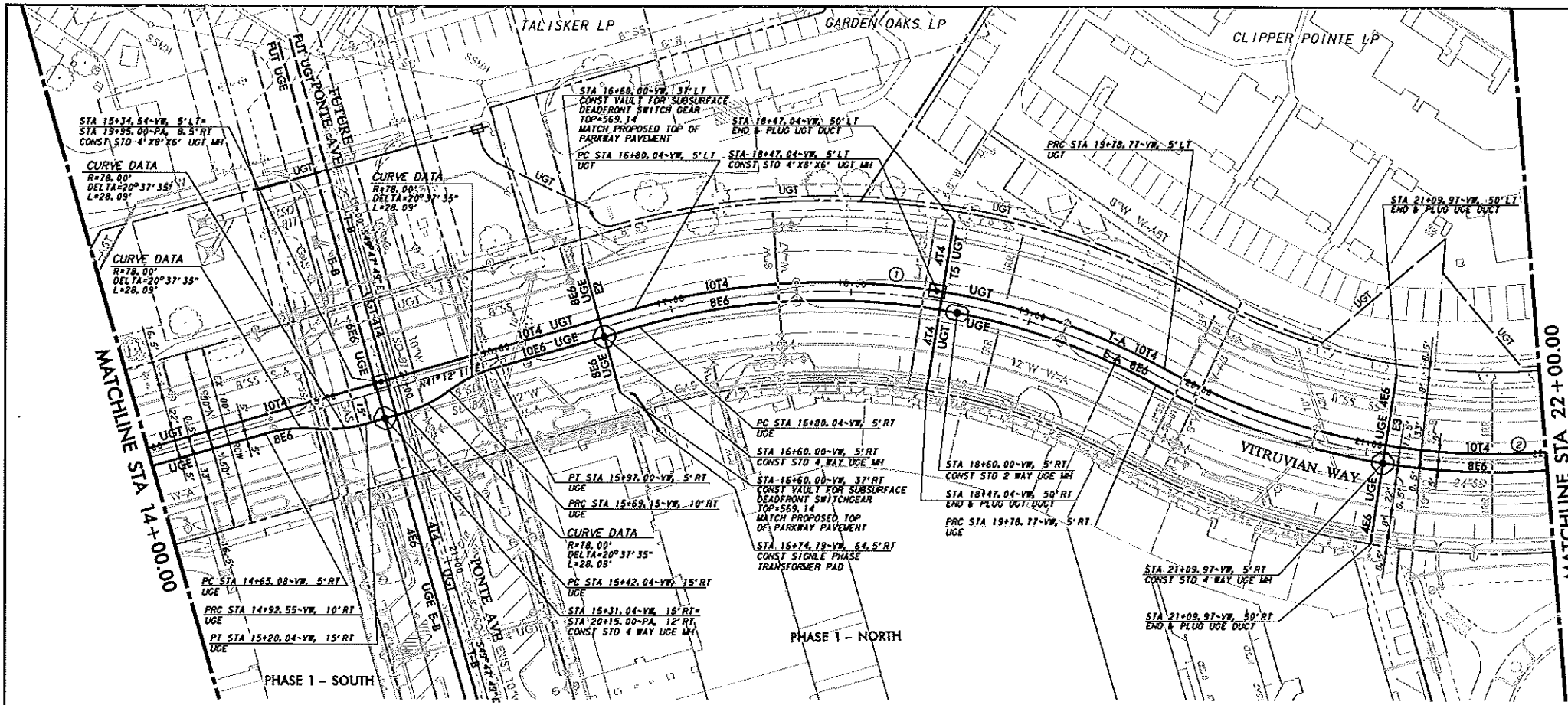
**DUCT BANK PLAN & PROFILE - VW**  
LINE A- STA. 5+50.00 TO 14+50.00

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	75

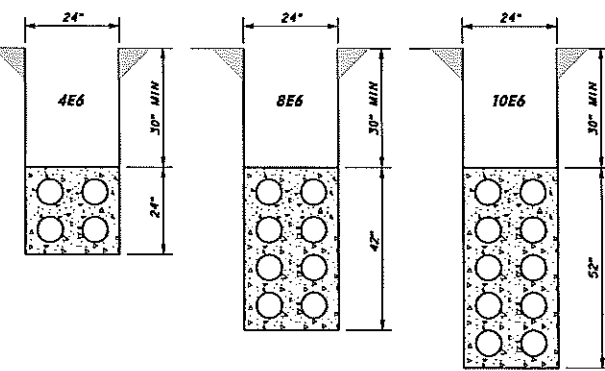
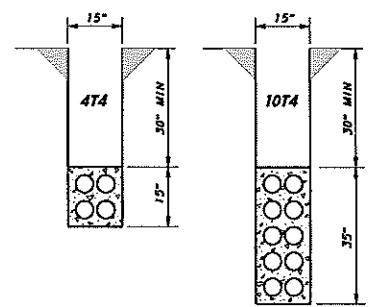
RECORD DRAWINGS 08/25/10

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

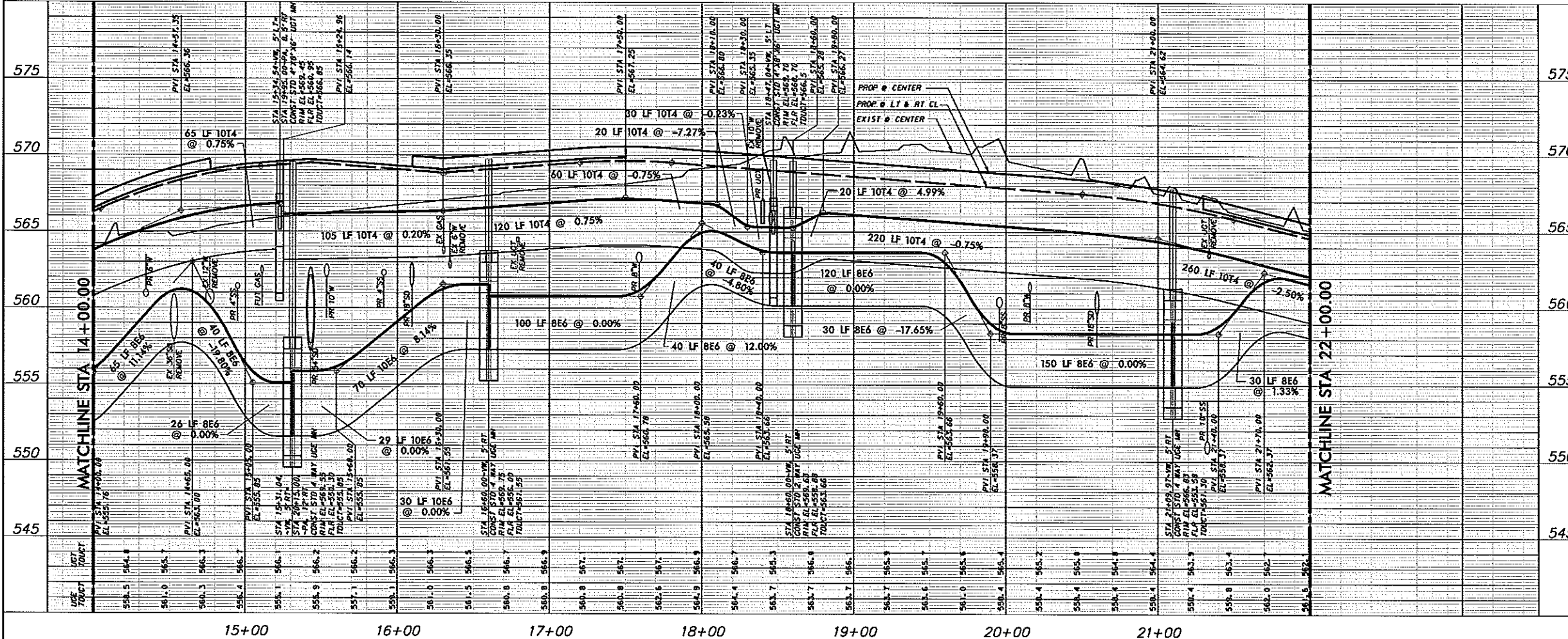
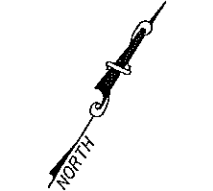


VITRUVIAN WAY CENTER LINE CURVE DATA

NO.	DELTA	RADIUS	LENGTH
1	44°34'23"	384.00'	298.73'
2	59°28'36"	384.00'	398.62'

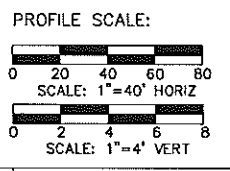


NOTE:  
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SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



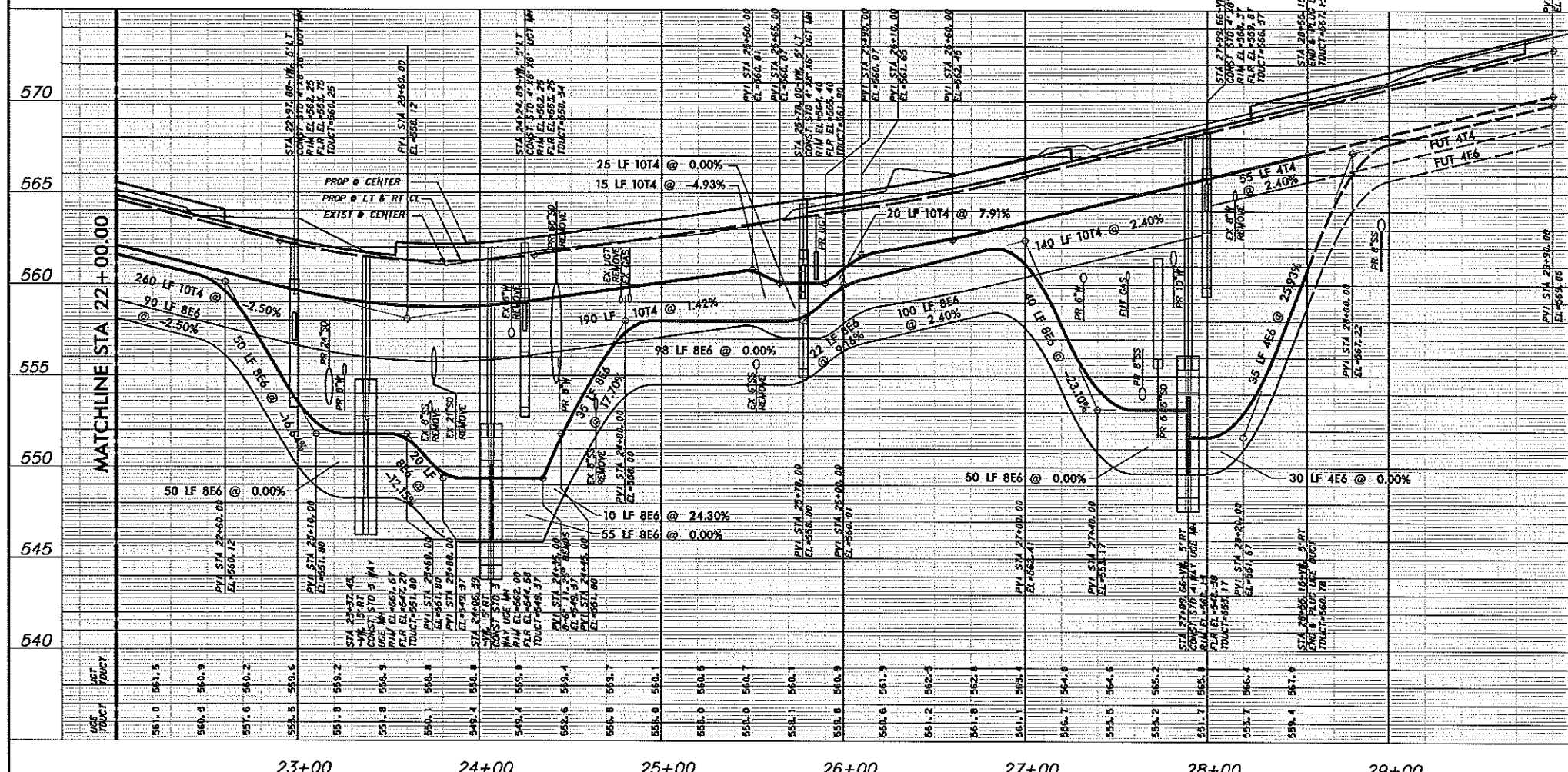
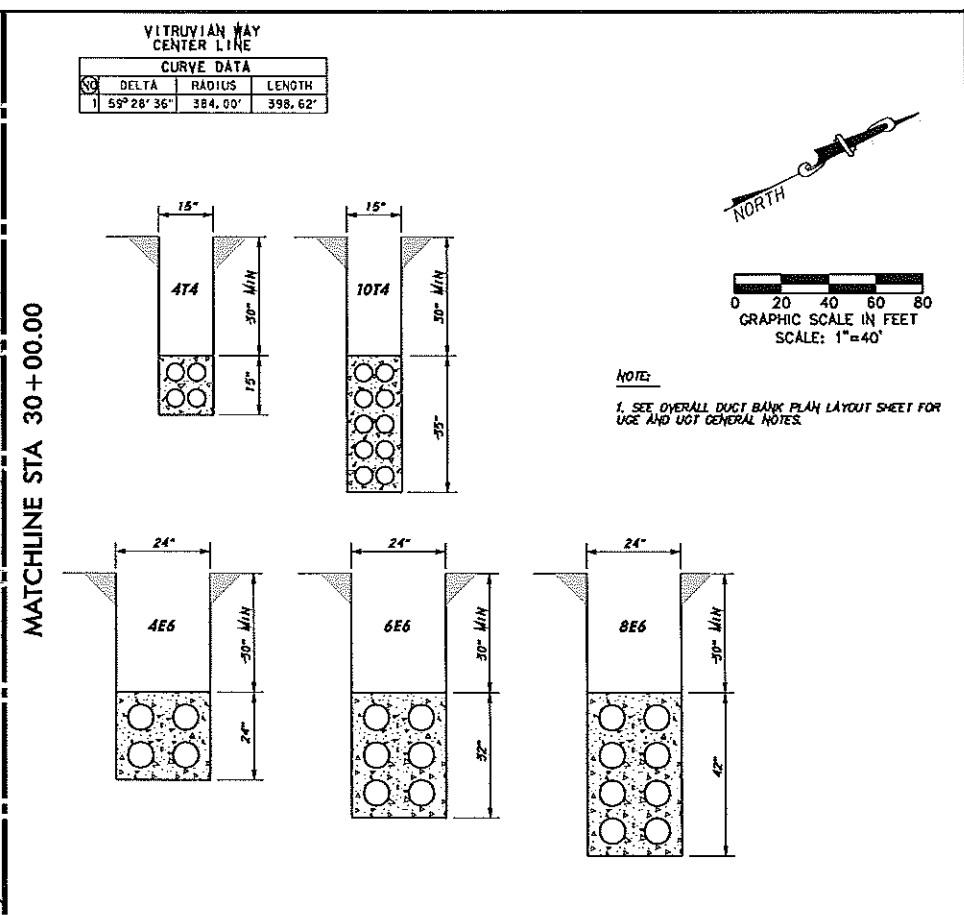
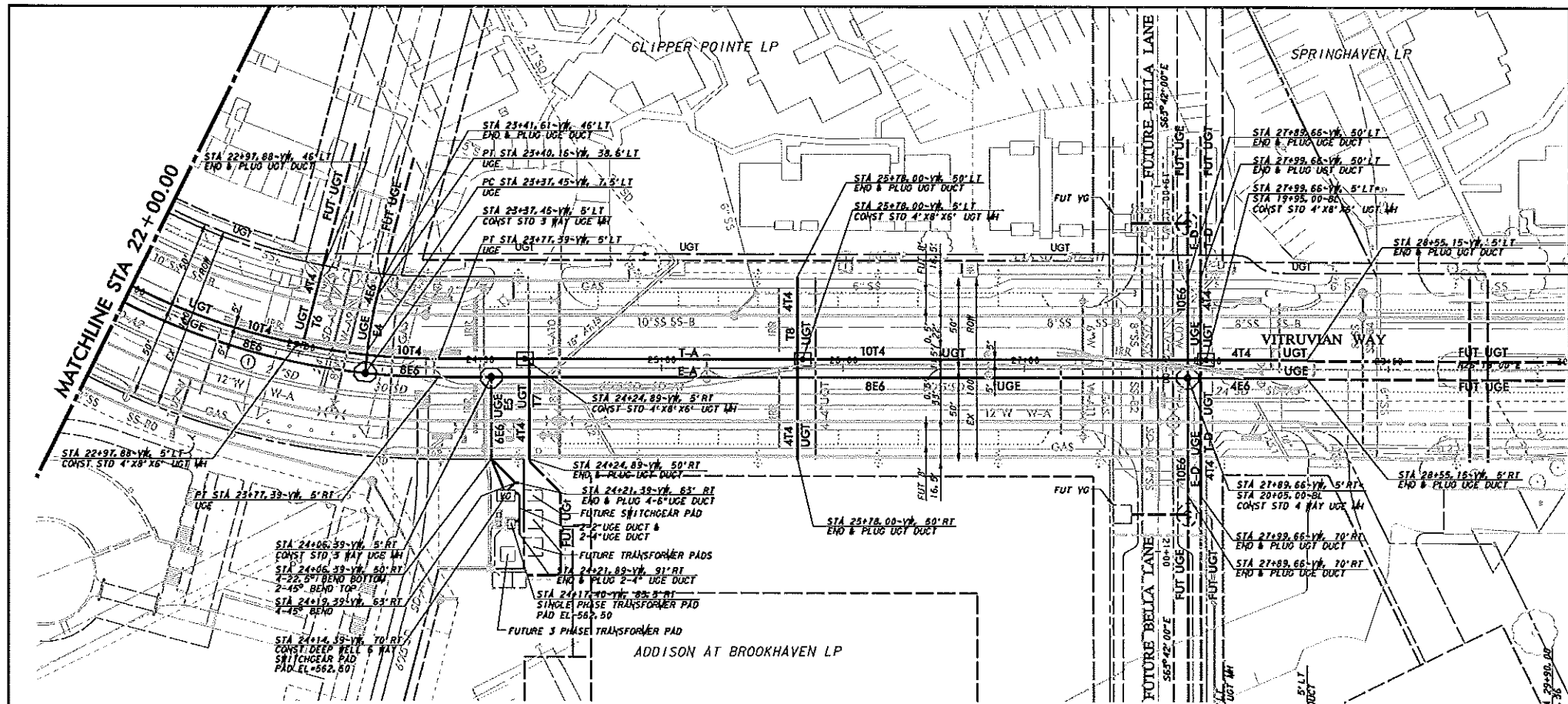
NO.	REVISION	BY	DATE

**TOWN OF ADDISON**  
DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

DUCT BANK PLAN & PROFILE - VW  
LINE A-STA. 14+00.00 TO 22+00.00

<b>Icon Consulting Engineers, Inc.</b>		260 W. Southlake Blvd., Suite 117			
Civil Engineers - Designers - Planners		Southlake, TX 76092 (817) 652-8210			
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	76



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PROFILE SCALE:  
SCALE: 1"=40' HORIZ  
SCALE: 1"=4' VERT

NO.	REVISION	BY	DATE

**TOWN OF ADDISON**  
DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY & PONTE AVENUE

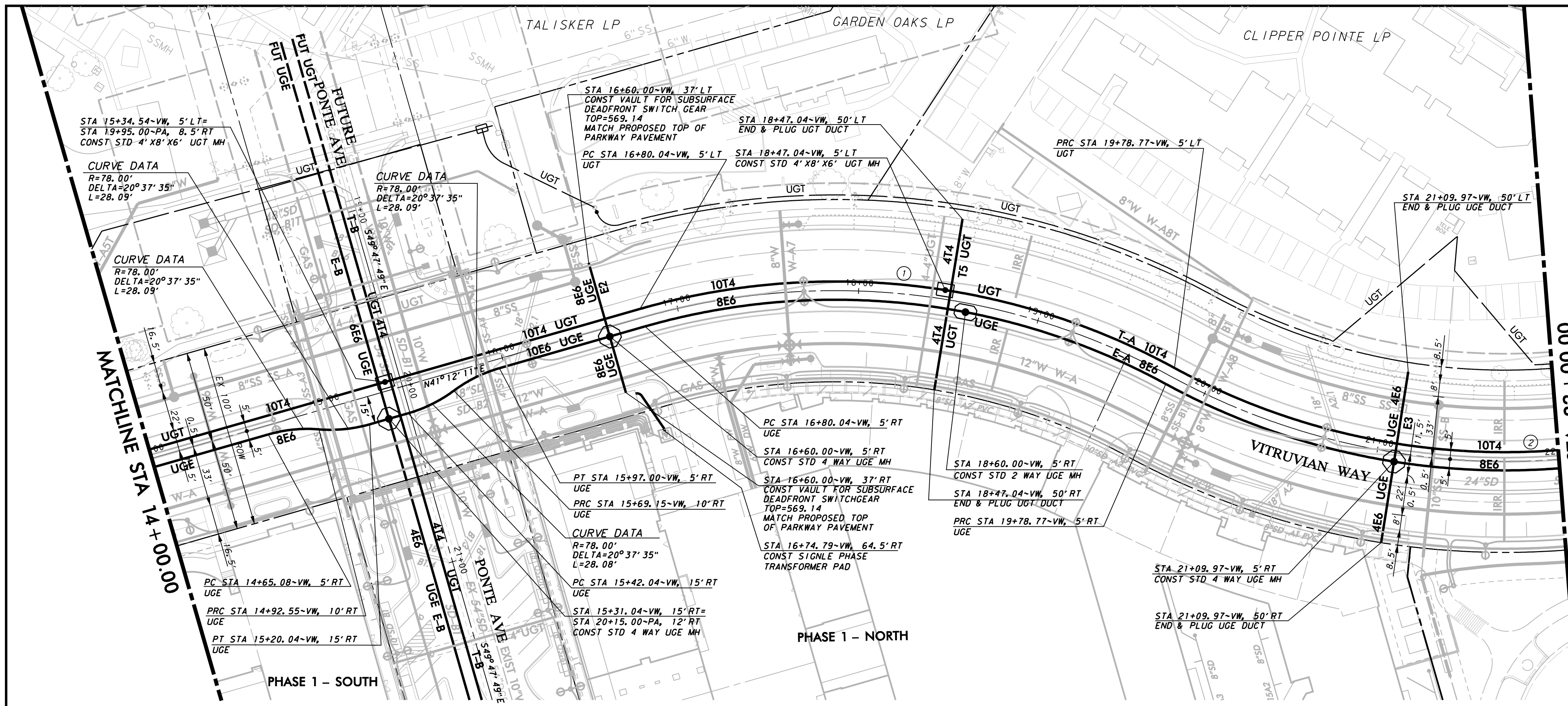
**DUCT BANK PLAN & PROFILE - VW**  
LINE A-STA. 22+00.00 TO 30+00.00

**Icon Consulting Engineers, Inc.** 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 652-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	77

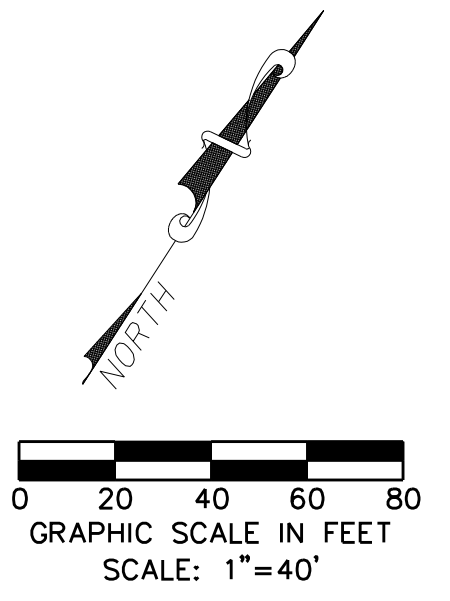
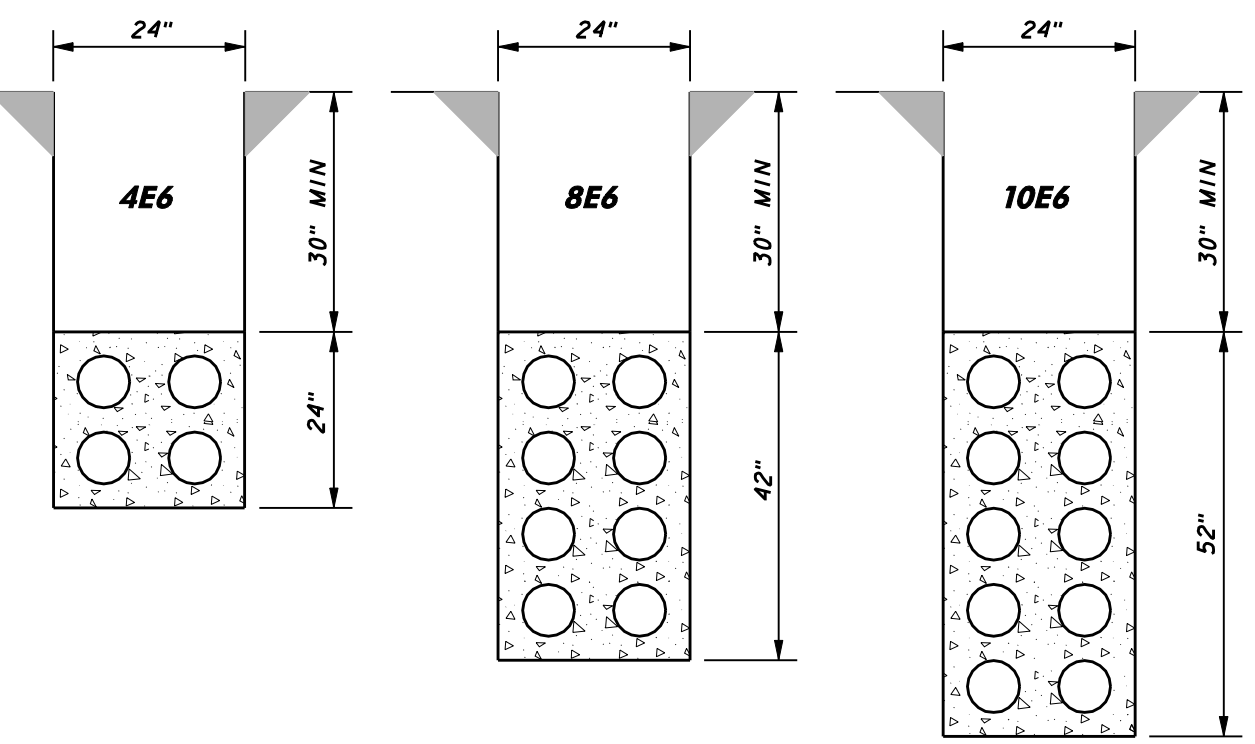
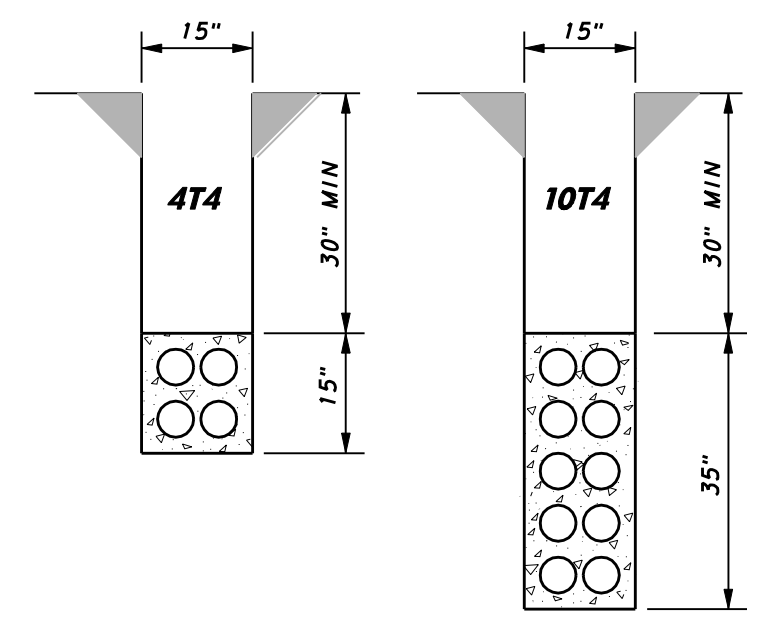
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



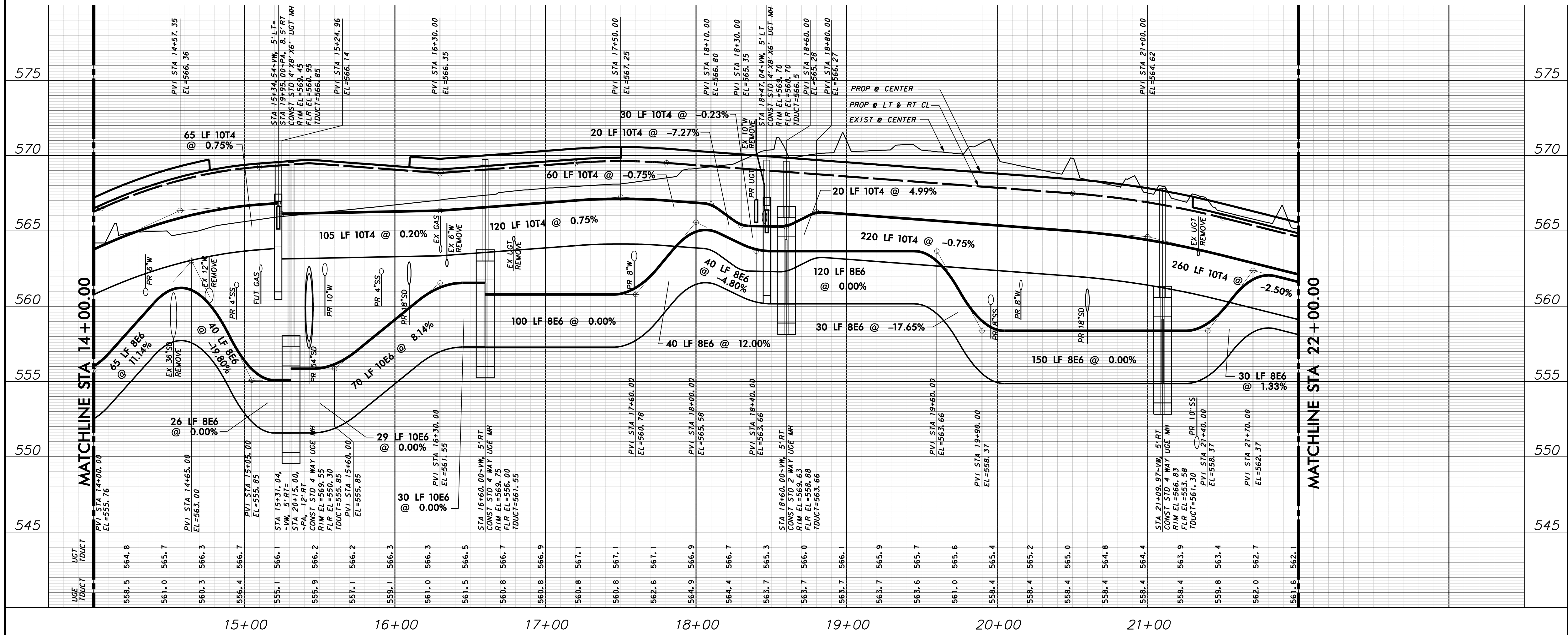


VITRUVIAN WAY CENTER LINE CURVE DATA

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1	44° 34' 23"	384.00'	298.73'
2	59° 28' 36"	384.00'	398.62'

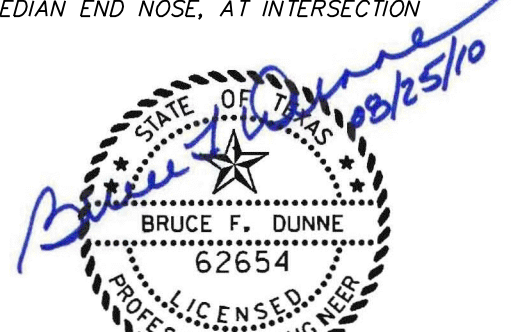


NOTE:  
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**ADDISON** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

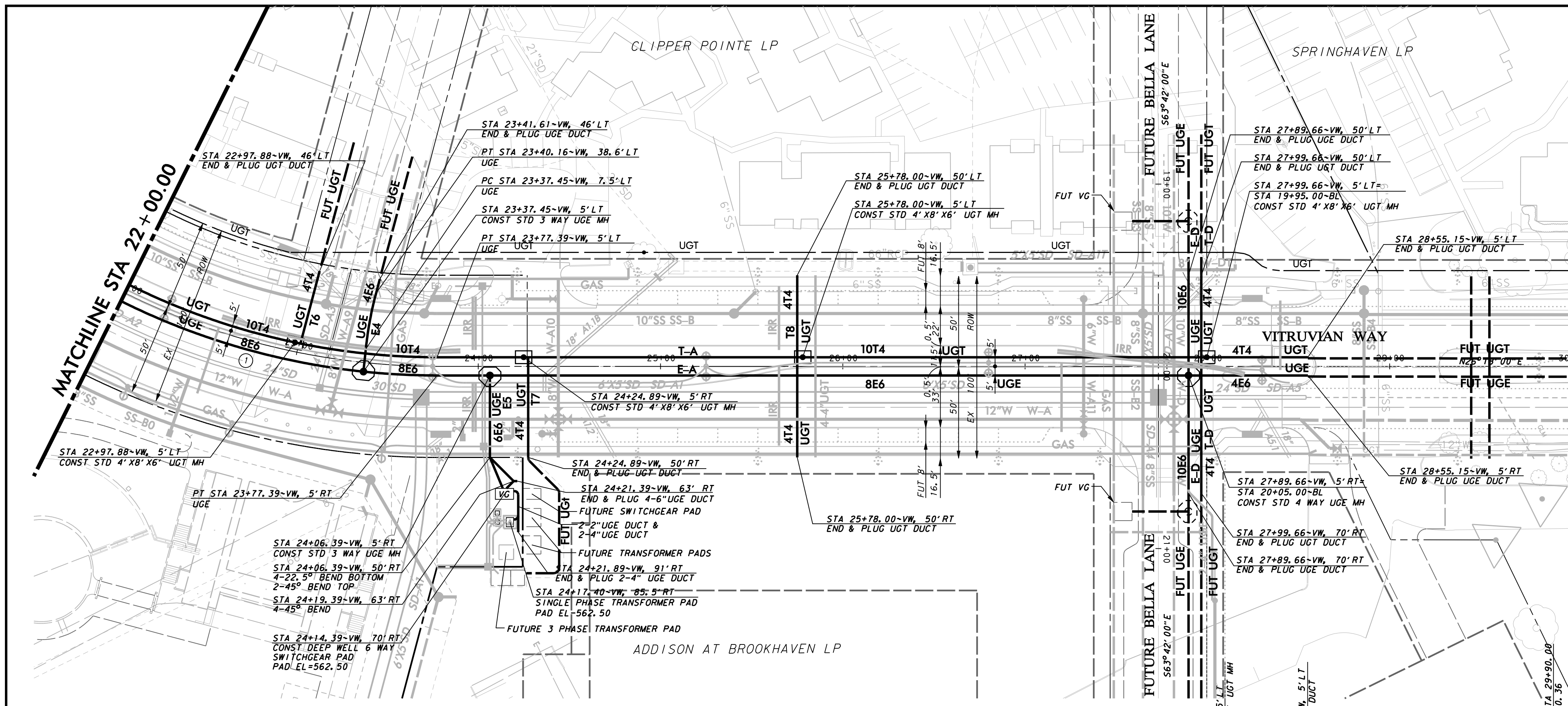
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**DUCT BANK PLAN & PROFILE - VW  
LINE A-STA. 14+00.00 TO 22+00.00**

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, TX 76092 (817) 552-6210

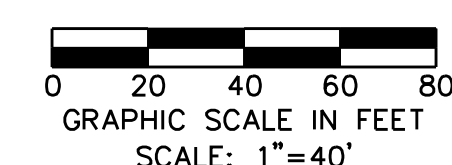
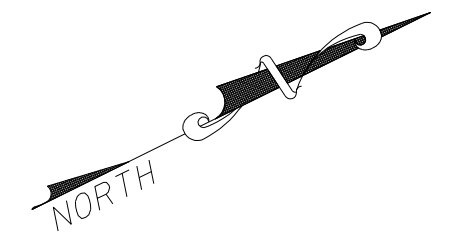
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	76

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

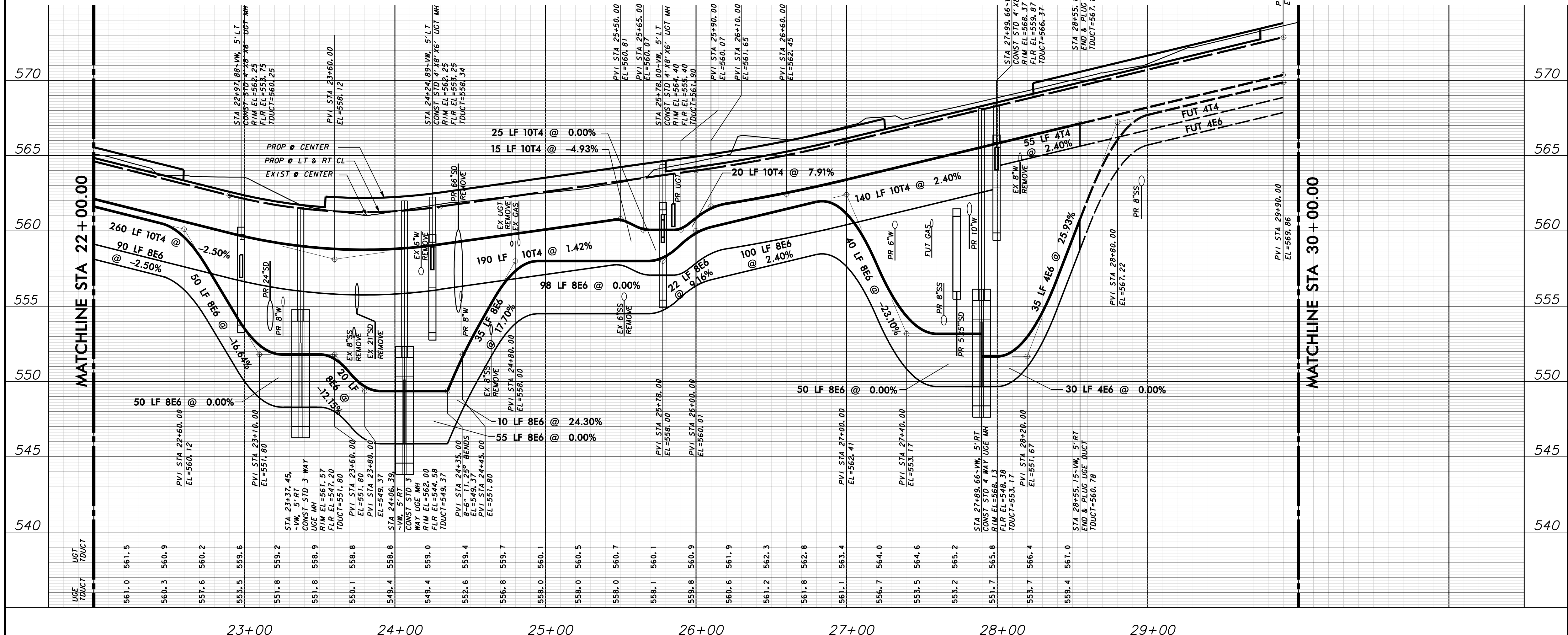
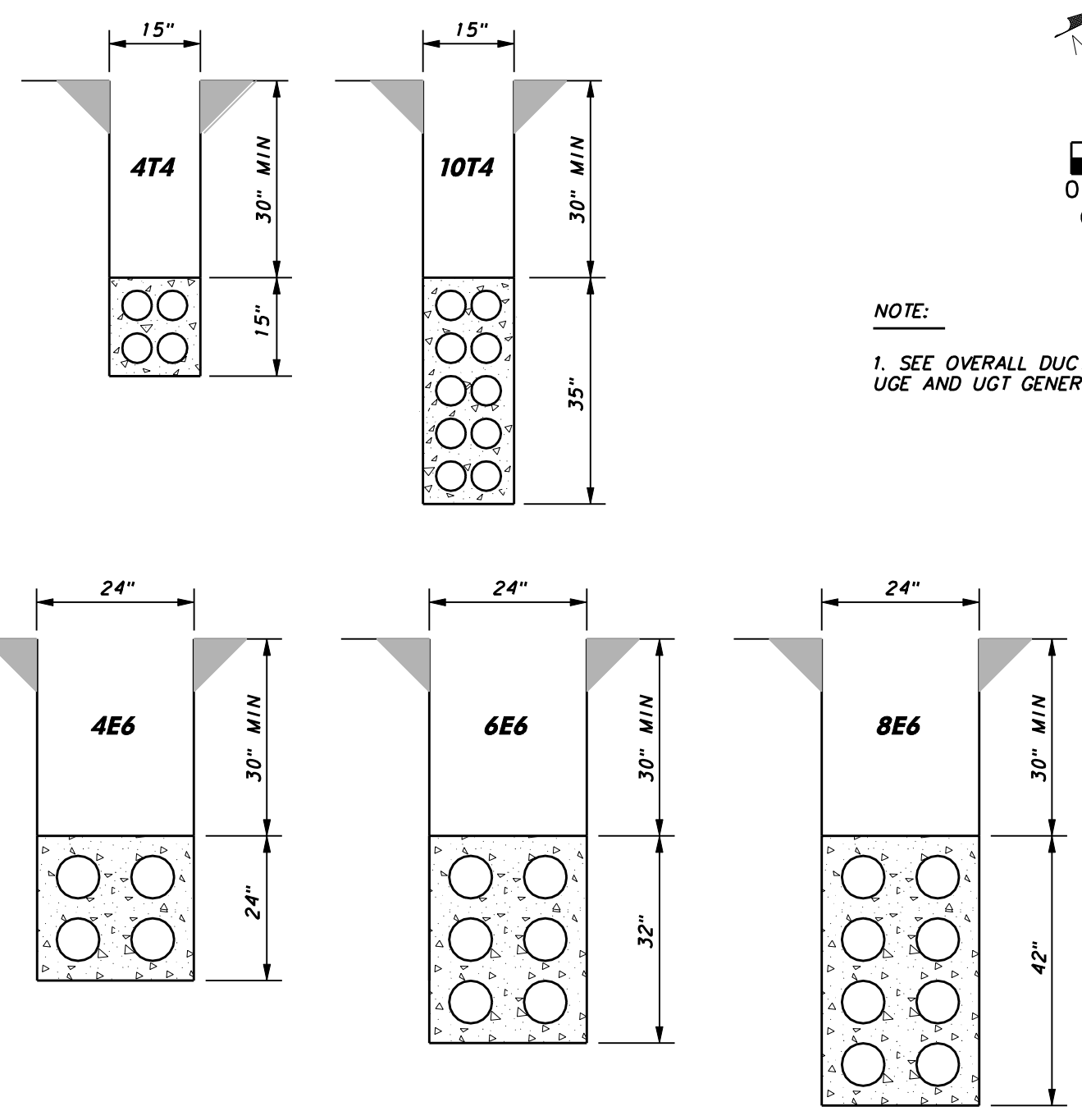


VITRUVIAN WAY CENTER LINE

NO	DELTA	RADIUS	LENGTH
1	59° 28' 36"	384.00'	398.62'

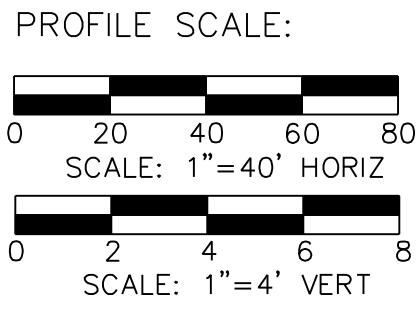


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NO.	REVISION	BY	DATE

**ADDISON!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

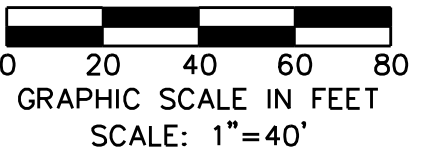
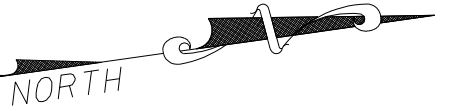
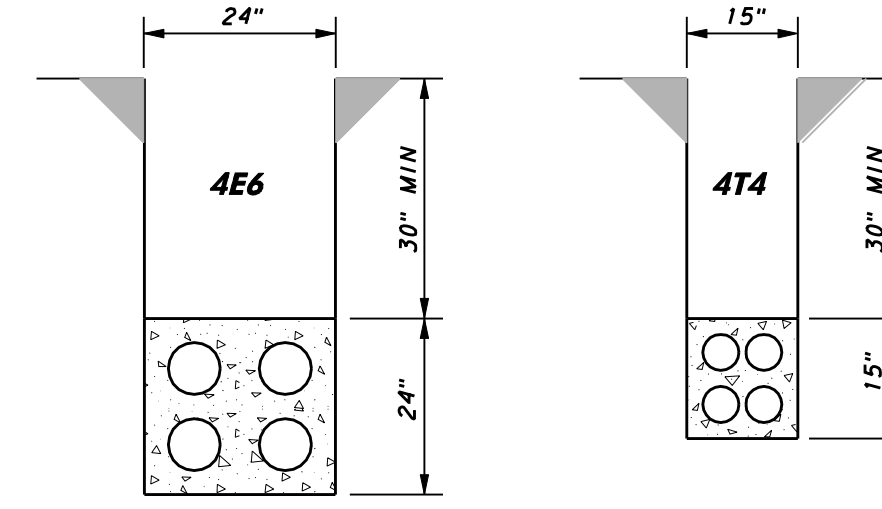
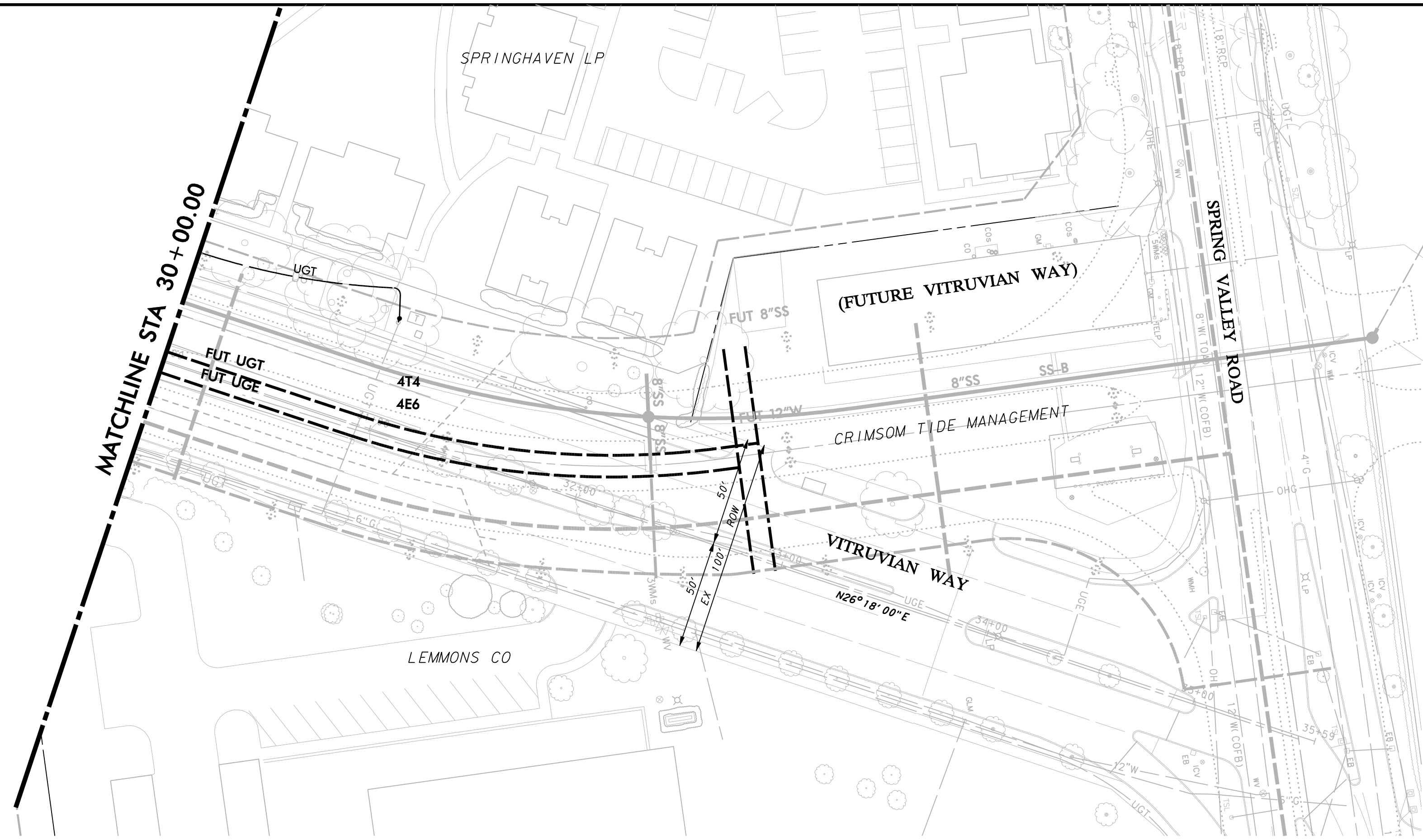
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**DUCT BANK PLAN & PROFILE - VW  
LINE A-STA. 22+00.00 TO 30+00.00**

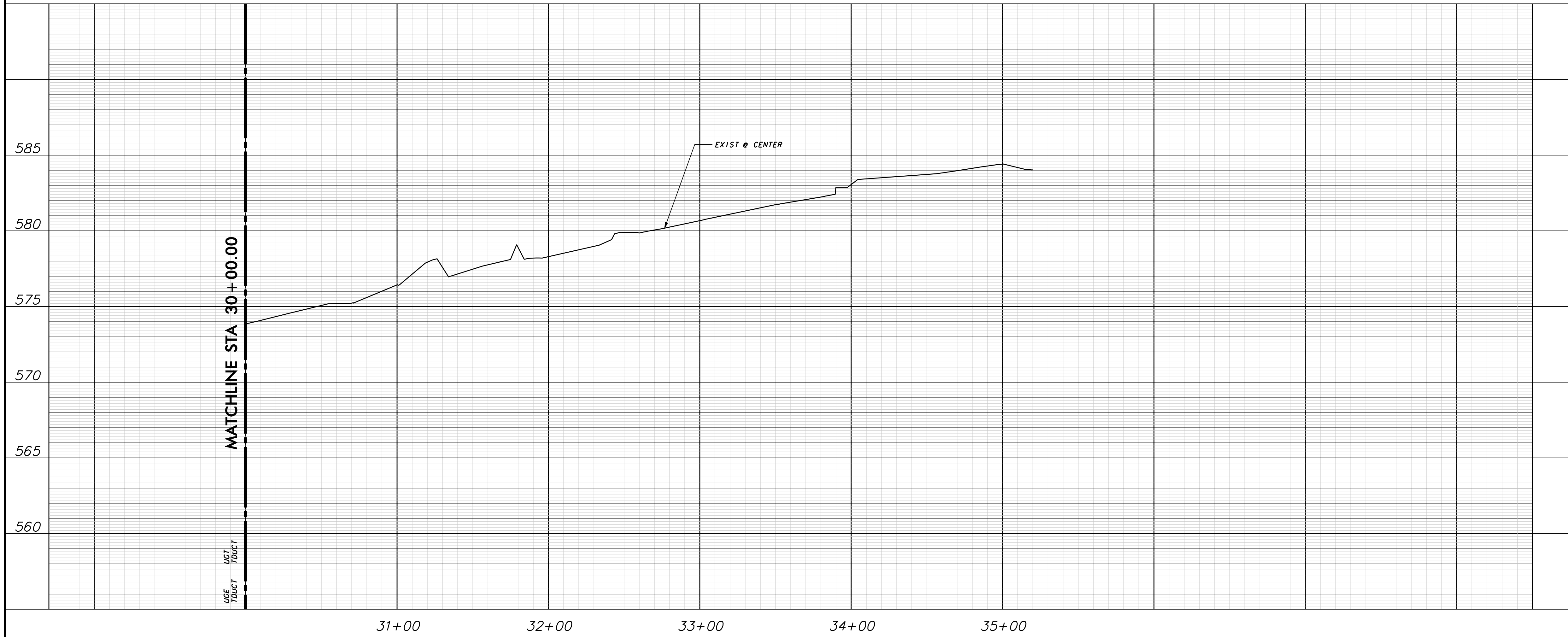
**icon** Consulting Engineers, Inc.  
Civil Engineers - Designers - Planners  
250 W. Southlake Blvd., Suite 117  
Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	77

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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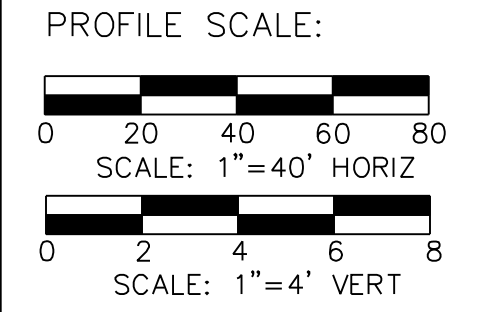


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*Bruce F. Dunne*  
 BRUCE F. DUNNE  
 62654  
 LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	BY	DATE

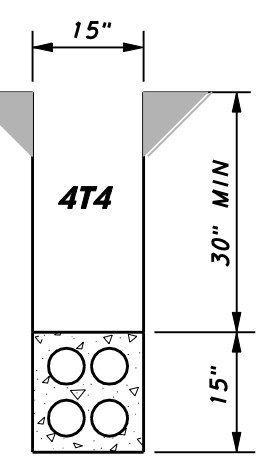
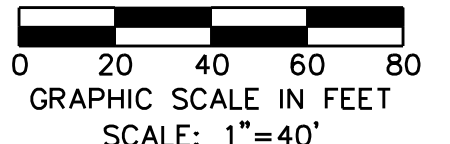
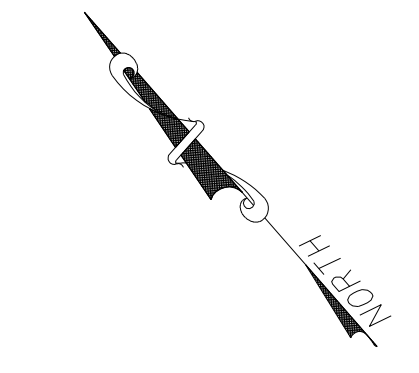
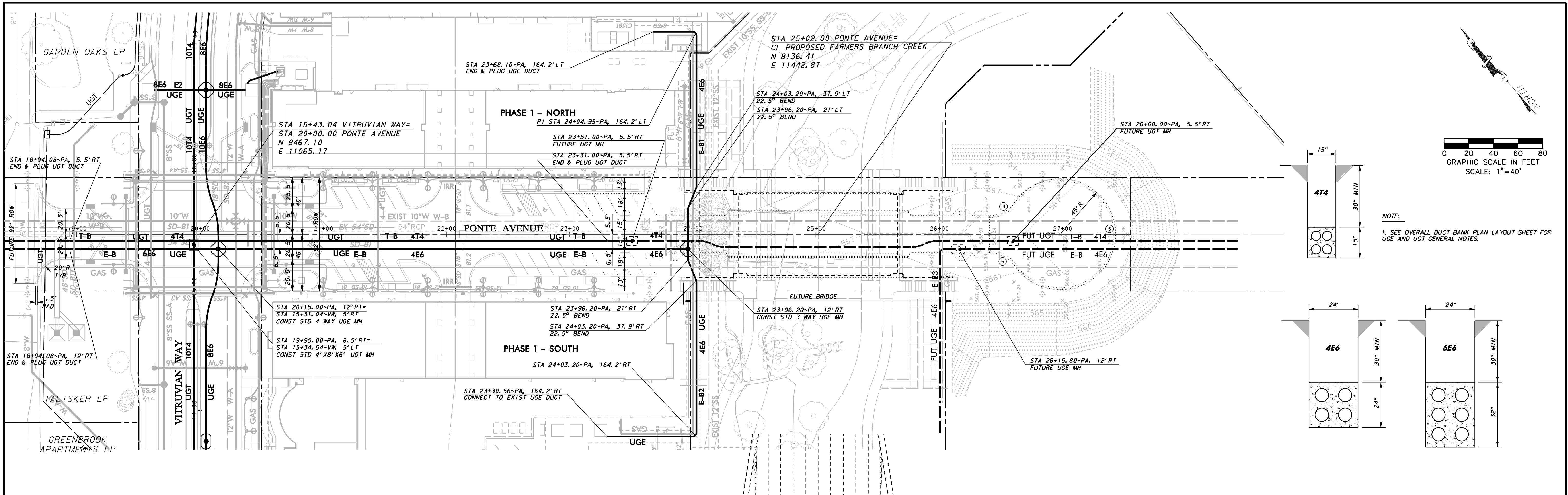
**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY & PONTE AVENUE

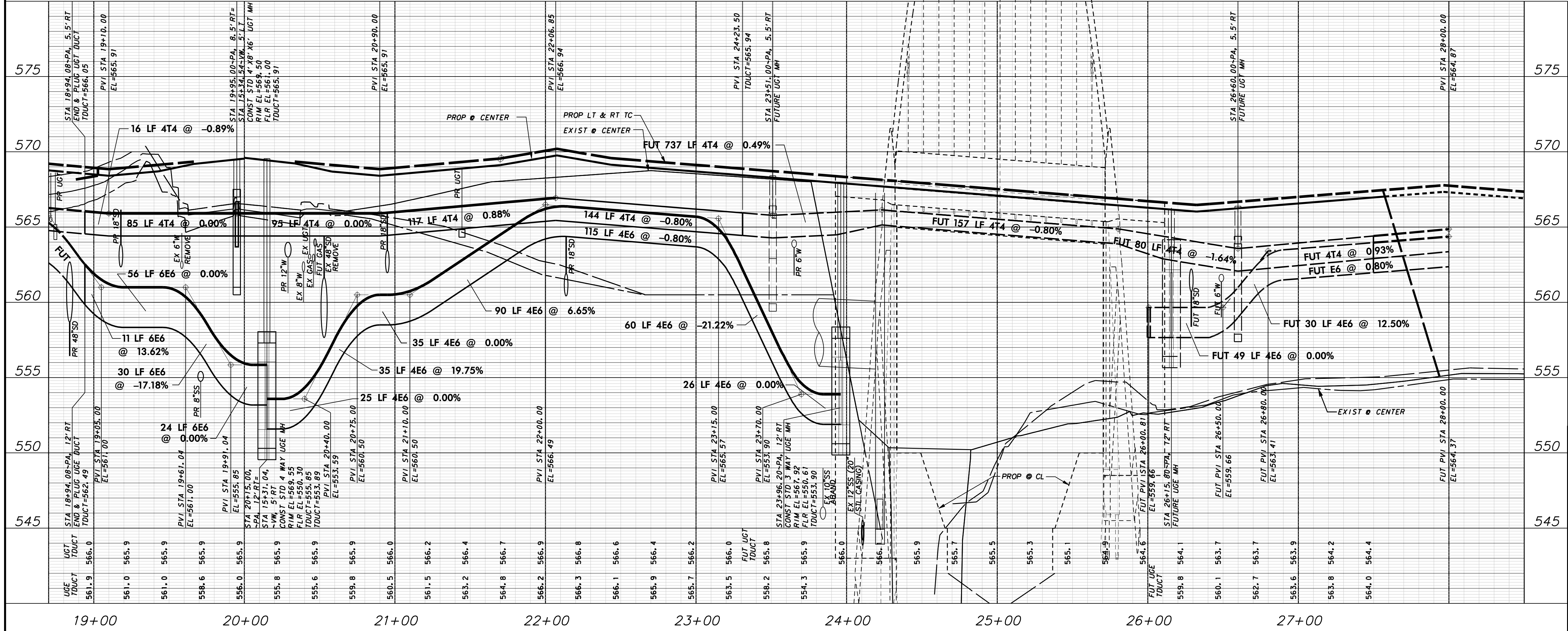
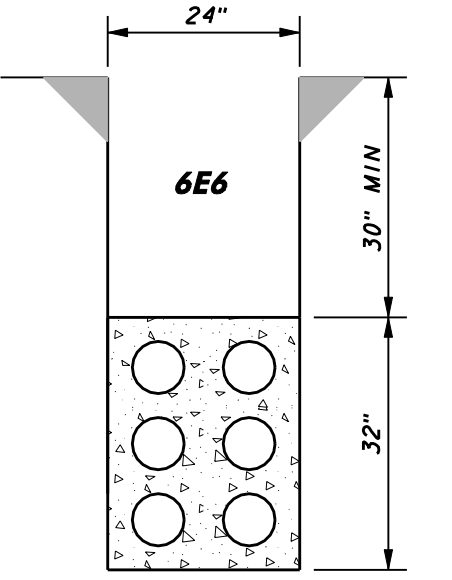
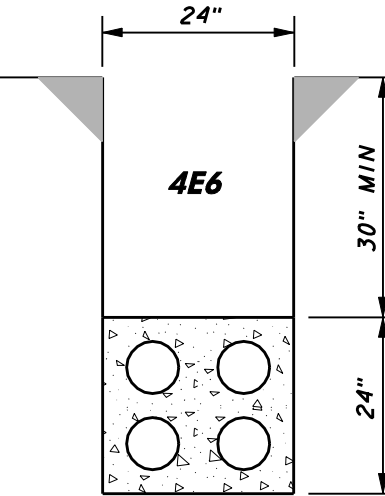
**DUCT BANK PLAN & PROFILE - VW**  
**LINE A-STA. 30+00.00 TO STA 29+70.05**

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117			
Civil Engineers - Designers - Planners		Southlake, Tx 76092 (817) 552-6210			
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	78

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



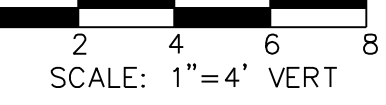
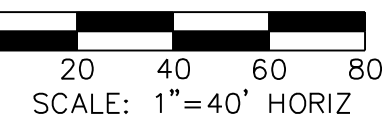
NOTE:  
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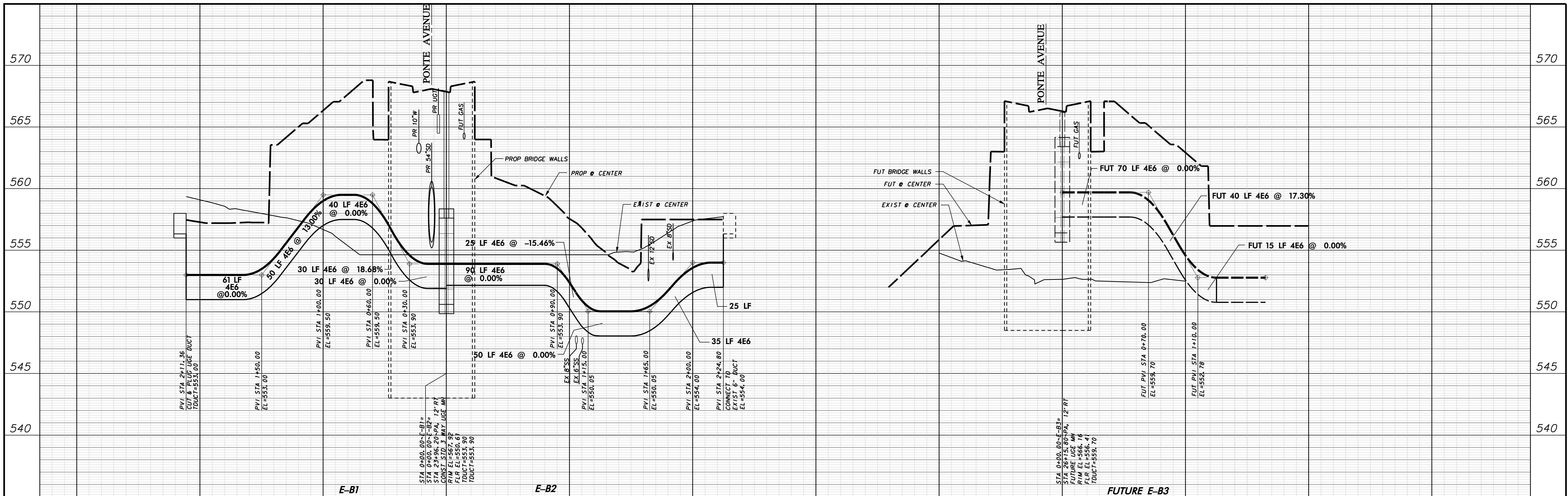
BM #1 REF. ELEVATION = 559.47  
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PROFILE SCALE:



NO.	REVISION	BY	DATE
<b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS			
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY & PONTE AVENUE			
<b>DUCT BANK PLAN &amp; PROFILE - PA</b> <b>LINE B-STA. 19+00.00 TO 27+26.80</b>			
<b>icon</b> Consulting Engineers, Inc. Civil Engineers - Designers - Planners		250 W. Southlake Blvd., Suite 117 Southlake, TX 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	79		

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

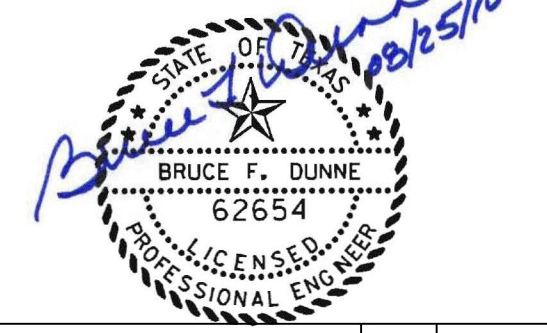
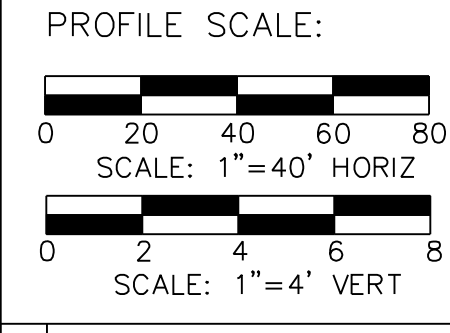


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NO. \_\_\_\_\_ REVISION \_\_\_\_\_ BY \_\_\_\_\_ DATE \_\_\_\_\_

**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

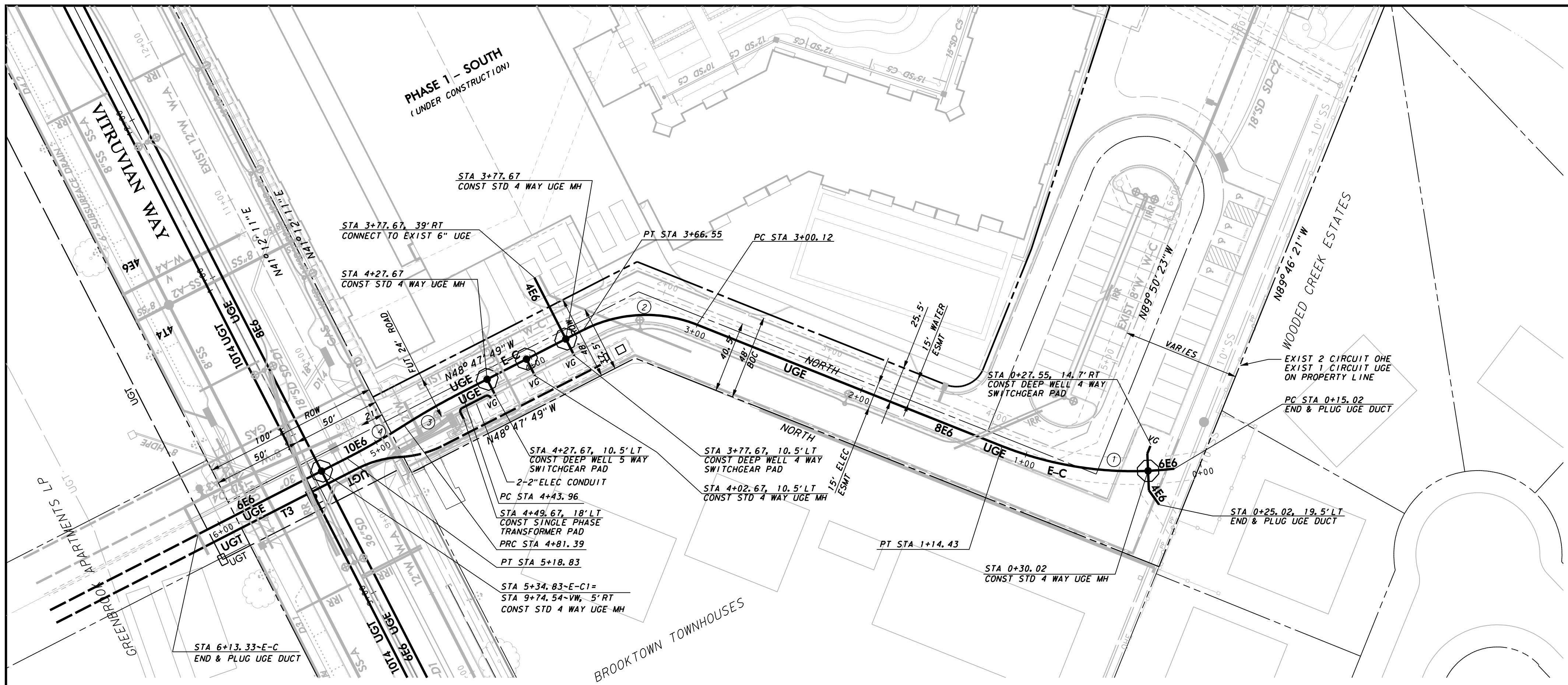
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**DUCT BANK LINE PROFILES-B1, B2 & B3**

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

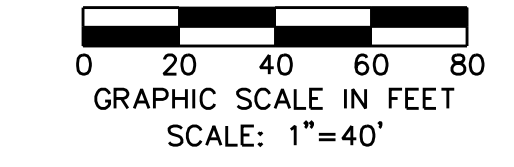
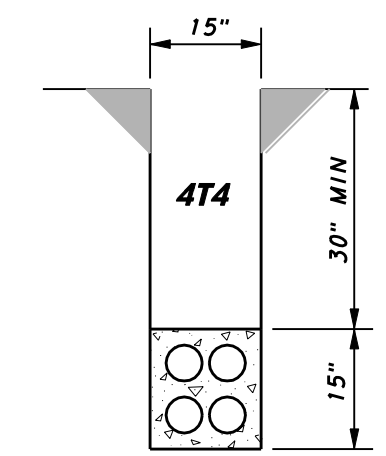
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	80

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

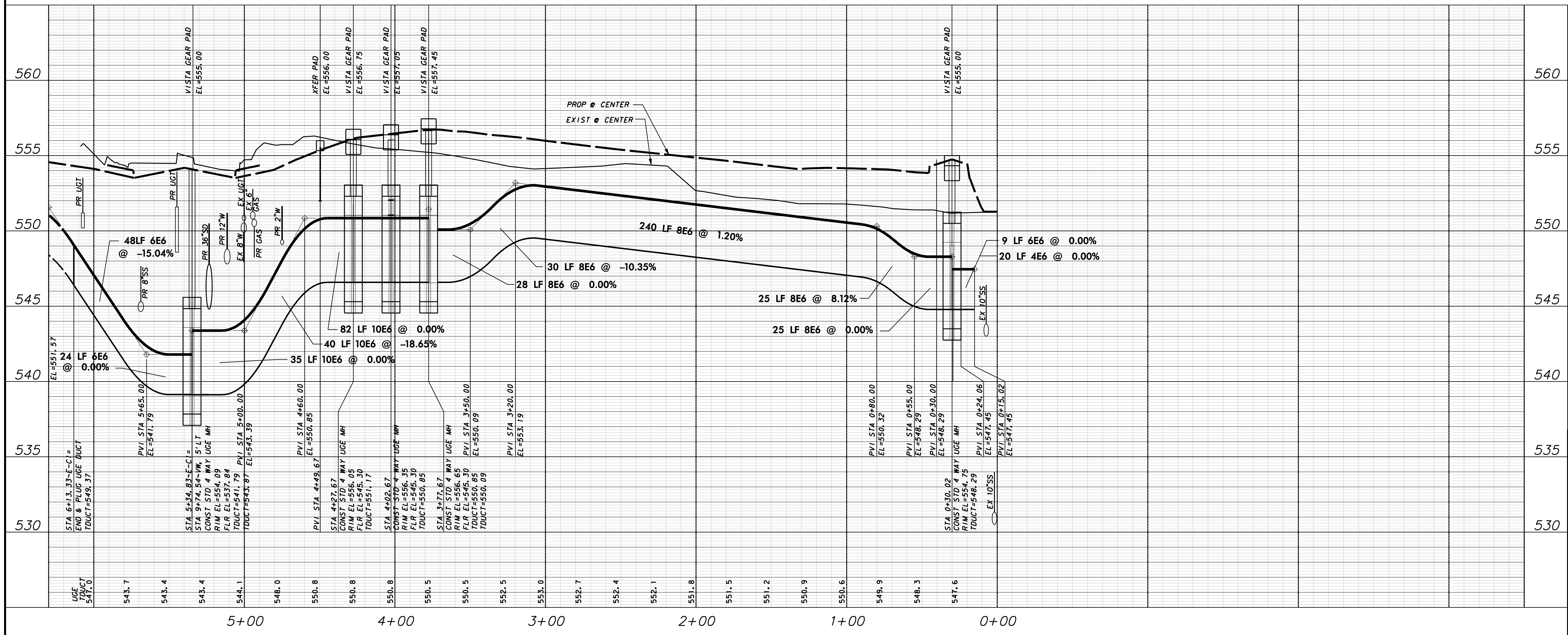
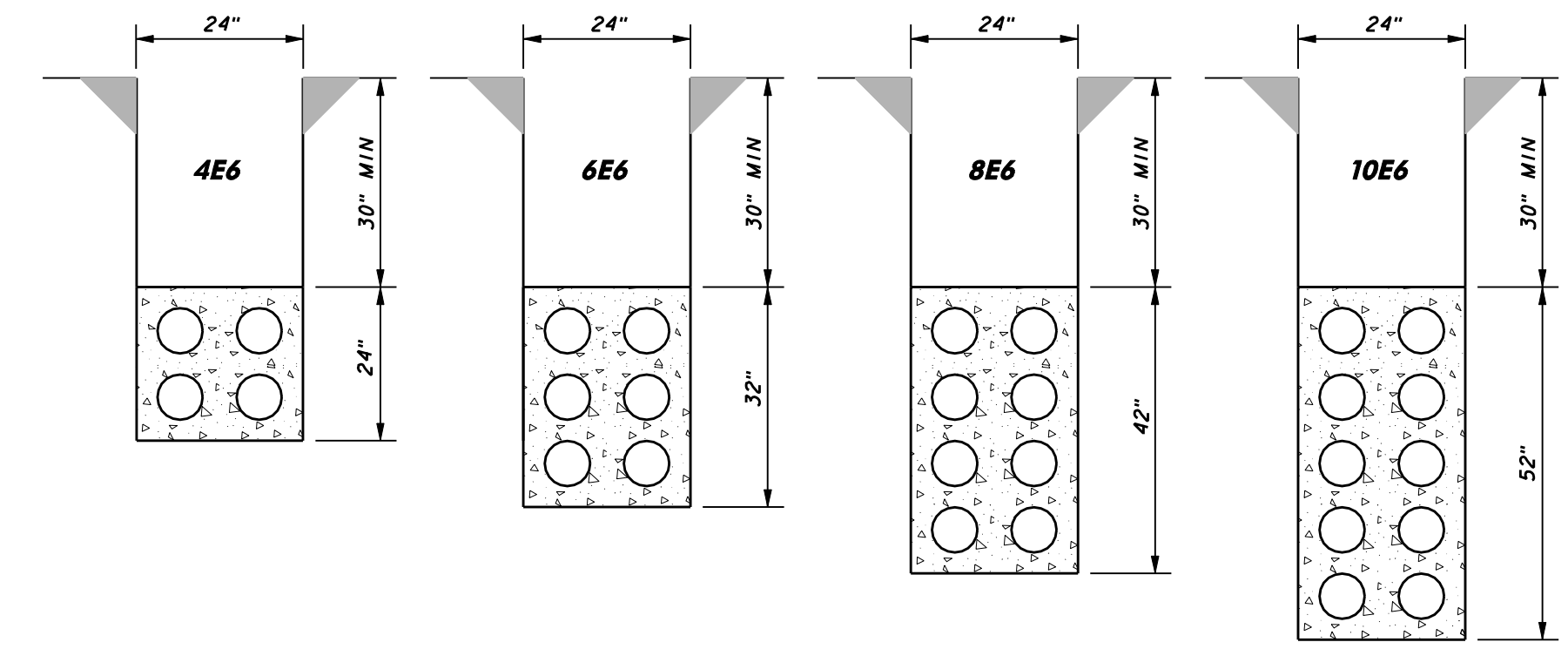


PARK ROAD CENTER LINE

CURVE DATA			
NO	DELTA	RADIUS	LENGTH
1	31° 54' 22"	200.00'	99.37'
2	48° 47' 49"	78.00'	66.43'
3	5° 21' 42"	400.00'	37.43'
4	5° 21' 42"	400.00'	37.43'



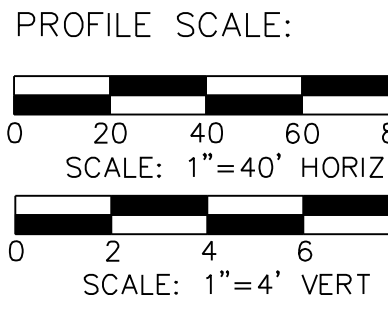
NOTE:  
1. SEE OVERALL DUCT BANK PLAN LAYOUT SHEET FOR UGE AND UGT GENERAL NOTES.



**WARNING**  
CONTRACTOR IS TO CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY LOCATING SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. ICON CONSULTING ENGINEERS, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOR FOR DEPICTING THE EXACT LOCATIONS OF UTILITIES ON THESE DRAWINGS.

BM #1 REF. ELEVATION = 559.47  
SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.



NO.	REVISION	BY	DATE

TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

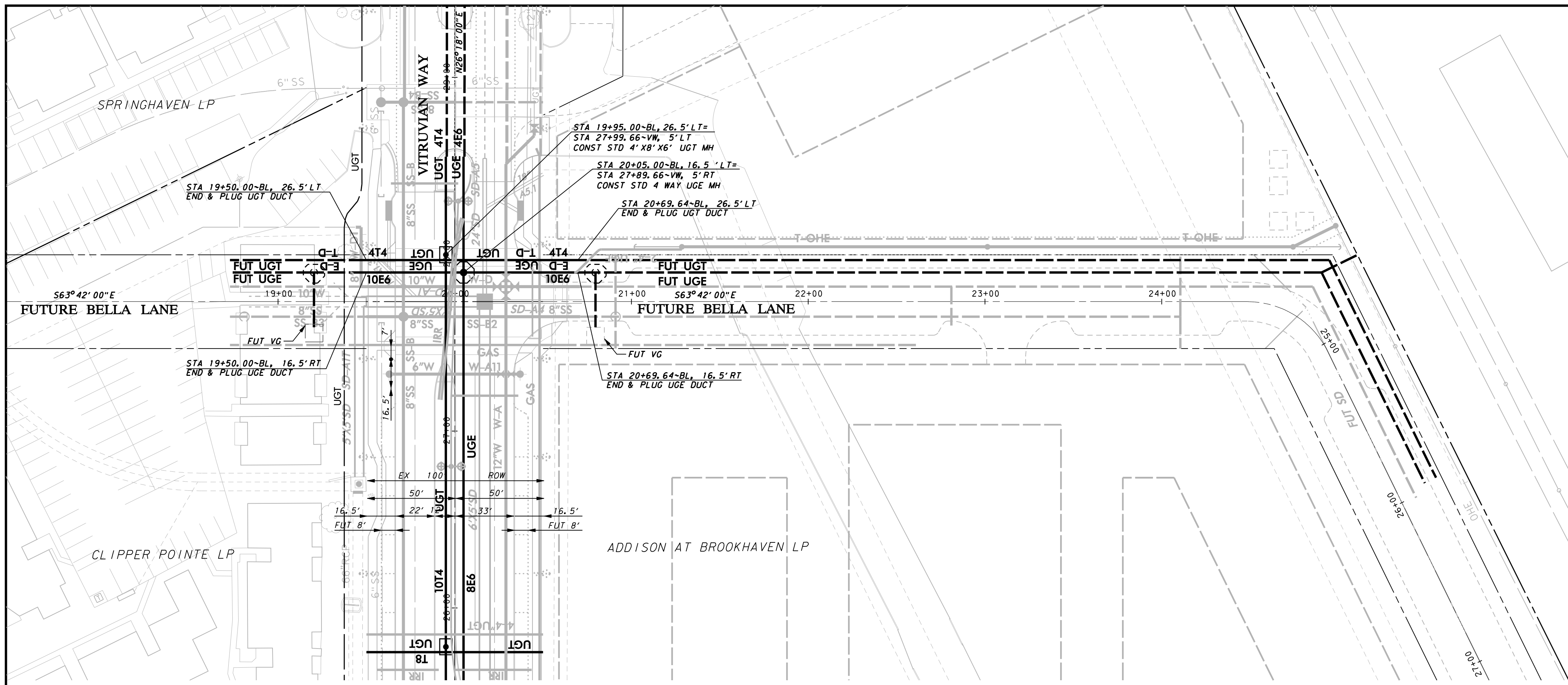
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**DUCT BANK PLAN & PROFILE - PARK RD  
LINE C-STA. 0+00.00 TO 5+35.48**

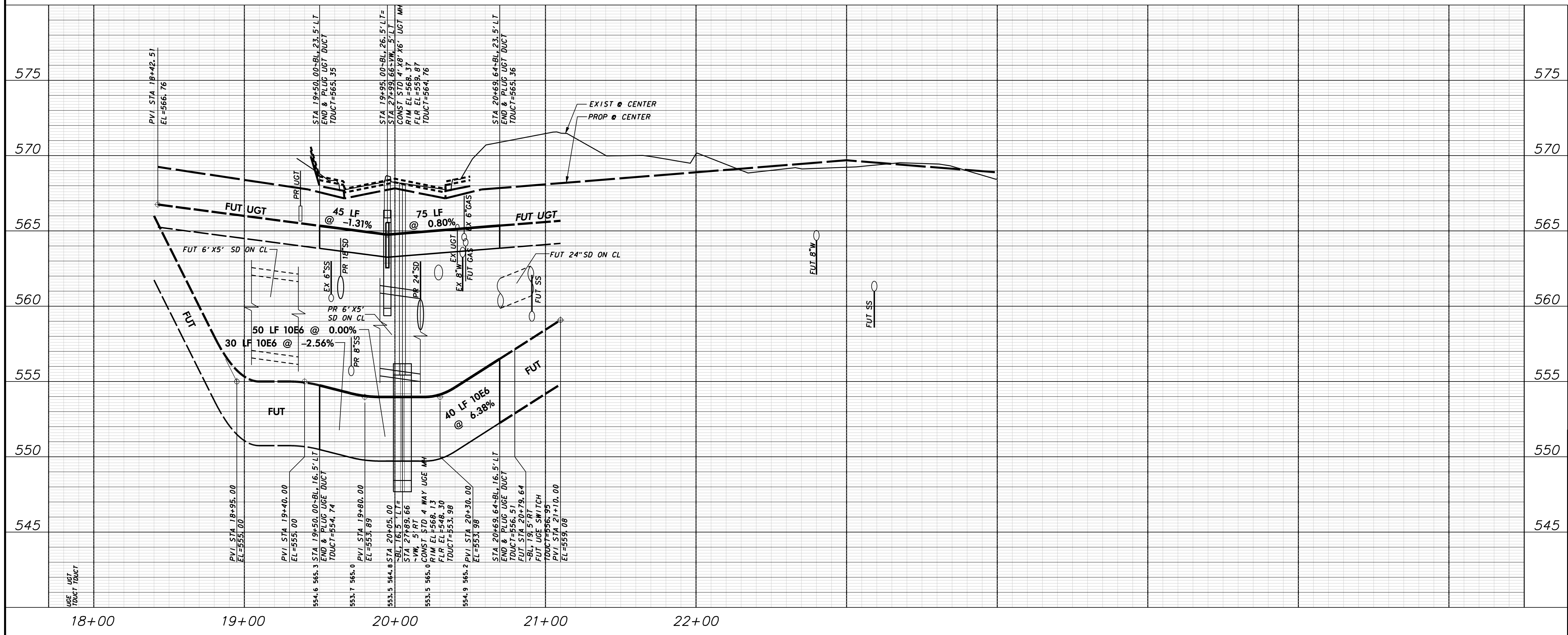
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PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	81

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



NOTE:  
1. SEE OVERALL DUCT BANK PLAN LAYOUT SHEET FOR UGE AND UGT GENERAL NOTES.



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NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

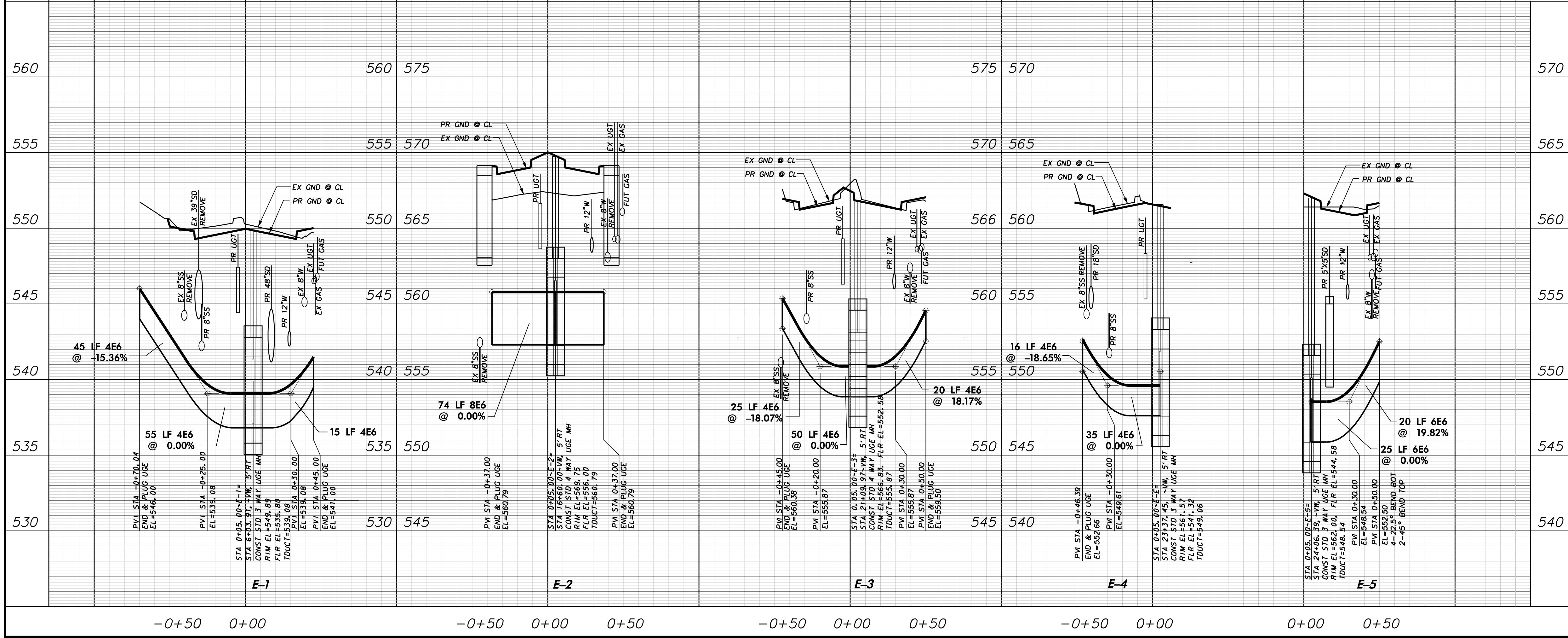
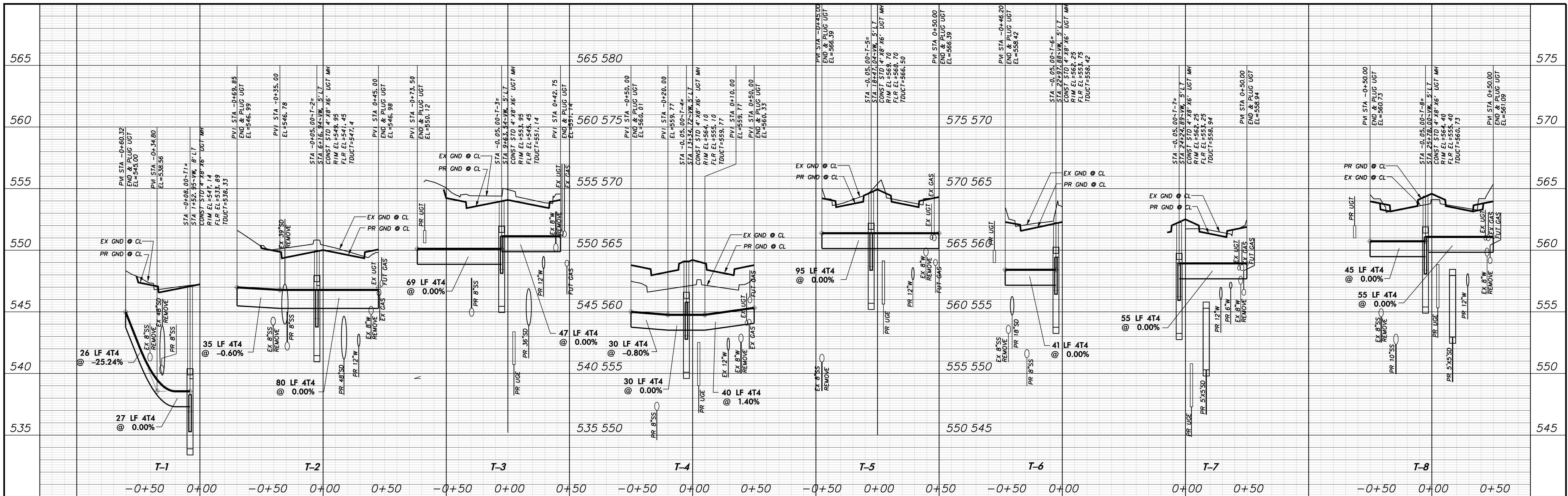
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

DUCT BANK PLAN & PROFILE - BELLA LN  
LINE D-STA. 20+00.00 TO 20+69.64

**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
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PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	82

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



**WARNING**

CONTRACTOR IS TO CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY LOCATING SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. ICON CONSULTING ENGINEERS, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOR FOR DEPICTING THE EXACT LOCATIONS OF UTILITIES ON THESE DRAWINGS.

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SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.

PROFILE SCALE:

SCALE: 1" = 40' HORIZ  
SCALE: 1" = 4' VERT

NO.	REVISION	BY	DATE

**ADDISON!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

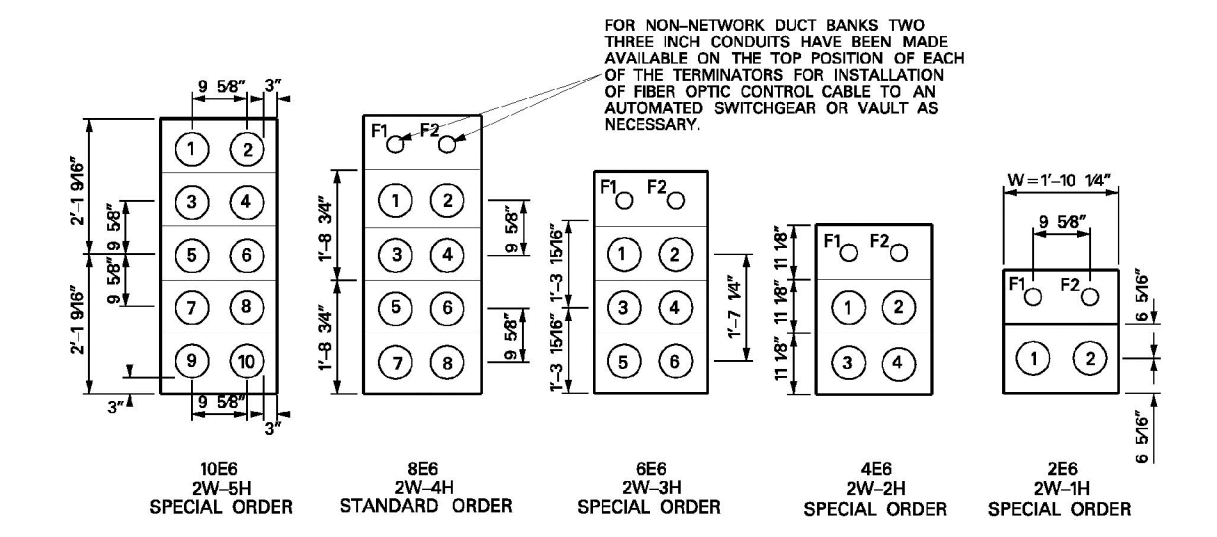
**DUCT BANK CROSSING PROFILES**

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	83		

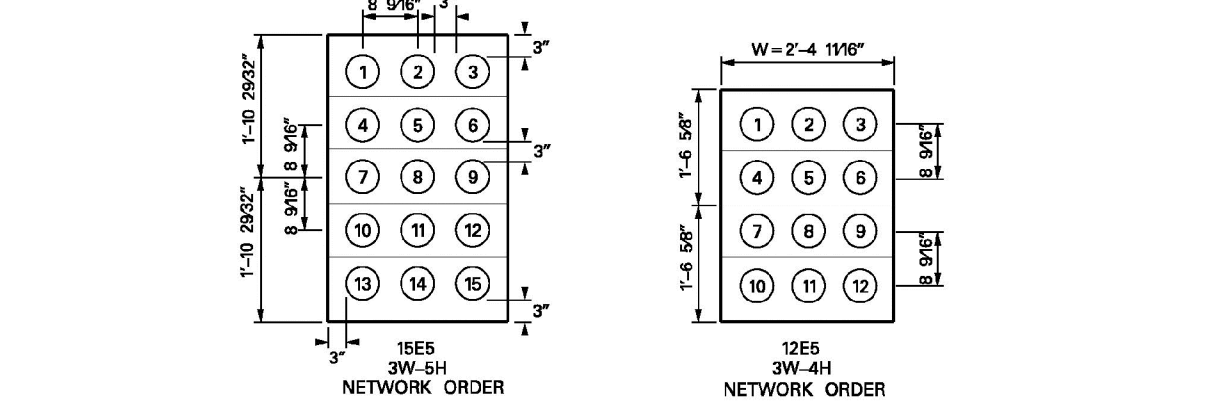
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



205 - 460 DUCT TERMINATOR ALIGNMENTS FOR PRECAST CONCRETE MANHOLES 205 - 460



ALIGNMENT FOR NON-NETWORK MANHOLE DUCT TERMINATION FOR 6" CONDUIT (TYPICAL)



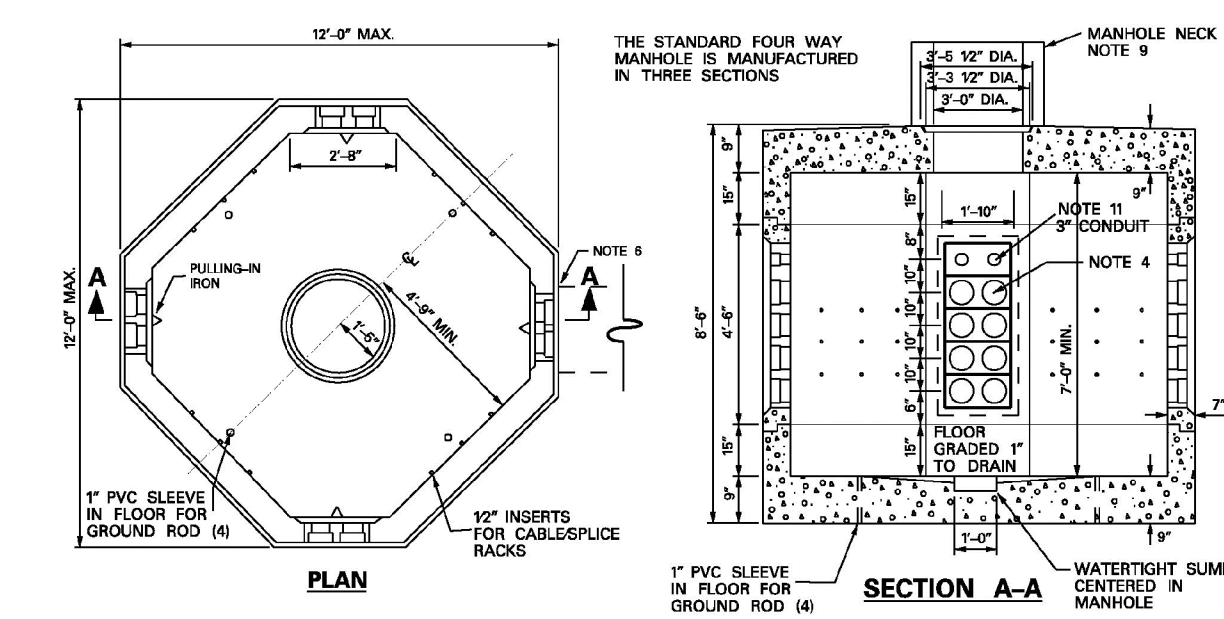
ALIGNMENT FOR NETWORK MANHOLE DUCT TERMINATION FOR 5" CONDUIT (TYPICAL)

- NOTES:
1. THE NUMBERING SYSTEM SHOWN ASSUMES ONE IS STANDING IN THE CENTER OF THE MANHOLE FACING THE TERMINATOR WALL.
  2. IN THE EVENT THAT ALL OF THE AVAILABLE CONDUIT POSITIONS OF THE TERMINATOR ARE NOT NEEDED FOR AN INSTALLATION, THE BOTTOM CONDUIT POSITIONS SHOULD BE USED FIRST TO ALLOW FOR FUTURE CONDUIT EXITS FROM THE MANHOLE.
  3. TO PREVENT WATER AND DEBRIS MIGRATION INTO THE MANHOLE, DO NOT REMOVE THE "KNOCK-OUT" MEMBRANES OF ANY UNUSED TERMINATOR POSITION. ALSO DUCT PLUGS SHOULD BE INSTALLED IN ALL CONDUITS THAT ARE UN-OCCUPIED BY CABLE.
  4. 5 INCH CONDUIT IS TO BE USED FOR DUCT PROJECTS WITHIN THE NETWORK DISTRIBUTION SYSTEMS ONLY. CABLE SIZES NECESSARY FOR NON-NETWORK DUCT SYSTEMS WILL REQUIRE 6 INCH CONDUIT/DUCT INSTALLATIONS.
  5. THE SYSTEMS DEPICTED ABOVE, ARE MANHOLE FACING CONDUIT/DUCT SYSTEM TERMINATORS ONLY, AND SHOULD NOT BE MISTAKEN FOR DUCT SECTION DETAILS.
  6. THE THREE INCH CONDUIT FOR FIBER OPTIC CABLE HAS BEEN OMITTED ON THE 1065 DUCT DUE TO A LACK OF WALL SPACE.

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	1	MANHOLE 4-WAY PRE-CAST CONCRETE WITH COVER AND FRAME.	319842	MANHOLE4W	
2	2	ROD, GROUND, COPPER CLAD, STEEL, 5/8 INCH X 8 FOOT	300524	MHWUCUST	GSSP8021M

APPROVED BY

205 - 465 MANHOLE LARGE FOUR WAY PRECAST REINFORCED CONCRETE 205 - 465



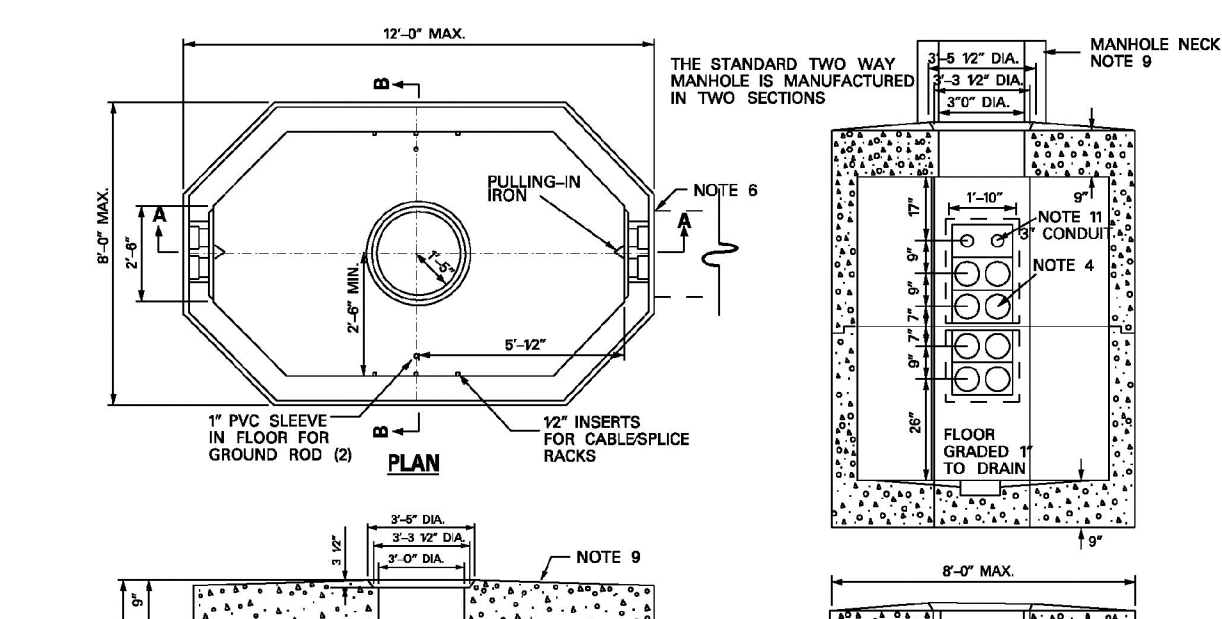
MANHOLE LARGE FOUR WAY PRECAST REINFORCED CONCRETE

- NOTES:
1. STANDARD MANHOLES ARE SHOWN IN DRAWINGS 205-465, 205-470 AND 205-475.
  2. THE MAXIMUM DESIGN DEPTH FOR A MANHOLE IS 20 FEET TO THE FINISHED FLOOR. THIS INCLUDES 12 FEET OF NECK (FOR DEPTHS GREATER THAN THIS CONTACT DISTRIBUTION STANDARDS).
  3. MANHOLES SHALL BE USED FOR LOCATIONS AS FOLLOWS:
    - A. WHERE MULTIPLE CIRCUITS OF UNDERGROUND PRIMARY VOLTAGE CONDUCTOR ARE TO BE PULLED IN AND/OR SPliced.
    - B. WHERE SPlicing POINT WILL BE IN A STREET OR TRAFFIC AREA. (CONDUCTOR SIZES 1/0 AND UP) (NOTE: 4X8 SPlicing BOX IS NOT DESIGNED FOR APPLICATIONS WHERE THERE WILL BE ANY INTENTIONAL VEHICULAR TRAFFIC).
  4. SEE DRAWING 205-460 FOR DETAILS ON TERMINATOR SPECIFICATIONS AND DIMENSIONS DENOTED BY W AND H.
  5. ALL JOINTS BETWEEN MANHOLE SECTIONS AND MANHOLE NECK SECTIONS SHALL BE PAINTED WITH "RAM-NEK" PRIMER OR APPROVED EQUAL BY MANHOLE SUPPLIER. ALL JOINTS SHALL BE MADE WATERTIGHT AT THE TIME OF INITIAL INSTALLATION.
  6. TO PREVENT WATER AND DEBRIS MIGRATION INTO THE MANHOLE, DO NOT REMOVE THE "KNOCK-OUT" MEMBRANES OF ANY UN-USED TERMINATOR POSITION. ALSO DUCT PLUGS SHOULD BE INSTALLED IN ALL CONDUITS THAT ARE UN-OCCUPIED BY CABLE.
  7. FINAL SLOPE OF TOP OF MANHOLE SHALL BE 2" MINIMUM TO DRAIN WATER FROM TOP OF MANHOLE.
  8. A MINIMUM OF FOUR 5/8 IN. X 8 FT. COPPER CLAD GROUND RODS SHALL BE INSTALLED IN EACH MANHOLE.
  9. SEE DRAWING 205-480 FOR NECK DETAILS AND 205-485 FOR LID AND FRAME SPECIFICATIONS.
  10. PRE-CAST CONCRETE MANHOLES ARE TO BE INSTALLED ON A MINIMUM OF AN 1/2" GRAVEL BASE TO AID IN LEVELING.
  11. IF FIBER OPTIC CONTROL CABLE IS TO BE INSTALLED IN THE DUCT SYSTEM, ONE OF THE TOP 6" CONDUITS SHOULD BE USED IF AVAILABLE. (SEE DRAWING 205-460 FOR FIBER OPTIC CABLE RACKING REQUIREMENTS) FOR FIBER OPTIC CONTROL CABLE INSTALLED FROM MANHOLE TO SWITCHGEAR PAD USE 3" CONDUIT TERMINATION ABOVE 6" CONFIGURATION. (SEE DRAWING 205-342).

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	1	MANHOLE 4-WAY PRE-CAST CONCRETE WITH COVER AND FRAME.	319842	MANHOLE4W	
2	2	ROD, GROUND, COPPER CLAD, STEEL, 5/8 INCH X 8 FOOT	300524	MHWUCUST	GSSP8021M

APPROVED BY

205 - 470 MANHOLE LARGE TWO WAY PRECAST REINFORCED CONCRETE 205 - 470



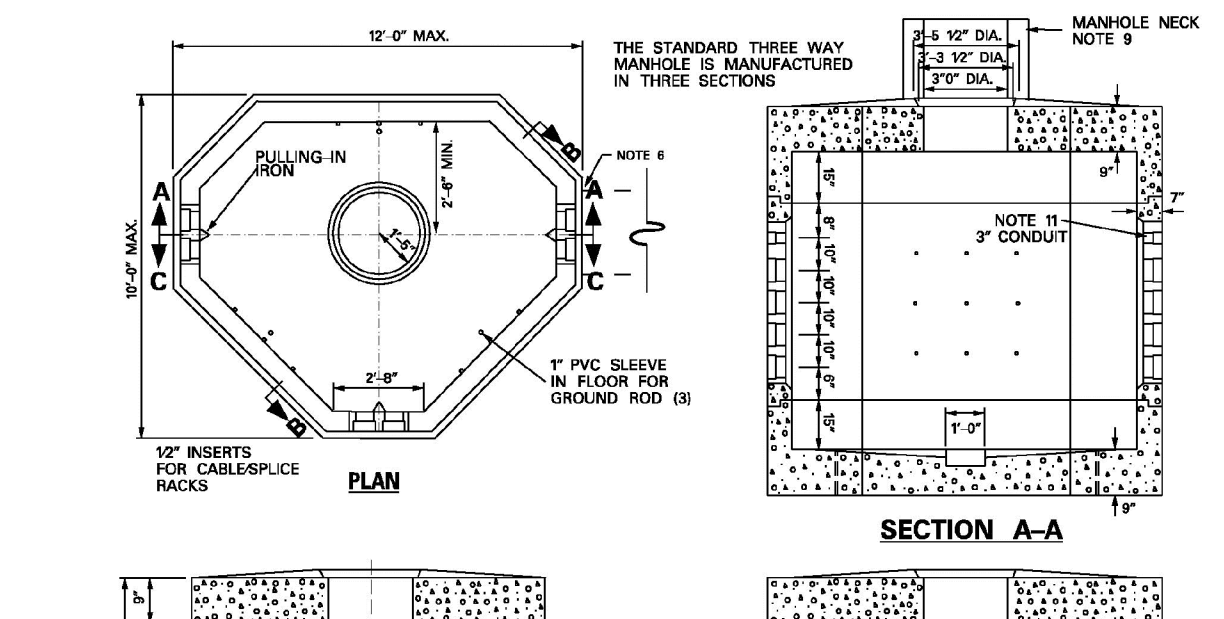
MANHOLE LARGE TWO WAY PRECAST REINFORCED CONCRETE

- NOTES:
1. STANDARD MANHOLES ARE SHOWN IN DRAWINGS 205-465, 205-470 AND 205-475.
  2. THE MAXIMUM DESIGN DEPTH FOR A MANHOLE IS 20 FEET TO THE FINISHED FLOOR. THIS INCLUDES 12 FEET OF NECK (FOR DEPTHS GREATER THAN THIS CONTACT DISTRIBUTION STANDARDS).
  3. MANHOLES SHALL BE USED FOR LOCATIONS AS FOLLOWS:
    - A. WHERE MULTIPLE CIRCUITS OF UNDERGROUND PRIMARY VOLTAGE CONDUCTOR ARE TO BE PULLED IN AND/OR SPliced.
    - B. WHERE SPlicing POINT WILL BE IN A STREET OR TRAFFIC AREA. (CONDUCTOR SIZES 1/0 AND UP) (NOTE: 4X8 SPlicing BOX IS NOT DESIGNED FOR APPLICATIONS WHERE THERE WILL BE ANY INTENTIONAL VEHICULAR TRAFFIC).
  4. SEE DRAWING 205-460 FOR DETAILS ON TERMINATOR SPECIFICATIONS AND DIMENSIONS DENOTED BY W AND H.
  5. ALL JOINTS BETWEEN MANHOLE SECTIONS AND MANHOLE NECK SECTIONS SHALL BE PAINTED WITH "RAM-NEK" PRIMER OR APPROVED EQUAL BY MANHOLE SUPPLIER. ALL JOINTS ARE TO BE MADE WATERTIGHT AT THE TIME OF INITIAL INSTALLATION.
  6. TO PREVENT WATER AND DEBRIS MIGRATION INTO THE MANHOLE, DO NOT REMOVE THE "KNOCK-OUT" MEMBRANES OF ANY UN-USED TERMINATOR POSITION. ALSO DUCT PLUGS SHOULD BE INSTALLED IN ALL CONDUITS THAT ARE UN-OCCUPIED BY CABLE.
  7. FINAL SLOPE OF TOP OF MANHOLE SHALL BE 2" MINIMUM TO DRAIN WATER FROM TOP OF MANHOLE.
  8. A MINIMUM OF TWO 5/8 IN. X 8 FT. COPPER CLAD GROUND RODS SHALL BE INSTALLED IN EACH MANHOLE.
  9. SEE DRAWING 205-480 FOR NECK DETAILS AND 205-485 FOR LID AND FRAME SPECIFICATION.
  10. PRE-CAST CONCRETE MANHOLES ARE TO BE INSTALLED ON A MINIMUM OF AN 1/2" GRAVEL BASE TO AID IN LEVELING.
  11. IF FIBER OPTIC CONTROL CABLE IS TO BE INSTALLED IN THE DUCT SYSTEM, ONE OF THE TOP 6" CONDUITS SHOULD BE USED IF AVAILABLE. (SEE DRAWING 205-460 FOR FIBER OPTIC CABLE RACKING REQUIREMENTS) FOR FIBER OPTIC CONTROL CABLE INSTALLED FROM MANHOLE TO SWITCHGEAR PAD USE 3" CONDUIT TERMINATION ABOVE 6" CONFIGURATION. (SEE DRAWING 205-342).

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	1	MANHOLE 2-WAY PRE-CAST CONCRETE WITH COVER AND FRAME	323100	MANHOLE2W	
2	2	ROD, GROUND, COPPER CLAD, STEEL, 5/8 INCH X 8 FOOT	300524	MHWUCUST	GSSP8021M

APPROVED BY

205 - 475 MANHOLE LARGE THREE WAY PRECAST REINFORCED CONCRETE 205 - 475



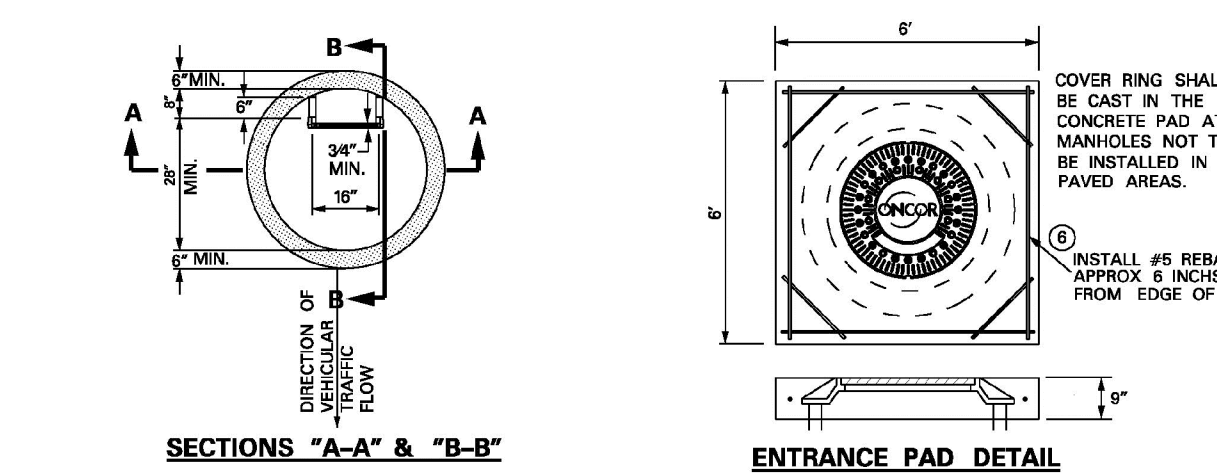
MANHOLE LARGE THREE WAY PRECAST REINFORCED CONCRETE

- NOTES:
1. STANDARD MANHOLES ARE SHOWN IN DRAWINGS 205-465, 205-470 AND 205-475.
  2. THE MAXIMUM DESIGN DEPTH FOR A MANHOLE IS 20 FEET TO THE FINISHED FLOOR. THIS INCLUDES 12 FEET OF NECK (FOR DEPTHS GREATER THAN THIS CONTACT DISTRIBUTION STANDARDS).
  3. MANHOLES SHALL BE USED FOR LOCATIONS AS FOLLOWS:
    - A. WHERE MULTIPLE CIRCUITS OF UNDERGROUND PRIMARY VOLTAGE CONDUCTOR ARE TO BE PULLED IN AND/OR SPliced.
    - B. WHERE SPlicing POINT WILL BE IN A STREET OR TRAFFIC AREA. (CONDUCTOR SIZES 1/0 AND UP) (NOTE: 4X8 SPlicing BOX IS NOT DESIGNED FOR APPLICATIONS WHERE THERE WILL BE ANY INTENTIONAL VEHICULAR TRAFFIC).
  4. SEE DRAWING 205-460 FOR DETAILS ON TERMINATOR SPECIFICATIONS AND DIMENSIONS DENOTED BY W AND H.
  5. ALL JOINTS BETWEEN MANHOLE SECTIONS AND MANHOLE NECK SECTIONS SHALL BE PAINTED WITH "RAM-NEK" PRIMER OR APPROVED EQUAL BY MANHOLE SUPPLIER. ALL JOINTS ARE TO BE MADE WATERTIGHT AT THE TIME OF INITIAL INSTALLATION.
  6. TO PREVENT WATER AND DEBRIS MIGRATION INTO THE MANHOLE, DO NOT REMOVE THE "KNOCK-OUT" MEMBRANES OF ANY UN-USED TERMINATOR POSITION. ALSO DUCT PLUGS SHOULD BE INSTALLED IN ALL CONDUITS THAT ARE UN-OCCUPIED BY CABLE.
  7. FINAL SLOPE OF TOP OF MANHOLE SHALL BE 2" MINIMUM TO DRAIN WATER FROM TOP OF MANHOLE.
  8. A MINIMUM OF THREE 5/8 IN. X 8 FT. COPPER CLAD GROUND RODS SHALL BE INSTALLED IN EACH MANHOLE.
  9. SEE DRAWING 205-480 FOR NECK DETAILS AND 205-485 FOR LID AND FRAME SPECIFICATION.
  10. PRE-CAST CONCRETE MANHOLES ARE TO BE INSTALLED ON A MINIMUM OF AN 1/2" GRAVEL BASE TO AID IN LEVELING.
  11. IF FIBER OPTIC CONTROL CABLE IS TO BE INSTALLED IN THE DUCT SYSTEM, ONE OF THE TOP 6" CONDUITS SHOULD BE USED IF AVAILABLE. (SEE DRAWING 205-460 FOR FIBER OPTIC CABLE RACKING REQUIREMENTS) FOR FIBER OPTIC CONTROL CABLE INSTALLED FROM MANHOLE TO SWITCHGEAR PAD USE 3" CONDUIT TERMINATION ABOVE 6" CONFIGURATION. (SEE DRAWING 205-342).

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	1	MANHOLE 3-WAY PRE-CAST CONCRETE WITH COVER AND FRAME	323100	MANHOLE3W	
2	2	ROD, GROUND, COPPER CLAD, STEEL, 5/8 INCH X 8 FOOT	300524	MHWUCUST	GSSP8021M

APPROVED BY

205 - 480 MANHOLE NECK, LADDER AND ENTRANCE PAD INSTALLATION 205 - 480



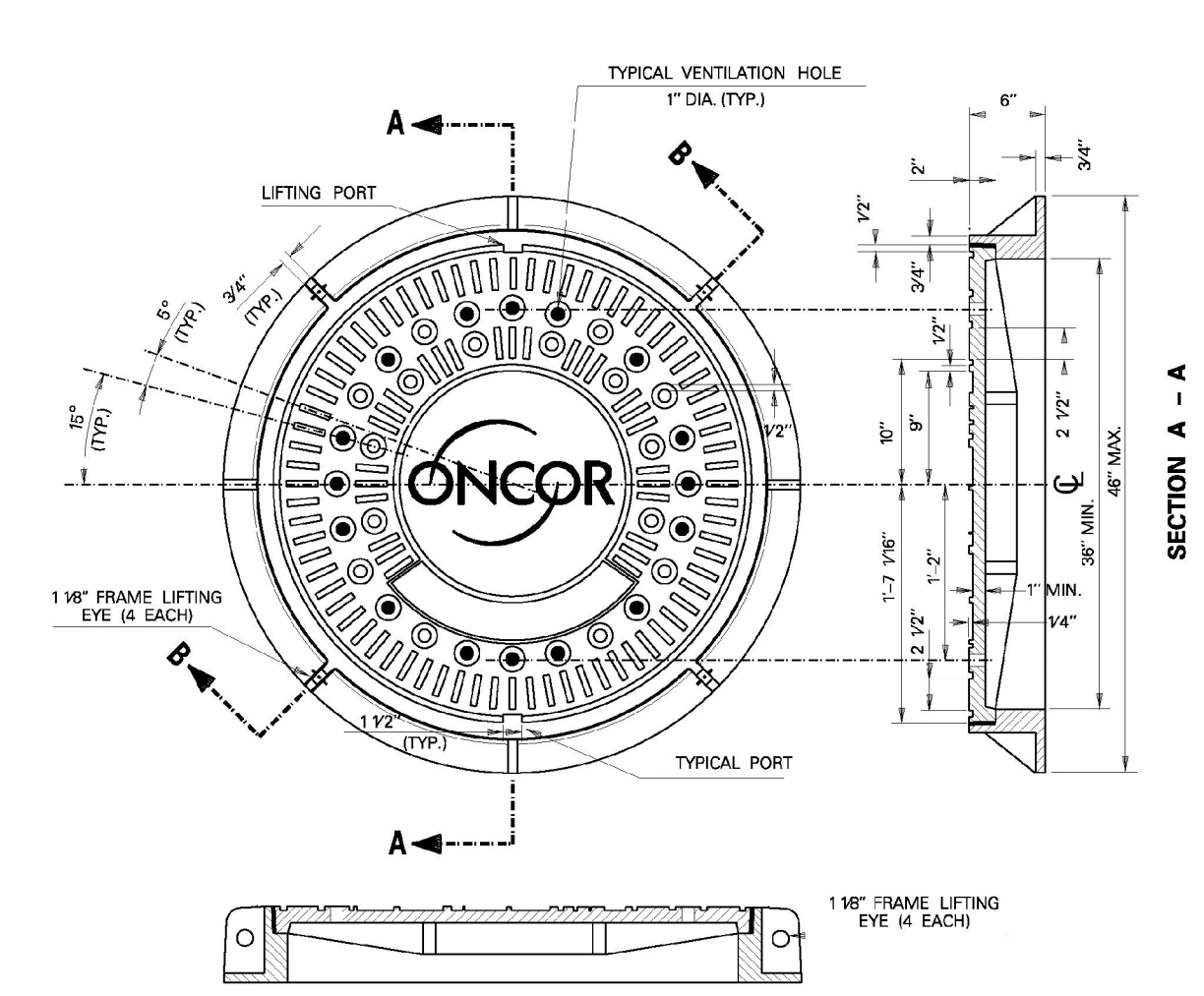
MANHOLE NECK, LADDER AND ENTRANCE PAD INSTALLATION

- NOTES:
1. EACH MANHOLE INSTALLATION SHOULD HAVE A MINIMUM 36 INCH NECK SECTION. PLEASE CONSULT WITH DISTRIBUTION STANDARDS IF A LESSER NECK IS NEEDED.
  2. "RAM-NEK" PRIMER
  3. COPOLYMER POLYPROPYLENE PLASTIC STEEL REINFORCED LADDER RUNG. (IF DESIGN CALLS FOR A FIXED LADDER INSTALLATION).
  4. IF DESIGN CALLS FOR A FIXED LADDER, THE CREW INSTALLING THE MANHOLE NECK SECTIONS SHALL INSTALL THE LADDER RUNGS. INSTALLATION INSTRUCTIONS ARE SUPPLIED IN THE PACKAGE WITH LADDER RUNG ASSEMBLY.
  5. TOP OF MANHOLE
  6. 7'-0" TO FLOOR OF MANHOLE

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	AS REQ.	12 IN. X 36 IN. PRECAST CONCRETE NECK SECTION.	320774	MNS36X12	
2	AS REQ.	18 IN. X 36 IN. PRECAST CONCRETE NECK SECTION.	320775	MNS36X18	
3	AS REQ.	24 IN. X 36 IN. PRECAST CONCRETE NECK SECTION.	320776	MNS36X24	
4	AS REQ.	36 IN. X 36 IN. PRECAST CONCRETE NECK SECTION.	320777	MNS36X36	
5	AS REQ.	COPOLYMER POLYPROPYLENE PLASTIC STEEL REINFORCED LADDER RUNG.	482911	MHSTEP	
6	AS REQ.	BAR, STEEL, REINFORCING, DEFORMED, 3/8 X 20 FT. ASTM A-615, GRADE 60.	303780		

APPROVED BY

205 - 485 MANHOLE COVER AND FRAME DETAIL 205 - 485



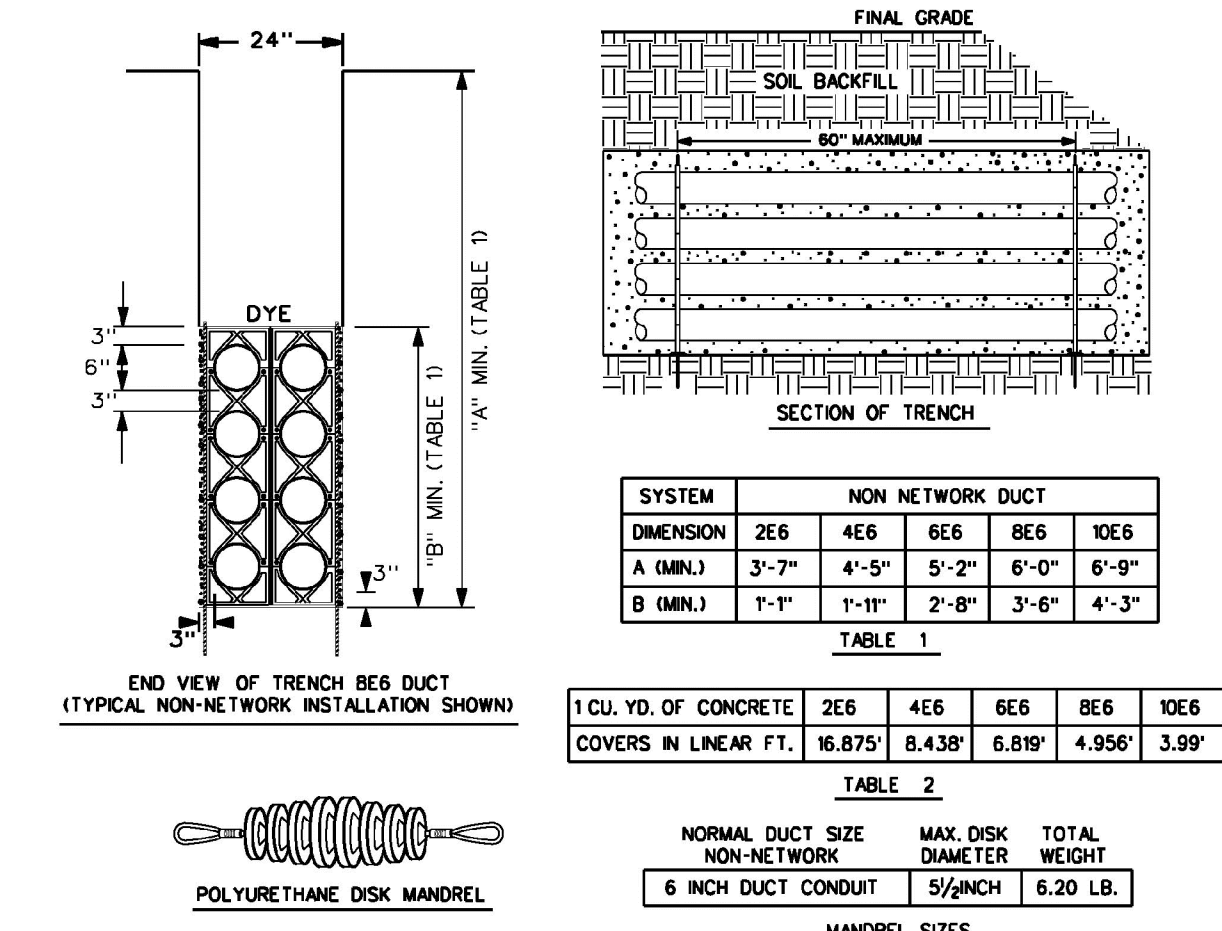
MANHOLE COVER AND FRAME DETAIL

- NOTES:
1. BEARING SURFACE BETWEEN COVER AND FRAME SHALL BE MACHINED.
  2. COVER AND FRAME SHALL BE CONSTRUCTED TO AASHITO H-20 FULL TRAFFIC RATING LOAD REQUIREMENTS.
  3. COVER AND FRAME SHALL BE CONSTRUCTED OF GRAY CAST IRON CONFORMING TO ASTM A818-LATEST REVISION CLASS 55B.
  4. MANHOLE COVER AND FRAME SHALL NOT EXCEED 700 LBS.

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	1	MANHOLE COVER AND FRAME, INTENTIONAL TRAFFIC RATED.	327563		

APPROVED BY

205 - 490 GENERAL GUIDELINES FOR CONCRETE ENCASED DUCTBANK INSTALLATIONS (NON-NETWORK) 205 - 490

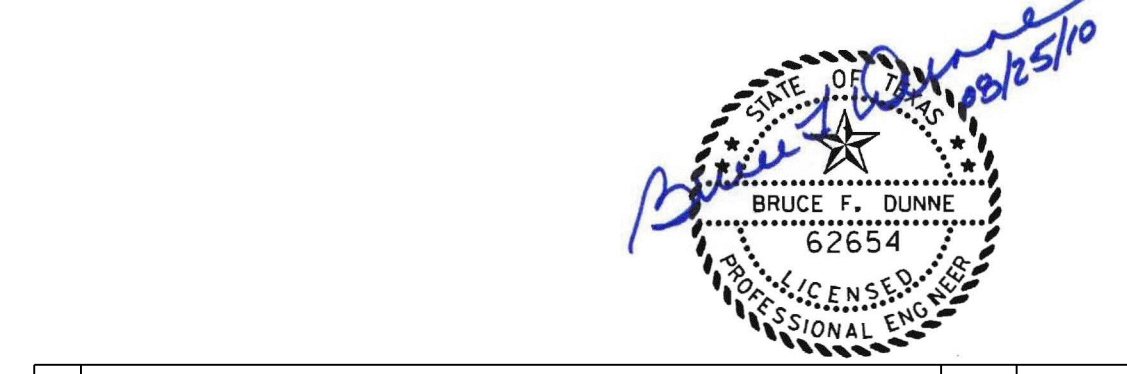


GENERAL GUIDELINES FOR CONCRETE ENCASED DUCTBANK INSTALLATIONS (NON-NETWORK)

- NOTES:
1. CONDUIT IS TO BE PVC TYPE D9-80 FOR CONCRETE ENCASEMENT.
  2. ALL CONCRETE OF THE ENCASEMENT IS TO HAVE A COMPRESSION TEST STRENGTH OF 3000 PSI AT TWENTY EIGHT DAYS.
  3. INSTALL DUCT SPACERS "CARLON (SNAP-LOC) TYPE" OR EQUAL EVERY 5 FEET ALONG THE ENTIRE LENGTH OF THE DUCT.
  4. THE DUCT SPACERS ARE TO PROVIDE 3 INCHES OF VERTICAL AND HORIZONTAL SEPARATION BETWEEN CONDUITS FOR NON-NETWORK SYSTEM INSTALLATIONS.
  5. THE DUCT SPACERS ARE TO PROVIDE 1 1/2 INCHES OF VERTICAL AND HORIZONTAL SEPARATION BETWEEN CONDUITS FOR NETWORK SYSTEM INSTALLATIONS.
  6. THE DUCT LINE SHALL BE SECURED TO EARTH AT EACH SPACER LOCATION PRIOR TO POURING CONCRETE TO PREVENT THE CONDUIT FROM FLOATING.
  7. ALL CONDUIT/DUCT SPANS SHOULD BE INSTALLED WITH A SLOPE TOWARD EACH OF THE MANHOLES TO PROVIDE DRAINAGE OF WATER TO A PUMPABLE LOCATION.
  8. ALL BACKFILL OF A CONDUIT/DUCT TRENCH SHALL BE REPLACED TO A MINIMUM COMPACTION OF 95%.
  9. RED POWDER CONCRETE DYE IS TO BE PLACED ON THE DUCT ENCASEMENT CAP IMMEDIATELY AFTER THE CONCRETE POUR HAS TAKEN PLACE TO AID WITH FUTURE LOCATES OF PRIMARY DUCT.
  10. CONDUITS FOR INCOMPLETE DUCT LINES (JUBS), ARE TO REMAIN EXPOSED FROM THE ENCASEMENT FOR FUTURE RETRIEVAL, BE CAPPED WATERTIGHT AND HAVE AN ELECTRONIC MARKER INSTALLED.
  11. EACH CONDUIT OF A CONCRETE ENCASED DUCT SHALL BE INSPECTED BY PULLING A DISK MANDREL OF PROPER SIZE THRU ITS ENTIRE LENGTH AS SOON AS POSSIBLE AFTER ITS ENCASEMENT HAS BEEN POURED TO INSURE ITS INTERITY.
  12. EACH 6 OR 8 INCH CONDUIT OF AN ENCASED DUCT IS TO HAVE A 6000 LB. PULL TAPE INSTALLED FOR FUTURE CABLE PULLING.

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	AS REQ.	DUCT BANK, CONDUIT, 6 IN., LESS SPACERS & CONCRETE, NON-NETWORK.	326090	DB2X	
2	AS REQ.	FITTING, CONDUIT, PVC, SPACER, BASE/5/8 IN. NON-NETWORK/4 EACH.	320772	CSPIRB	
3	AS REQ.	FITTING, CONDUIT, PVC, SPACER, INTERMEDIATE, 6 INCH, NON-NETWORK/4 EACH.	320773	CSPIRIB	
4	AS REQ.	ROPE, PULL TAPE, 6000 LB STRENGTH, PRELUBRICATED, (PER FOOT)	397616	PTAPE60	
5	AS REQ.	DUCT MARKER, BURIED, DEVICE, ELEK TUNED, RED, (EACH)	307391	ELECMKRC	
6	AS REQ.	CONDUIT PROOFING MANDREL			

APPROVED BY

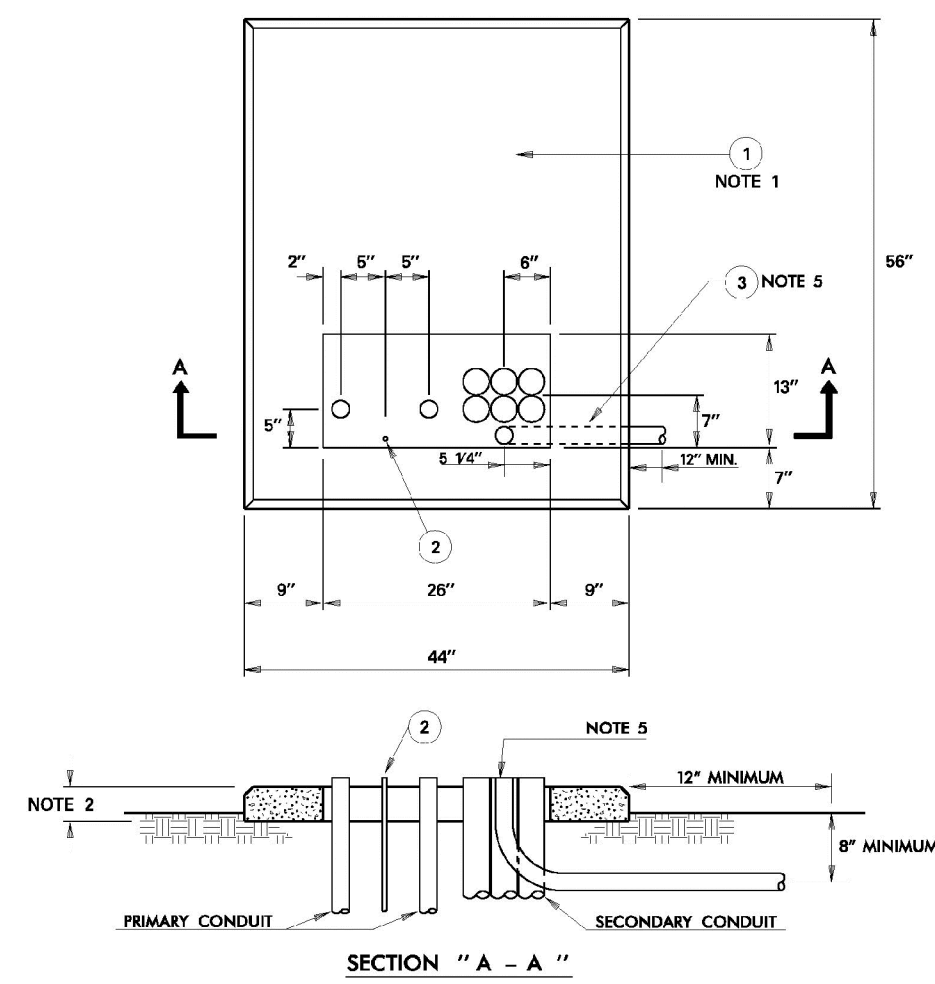


ADDISON TOWN OF ADDISON DALLAS COUNTY, TEXAS  
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

DUCT BANK ELECTRIC DETAILS

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	84

**TRANSFORMER PAD - PRECAST SINGLE PHASE DEADFRONT (TYPE I)/LIVEFRONT**

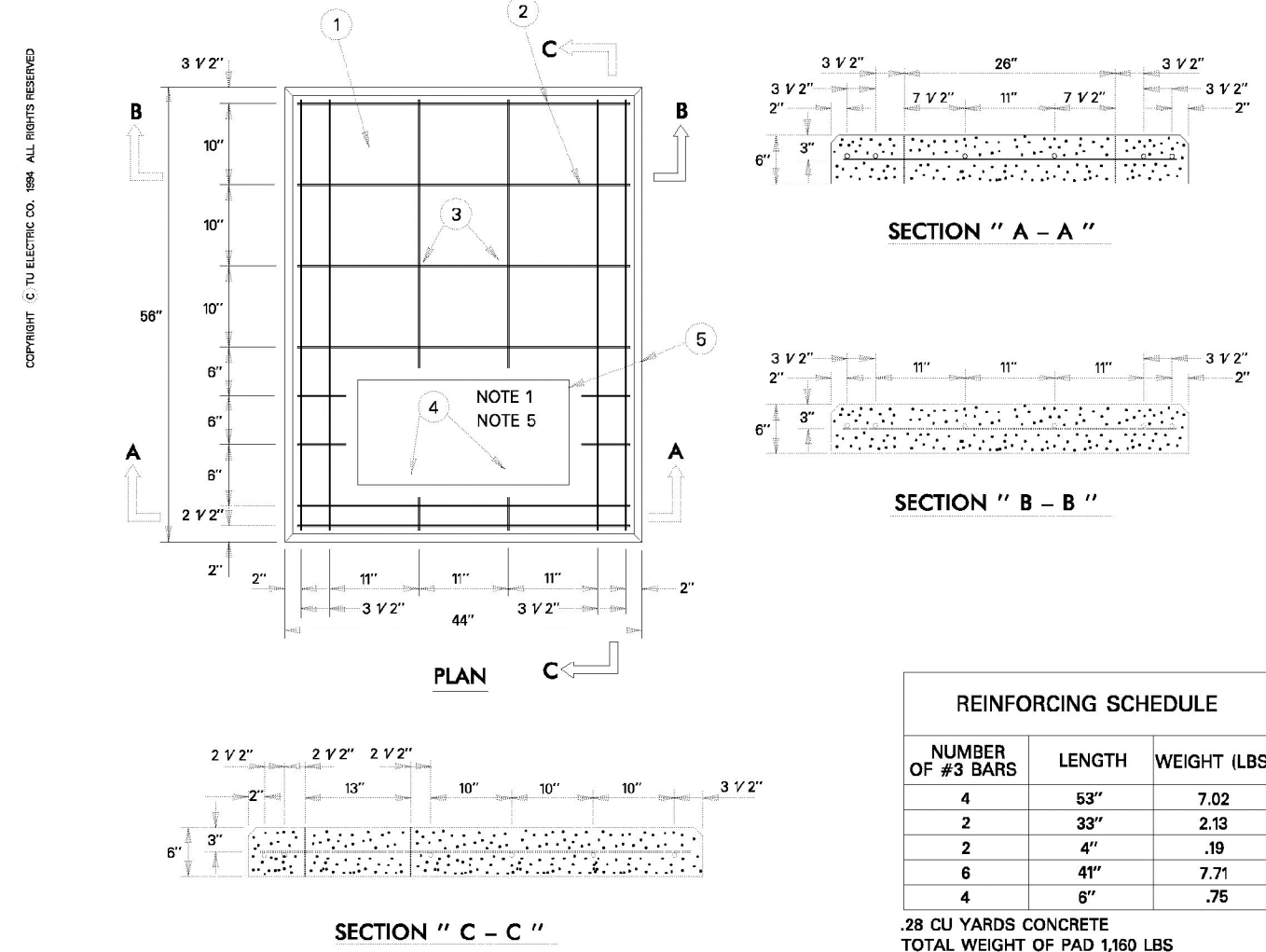


- NOTES:**
- A PRECAST CONCRETE PAD SHALL BE USED UNLESS LIFTING EQUIPMENT IS UNAVAILABLE OR CANNOT ACCESS THE SITE. USE POLYMER PADS ONLY WHEN SETTING PAD BY HAND.
  - THIS DIMENSION IS 6 INCHES FOR PRECAST CONCRETE PAD AND 4 INCHES FOR POLYMER CONCRETE PADS.
  - REFERENCE STANDARD 202-350 FOR FOREIGN UTILITY COMPANY EQUIPMENT GROUND.
  - PIERS SHALL BE INSTALLED UNDER PAD WHEN DIRT HAS BEEN DISTURBED UNDER THE LOAD BEARING AREA OF THE PAD. REFERENCE STANDARD 205-185 FOR PIER INSTALLATION.
  - THE 3" FLEX CONDUIT (TSN 308205) SHALL HAVE A MINIMUM OF 8" OF COVER AS IT EXITS ON THE RIGHT HAND SIDE OF THE TRANSFORMER PAD.

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	1	PAD, TRANSFORMER, PRECAST CONCRETE, 44 x 56 IN.	304037		PPRCCI
1	1	PAD, TRANSFORMER, POLYMER CONCRETE, 44 x 56 IN.	319332		PPROCTI
2	1	ROD, GROUND 5/8" x 8' CU CLAD	204-100		
3	3	CONDUIT, HDPE, 1.5X, 3"	306209		

APPROVED BY TXU Electric Delivery

**TRANSFORMER PAD POURED IN PLACE FOR SINGLE PHASE TRANSFORMERS**



**REINFORCING SCHEDULE**

NUMBER OF #3 BARS	LENGTH	WEIGHT (LBS)
4	53"	7.02
2	33"	2.13
2	4"	.19
6	41"	7.71
4	51"	.76

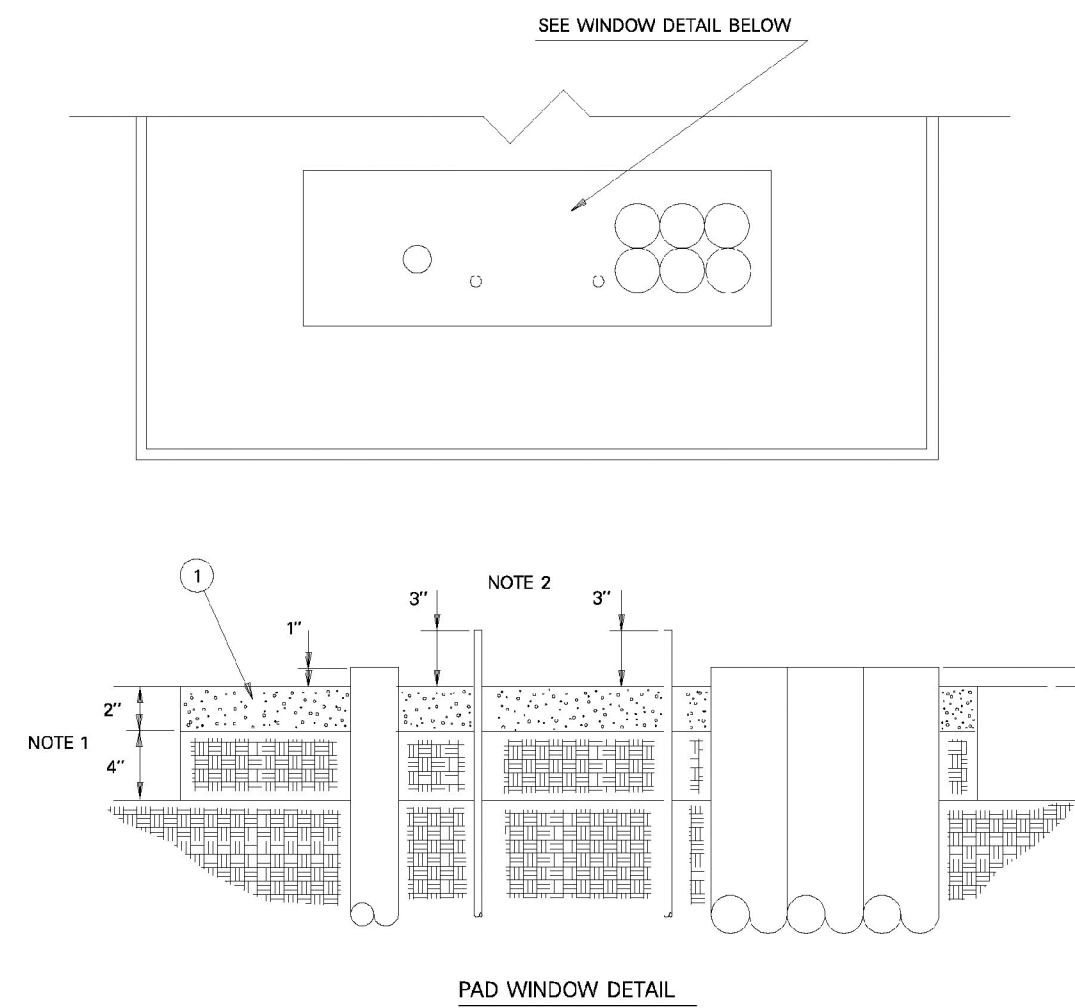
28 CU YARDS CONCRETE  
TOTAL WEIGHT OF PAD 1,180 LBS

- NOTES:**
- SEE STANDARD 205-150 OR 205-155 FOR LOCATIONS OF CONDUITS AND GROUND ROD.
  - PIERS SHALL BE INSTALLED UNDER PAD WHEN DIRT HAS BEEN DISTURBED UNDER THE LOAD BEARING AREA OF THE PAD. REFERENCE STANDARD 205-185 FOR PIER INSTALLATION.
  - ALL STEEL TO BE A MINIMUM OF 1/2" FROM SURFACE OF CONCRETE.
  - ALL CHAMFERS TO BE 1/2" x 45 DEGREES. ROUNDING OF EDGES WITH ROUNDING TROWEL IS ACCEPTABLE IN LIEU OF CHAMFERING.
  - REFERENCE STANDARD 202-350 FOR FOREIGN UTILITY COMPANY EQUIPMENT GROUND.
  - SEE ALSO STANDARD 205-305 FOR GENERAL NOTES.

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	0.28CY	CONCRETE			
2	47 FT	ROD, REINFORCING 3/8 IN.	303750		
3	AS REQD	WIRE, #16 STEEL, TIE SOLID BARE BLACK	31738		PCIPX
4	1	ROD, GROUND 5/8" x 8' CU	204-100, 150		
5	AS REQD	LUMBER			

APPROVED BY TU ELECTRIC

**GROUTING DETAIL FOR TRANSFORMER PAD WINDOWS**

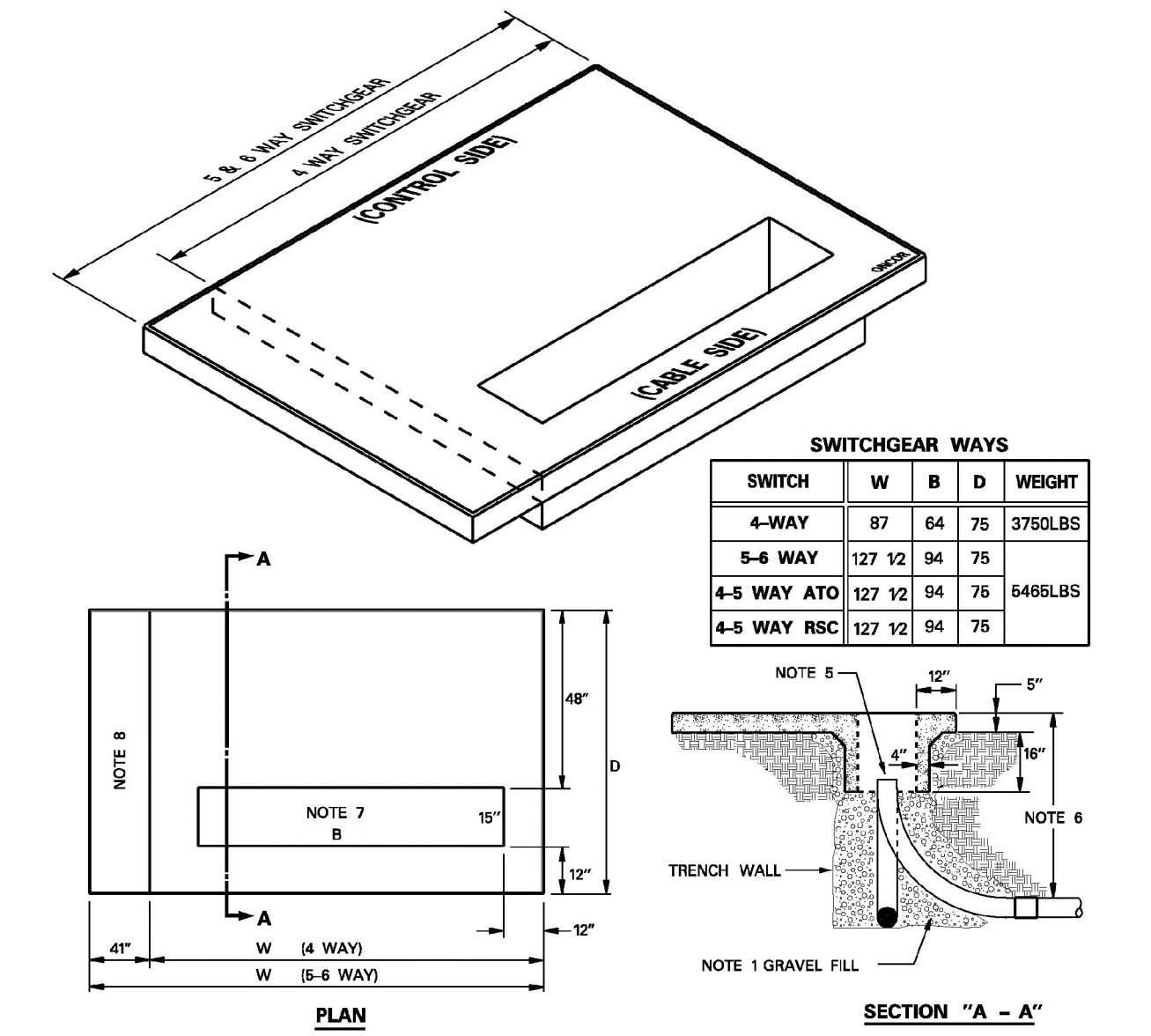


- NOTES:**
- FILL IN PAD WINDOW WITH 4 INCHES OF EARTH BACKFILL AND 2" OF GROUT.
  - GROUND RODS SHALL EXTEND A MAXIMUM OF 3 INCHES ABOVE GROUTING TO ASSURE ADEQUATE DRIVEN DEPTH AND ALLOW FOR ADEQUATE CONNECTING SPACE.

ITEM	QTY	DESCRIPTION	TSN	AUN	MACRO AUN
1	AS REQD	GROUT			

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**PRECAST DEEP WELL PAD FOR 25KV DEAD FRONT SWITCHGEAR**



**SWITCHGEAR WAYS**

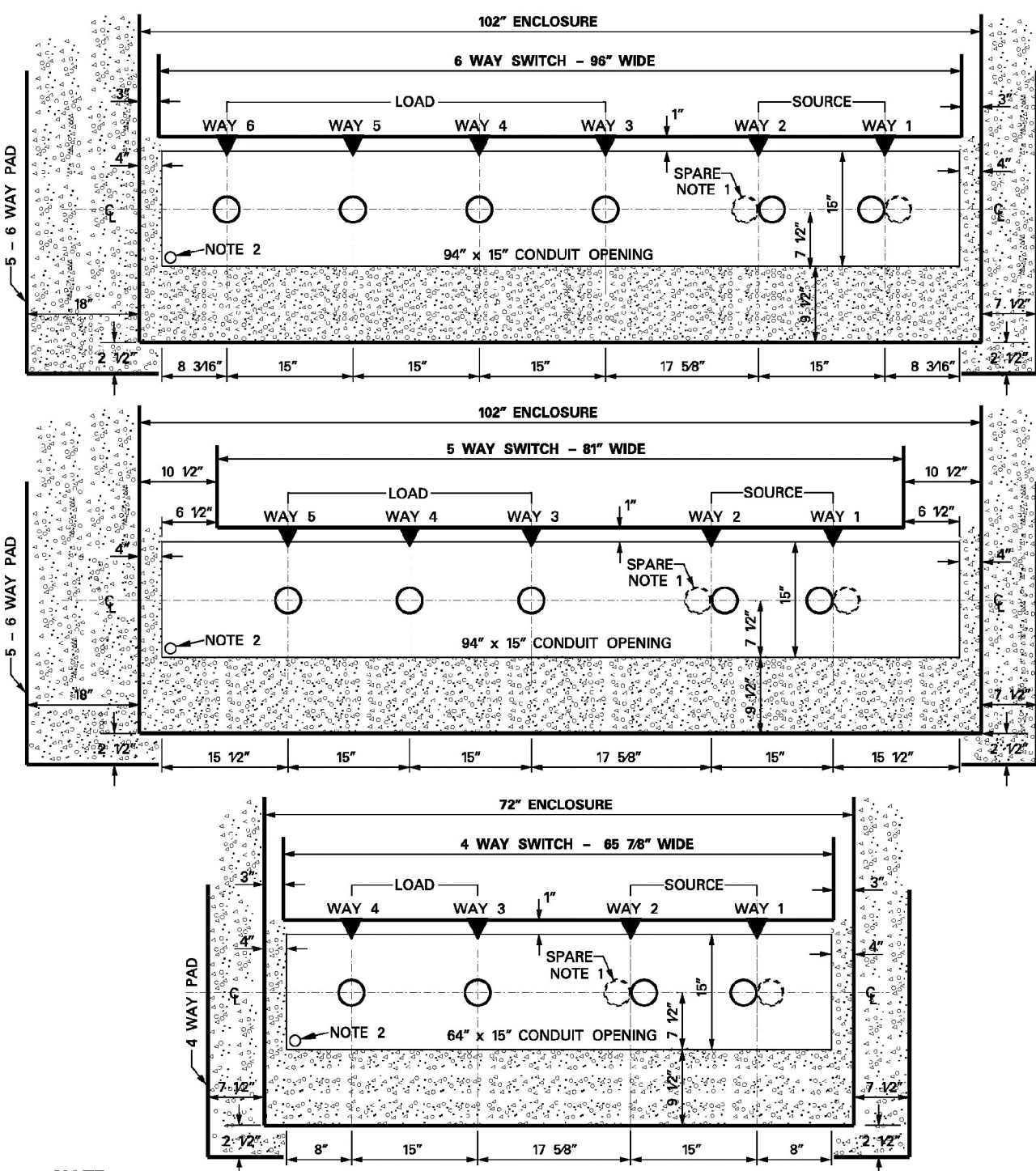
SWITCH	W	B	D	WEIGHT
4-WAY	87	64	75	3750LBS
5-6 WAY	127	12	94	75
4-5 WAY ATO	127	12	94	6485LBS
4-5 WAY RSC	127	12	84	75

- NOTES:**
- FOR STABILIZATION AND DRAINAGE INSTALL SMALL TO MEDIUM GRAVEL UNDER PAD DEEP WELL.
  - FOR CLEARANCES ON ALL SIDES OF THE SWITCHGEAR SEE REFERENCE DRAWING 202-100.
  - FOR PIER INSTALLATION SEE DRAWING #205-301.
  - LEFT PAD WITH PROVIDED LIFTING POINTS ONLY. SEE LIFTING RINGS INSIDE WALL OF DEEP WELL.
  - CONDUIT NOT TO EXTEND MORE THAN 3" ABOVE BOTTOM OF DEEP WELL.
  - MINIMUM TRENCH DEPTH AT PAD TO TOP OF CONDUIT FOR THE FOLLOWING CONDUITS:  
6" CONDUIT - 61"  
4" CONDUIT - 47"  
2" CONDUIT - 40"
  - REFER TO STANDARD DWG #205-346 FOR CONDUIT LOCATIONS.
  - ADDITIONAL AREA FOR CONTROL CABINET WHEN MOUNTING ATO (AUTO-TRANSFER) OR (RSC) REMOTE SUPERVISORY CONTROLLED SWITCHGEAR.

ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	1	PAD, PRECAST, 20" DEEP WELL, 4-WAY DEAD FRONT SWITCHGEAR	458291		PPDW25DF
2	1	PAD, PRECAST, 20" DEEP WELL, 5-WAY DEAD FRONT SWITCHGEAR	460221		PPDW25DF6

APPROVED BY ONCOR

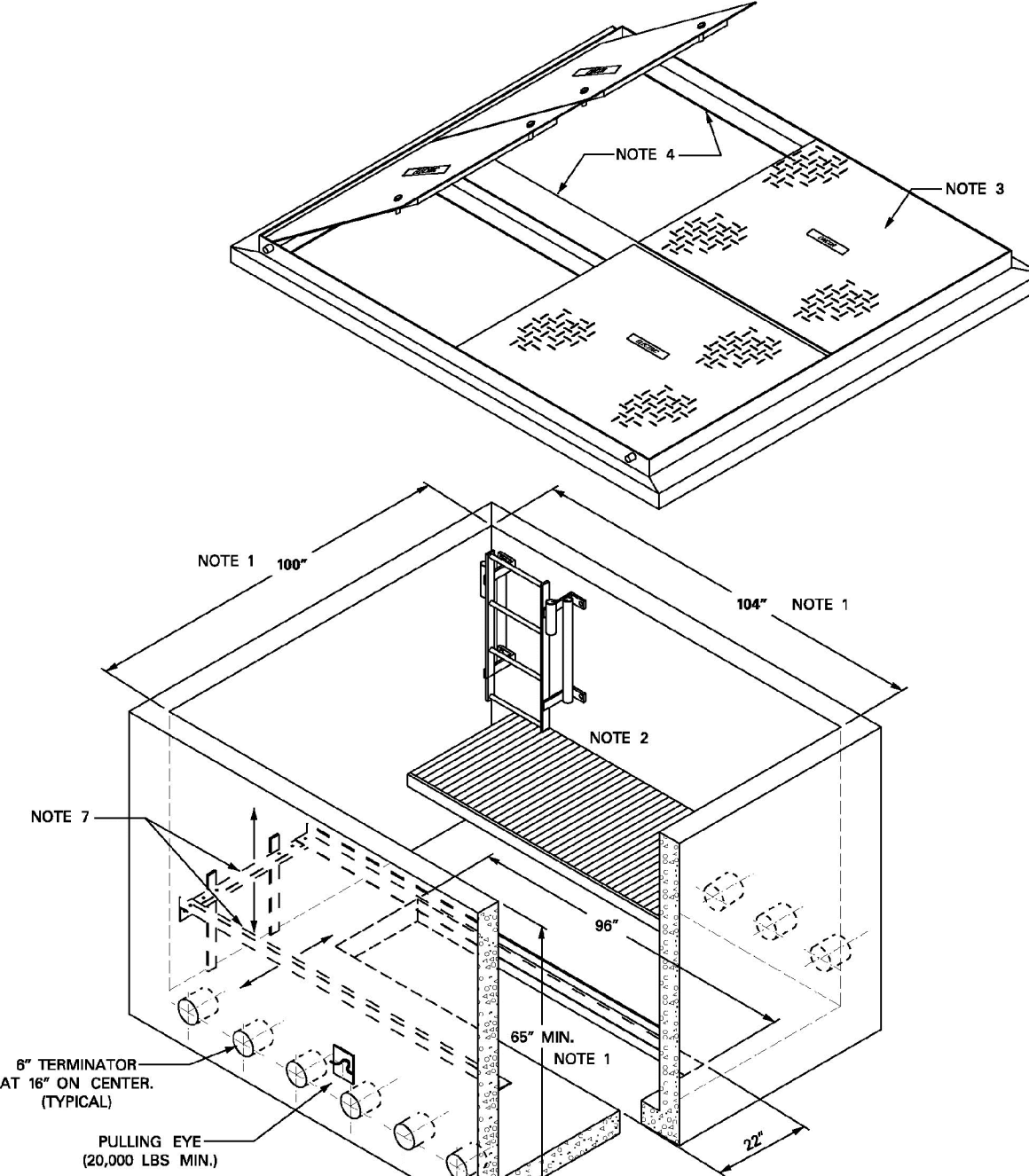
**CONDUIT LOCATIONS DEAD FRONT PAD MOUNT 25KV VISTA SWITCHGEAR**



- NOTE:**
- CONDUIT SHALL BE CENTERED ON CENTER BUSHING OF EACH SWITCHED WAY. IF SPARE CONDUIT IS REQUIRED, BOTH SHALL BE CENTERED AS SHOWN ON CENTER BUSHING OF SWITCHED WAY.
  - FOR PADS PLUMBED INTO DUCT BANKS, INSTALL 3" COMMUNICATION CONDUIT FROM MANHOLE TO FRONT LEFT CORNER OF THE CONDUIT OPENING OF PAD.

APPROVED BY ONCOR

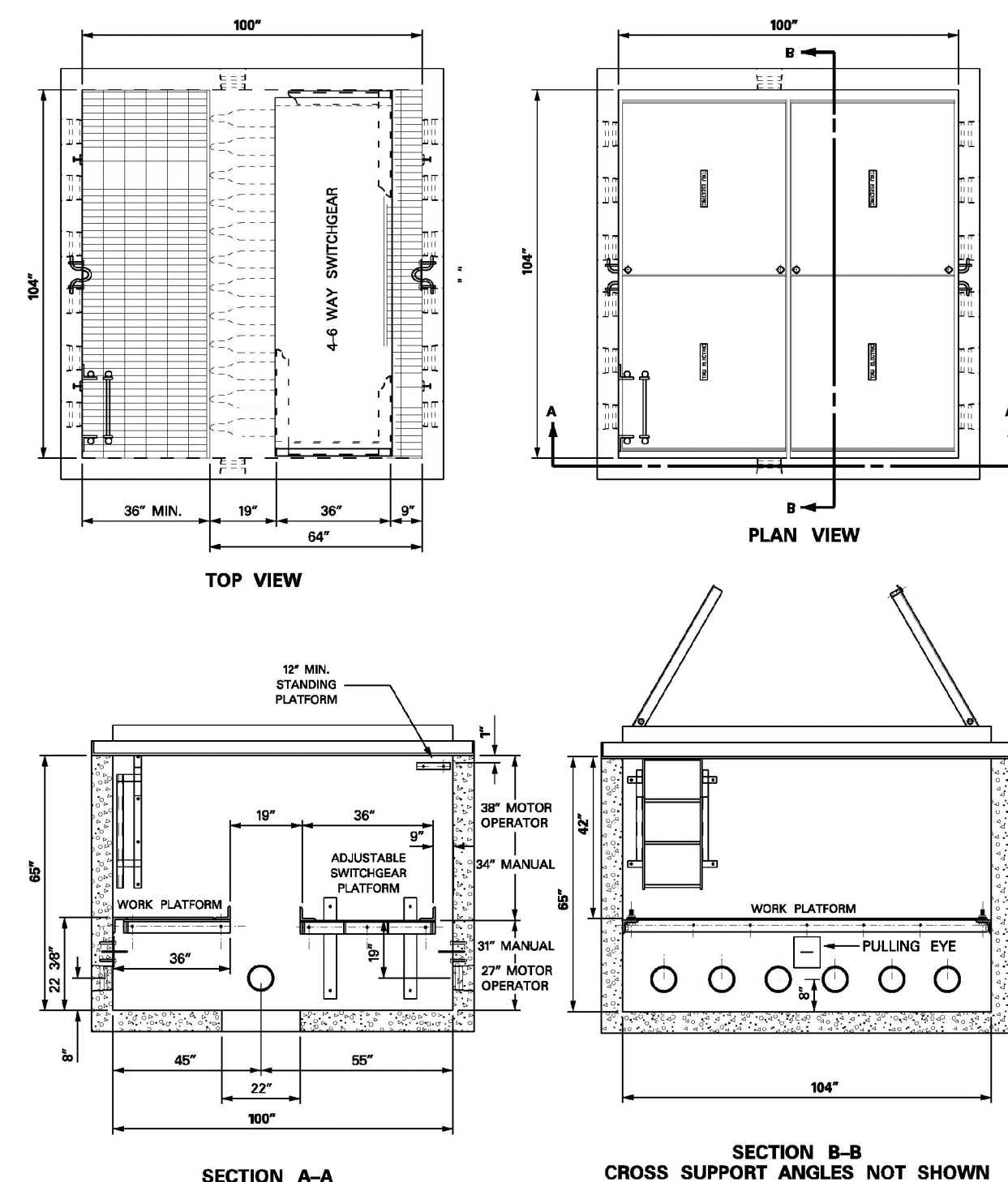
**PRECAST VAULT FOR SUBSURFACE DEAD FRONT SWITCHGEAR**



- NOTE:**
- ALL DIMENSIONS SHOWN ARE MINIMUM INSIDE MEASUREMENTS. CONTACT DISTRIBUTION STANDARDS FOR ACTUAL MFG DIMENSIONS.
  - LADDER PLATFORMS, SUPPORT ANGLES AND COVER ARE PRE-INSTALLED.
  - NON-METALLIC TORSION ASSISTED COVERS.
  - REMOVABLE COVER AND SUPPORT BEAM.
  - VERTICAL LOADS TO COVER SHALL NOT EXCEED 16,000LBS LIVE WHEEL WEIGHT.
  - VAULTS SHALL NOT BE INSTALLED IN LOCATIONS DESIGNATED ACCESSIBLE BY VEHICULAR TRAFFIC.
  - FOURWAY ADJUSTABLE SWITCHGEAR PLATFORM.
  - SEE ONCOR DISTRIBUTION SPECIFICATION #311-220 FOR ADDITIONAL INFORMATION.

APPROVED BY ONCOR

**PRECAST VAULT FOR SUBSURFACE DEAD FRONT SWITCHGEAR**



ITEM	QTY	DESCRIPTION	TSN/REF	CU	MU
1	1	VAULT, PRE-CAST, SUBSURFACE, 6 WAY DF SWITCHGEAR	45111		VAULTSWGR
2	1	DRIVEN GROUND (2) DF SWITCHGEAR			GDFS
3					MVSWGR

APPROVED BY ONCOR

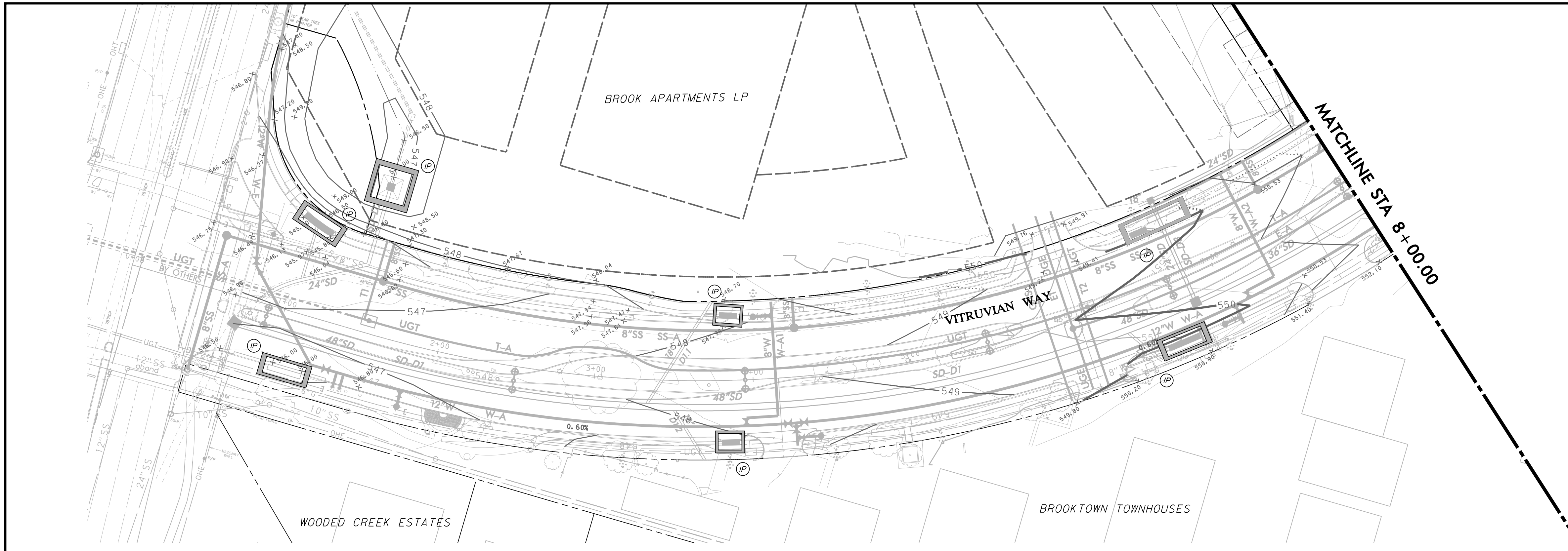
NO.	REVISION	BY	DATE

**TOWN OF ADDISON**  
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PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



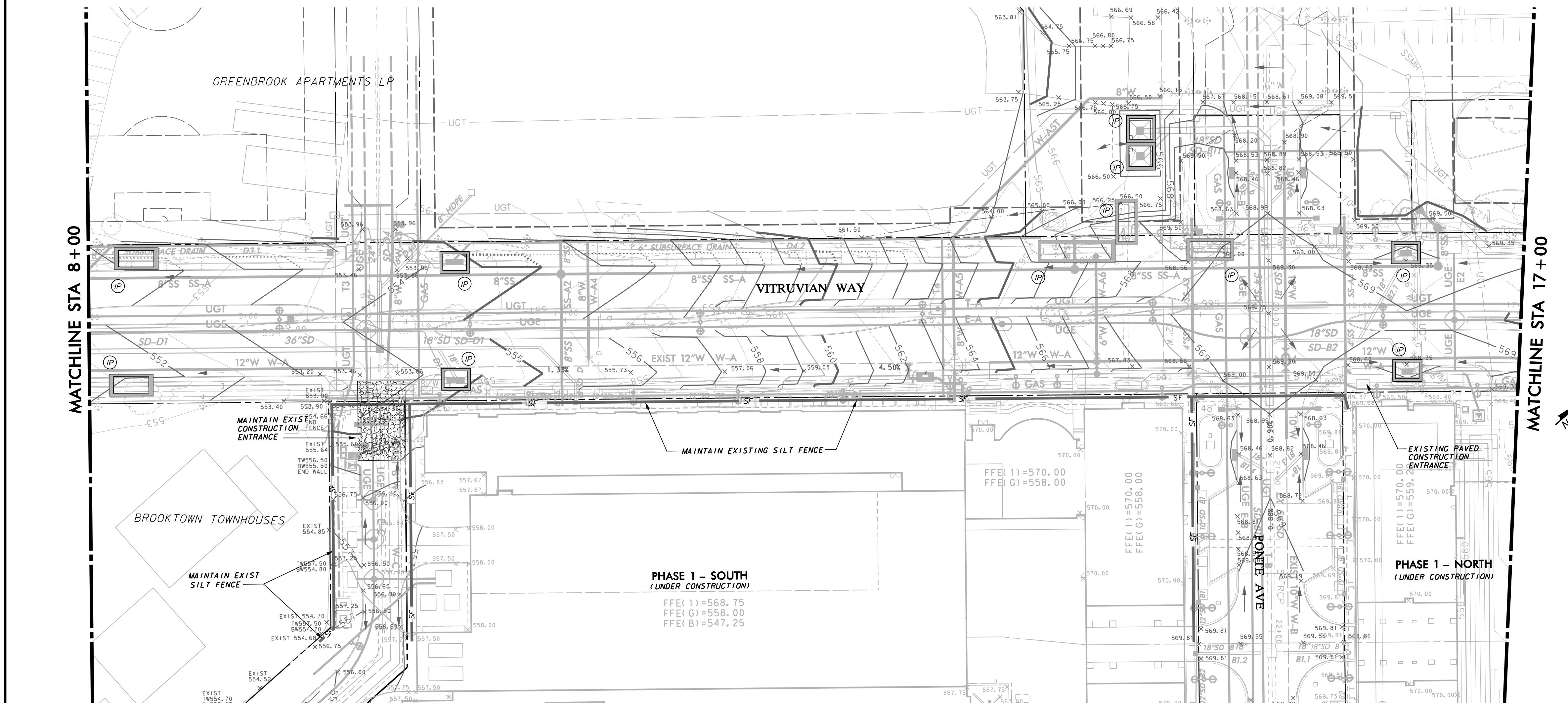
**LEGEND**

- SILT FENCE: — SF —
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- INLET PROTECTION: (IP) [Symbol]
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GRAPHIC SCALE IN FEET  
SCALE: 1"=40'



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SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE 1127' NORTH OF VITRUVIAN WAY.

BM #2 REF. ELEVATION = 547.84  
SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION OF VITRUVIAN WAY AND MARSH LANE.

BRUCE F. DUNNE  
62654  
LICENSED PROFESSIONAL ENGINEER

GRAPHIC SCALE IN FEET  
SCALE: 1"=40'

NO.	REVISION	BY	DATE

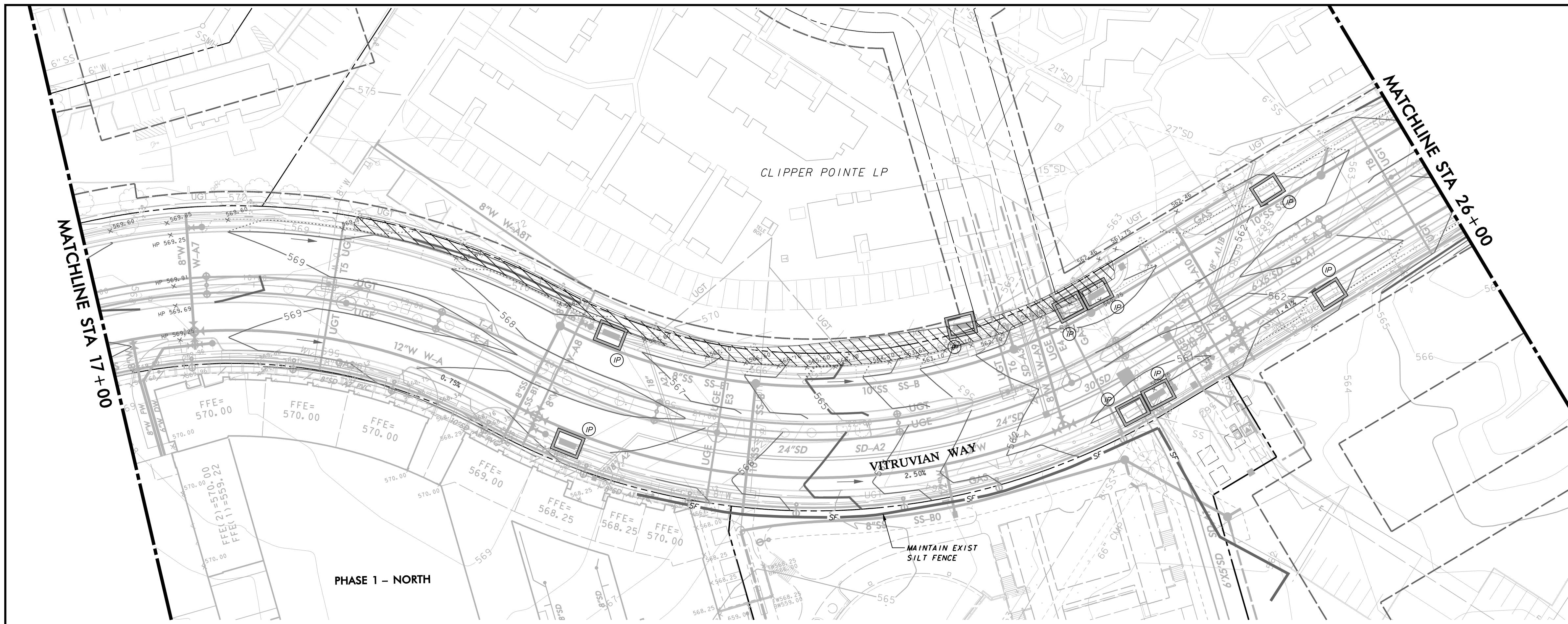
**ADDISON TOWN OF ADDISON DALLAS COUNTY, TEXAS**

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS VITRUVIAN WAY & PONTE AVENUE**

**EROSION & SEDIMENT CONTROL PLAN - VW - STA 0+00.00 TO STA 17+00.00**

**icon Consulting Engineers, Inc.** 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	86



**LEGEND**

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- EROSION CONTROL BLANKET CURLEX II OR APPROVED EQ. NATURAL COLOR [Symbol]

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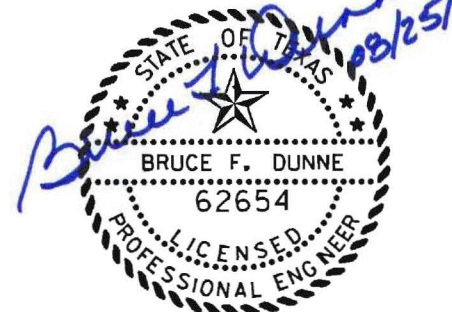
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**Addison!** TOWN OF ADDISON  
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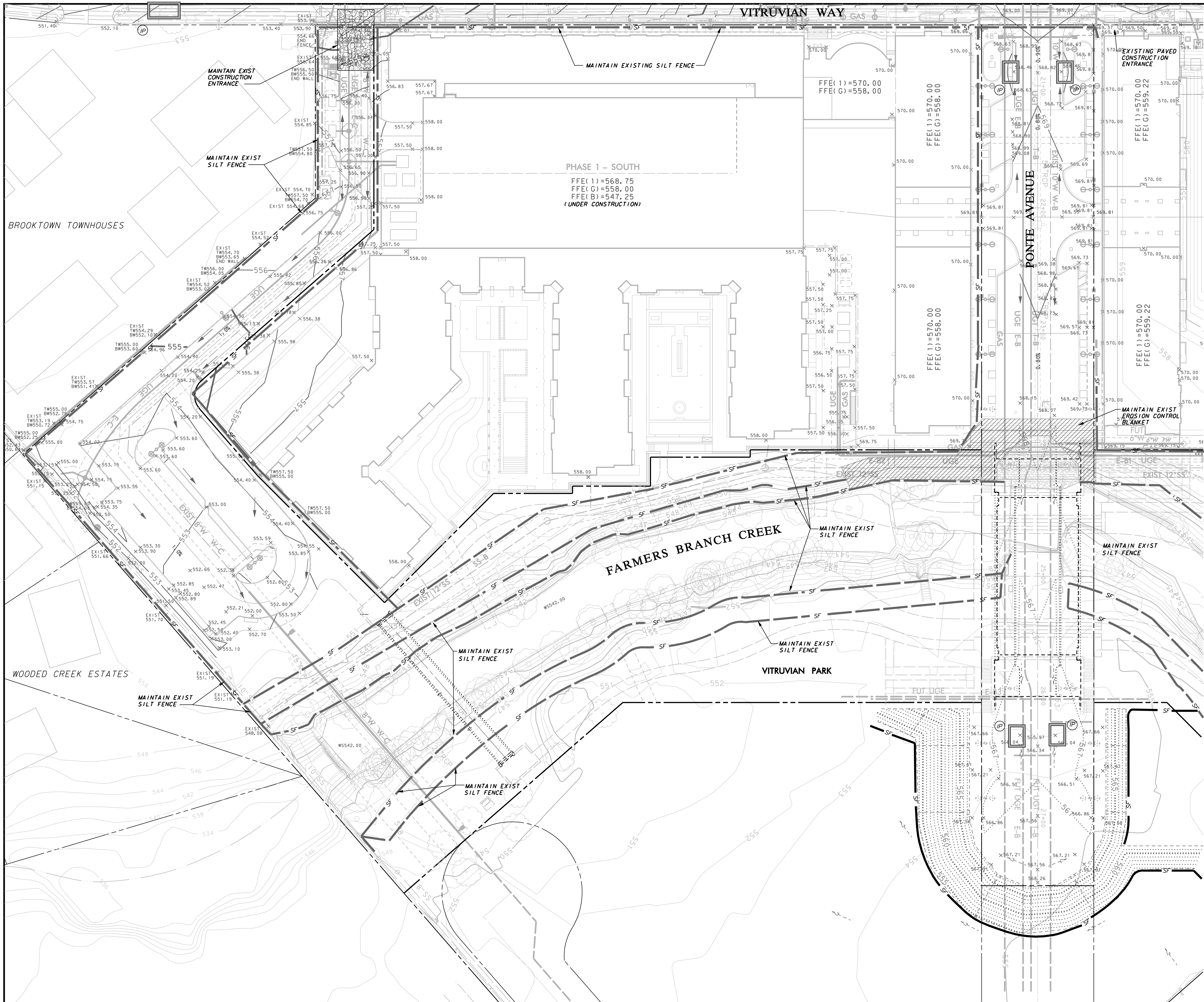
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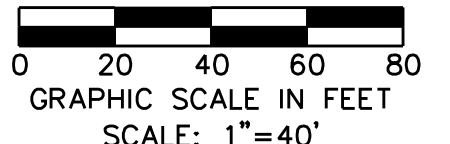
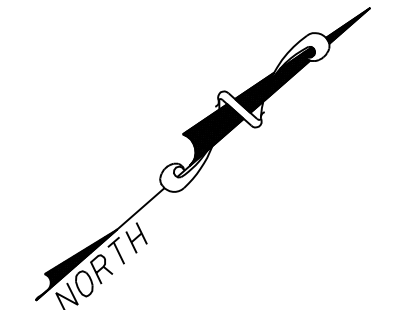
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PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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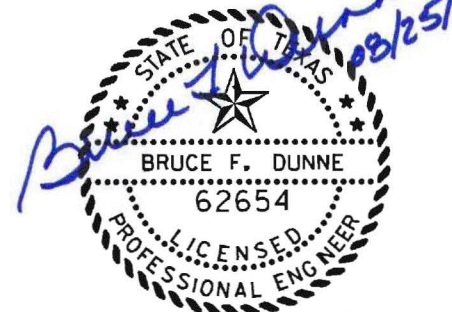
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 SQUARE CUT IN TOP OF CURB, SOUTH MEDIAN END NOSE, MARSH LANE  
 1127' NORTH OF VITRUVIAN WAY.  
 BM #2 REF. ELEVATION = 547.84  
 SQUARE CUT IN TOP OF CURB, NORTH MEDIAN END NOSE, AT INTERSECTION  
 OF VITRUVIAN WAY AND MARSH LANE.

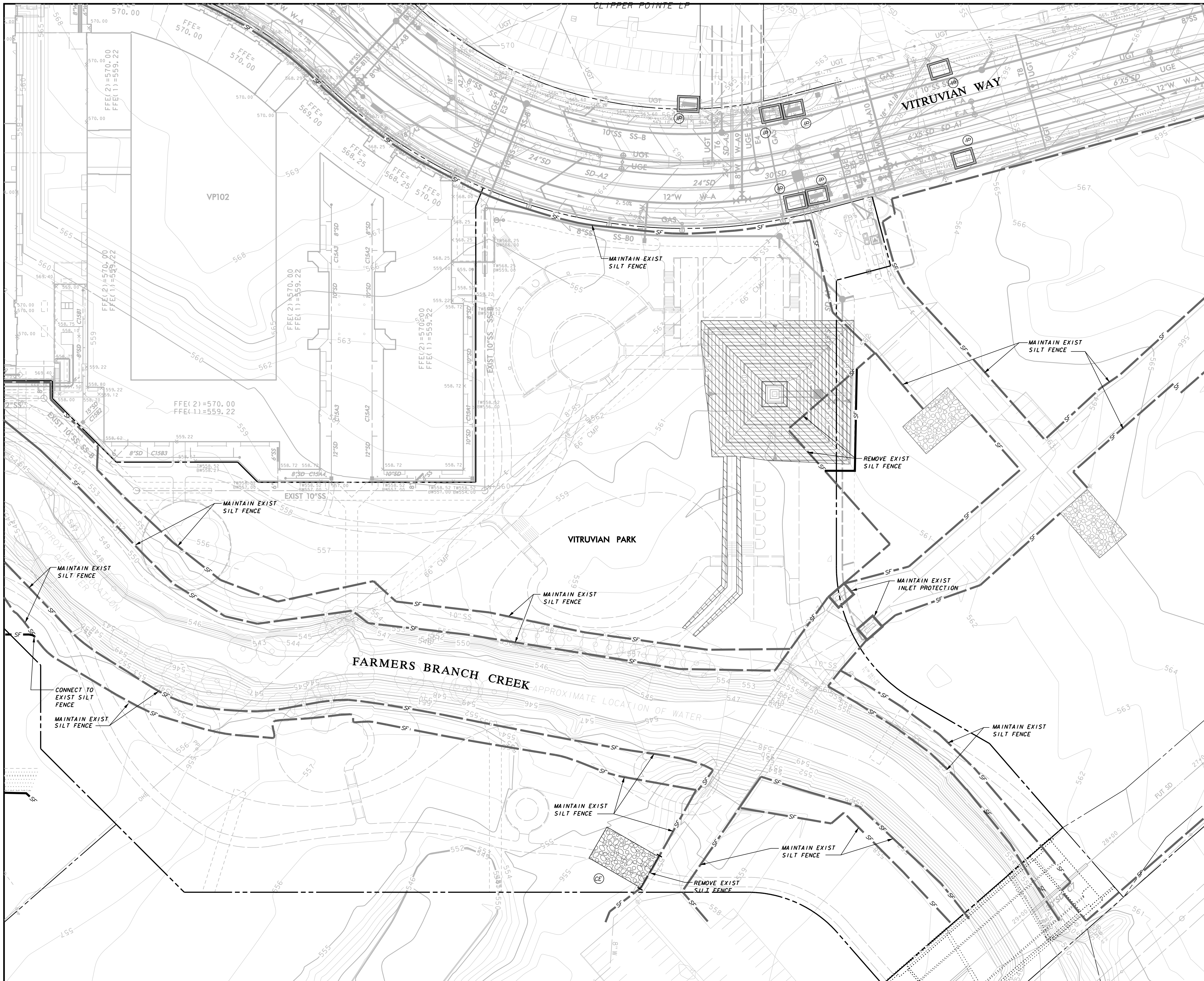


NO.	REVISION	BY	DATE
1			

**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS  
 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE  
 EROSION & SEDIMENT CONTROL PLAN  
 SOUTH

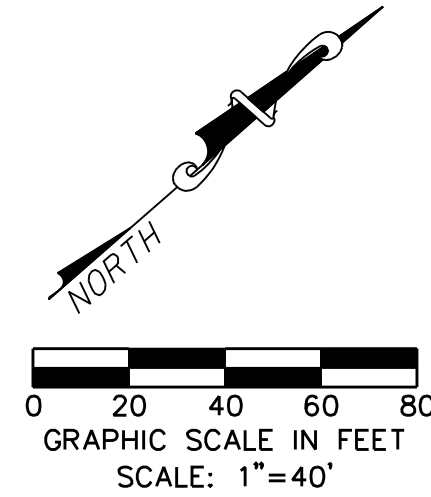
<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
			FILE
			PW# 2009-01
			SHEET
			88

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



**LEGEND**

- SILT FENCE
- EXISTING SILT FENCE
- INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET CURLEX II OR APPROVED EQ. NATURAL COLOR



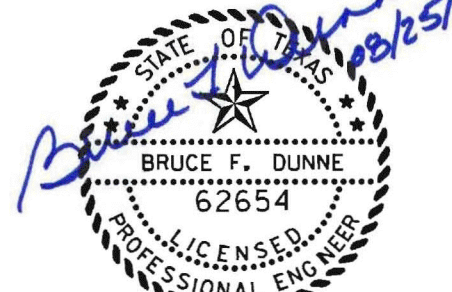
**EROSION CONTROL NOTES**

1. **GENERAL CONSTRUCTION NOTES:** REFER TO SHEET 3 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.
2. **SWPPP COMPLIANCE:** THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT. IN ADDITION TO CONSTRUCTING THOSE ITEMS INDICATED ON THE PLAN SHEETS, COMPLIANCE WITH THE SWPPP INCLUDES CONFORMANCE TO CERTAIN PRACTICES AND PROCEDURES (IDENTIFIED IN THE SWPPP) DURING PROJECT CONSTRUCTION. THE SWPPP PLANS AND DOCUMENTS ARE PROVIDED FOR THE SOLE BENEFIT OF THE CONTRACTOR AS A PLANNING TOOL FOR COMPLYING WITH THE ENVIRONMENTAL REGULATIONS OF THIS PROJECT. THE CONTRACTOR IS EXPECTED TO PROVIDE, EXPAND, SUBMIT AND MONITOR A FULL COMPREHENSIVE SWPPP BEYOND WHAT IS HEREIN PROVIDED.
3. **BMP INSTALLATION:** PRIOR TO COMMENCING GRADING OPERATIONS, THE CONTRACTOR SHALL INSTALL ALL SWPPP MEASURES AND DEVICES AS INDICATED ON THE EROSION & SEDIMENT CONTROL PLAN. ALL SWPPP MEASURES AND DEVICES SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND DETAILS SHOWN IN THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS CONSTRUCTION "BEST MANAGEMENT PRACTICES" (BMP) MANUAL, OR AS MODIFIED BY THE CONTRACT DOCUMENTS.
4. **CLEANING, REPAIR AND MAINTENANCE:** THE CONTRACTOR SHALL REFER TO THE SWPPP FOR SEQUENCING OF CONSTRUCTION, INSTALLATION OF NEW EROSION CONTROL DEVICES AND CLEANING, REPAIR AND MAINTENANCE OF EXISTING EROSION CONTROL DEVICES. THE CONTRACTOR SHALL REUSE, RELOCATE AND/OR ADD DEVICES TO REFLECT ACTUAL SITE CONDITIONS AND TO ACCOMMODATE LOCATIONS FOR CONSTRUCTION TRAILER AREAS, STORAGE AREAS, FUELING AREAS, TOILETS, TRASH RECEPTACLES AND WASHOUT AREAS. ANY ACCIDENTAL RELEASE OF SEDIMENT OR POLLUTANTS FROM THE SITE SHALL BE CLEANED BY THE CONTRACTOR.
5. **SITE ENTRY/EXIT LOCATIONS:** SITE ENTRY AND EXIT LOCATIONS SHALL BE MAINTAINED BY THE CONTRACTOR IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS MUST BE REMOVED IMMEDIATELY. WHEN WASHING OF VEHICLES IS REQUIRED TO REMOVE SEDIMENT PRIOR TO ENTRANCE TO A PUBLIC ROADWAY, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. ALL FINES IMPOSED FOR TRACKING ONTO PUBLIC ROADS SHALL BE PAID BY THE CONTRACTOR.
6. **PROTECTION OF ADJACENT PROPERTY:** CONTRACTOR SHALL ASSUME FULL LIABILITY FOR DAMAGE TO ADJACENT PROPERTIES AND/OR PUBLIC RIGHT-OF-WAY RESULTING FROM FAILURE TO FULLY IMPLEMENT AND EXECUTE ALL EROSION CONTROL METHODS AND PROCEDURES SHOWN AND NOTED IN THE PLANS AND SWPPP.
7. **RE-VEGETATION:** AT THE COMPLETION OF CONSTRUCTION OPERATIONS, ALL DISTURBED AREAS SHALL BE VEGETATED IN ACCORDANCE WITH THE SWPPP. THE CONTRACTOR SHALL PROVIDE HYDROMULCH SEEDING AND/OR SODDING FOR ALL DISTURBED AREAS IN ACCORDANCE WITH ALL GOVERNING AUTHORITIES' SPECIFICATIONS.
8. **BMP REMOVAL:** THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL SEDIMENT BARRIERS AND INLET PROTECTION AFTER VEGETATION HAS BEEN COMPLETED AND ALL AREAS OF THE SITE HAVE BEEN STABILIZED AND ACCEPTED BY THE GOVERNING AUTHORITIES AND THE ENGINEER.

**WARNING**

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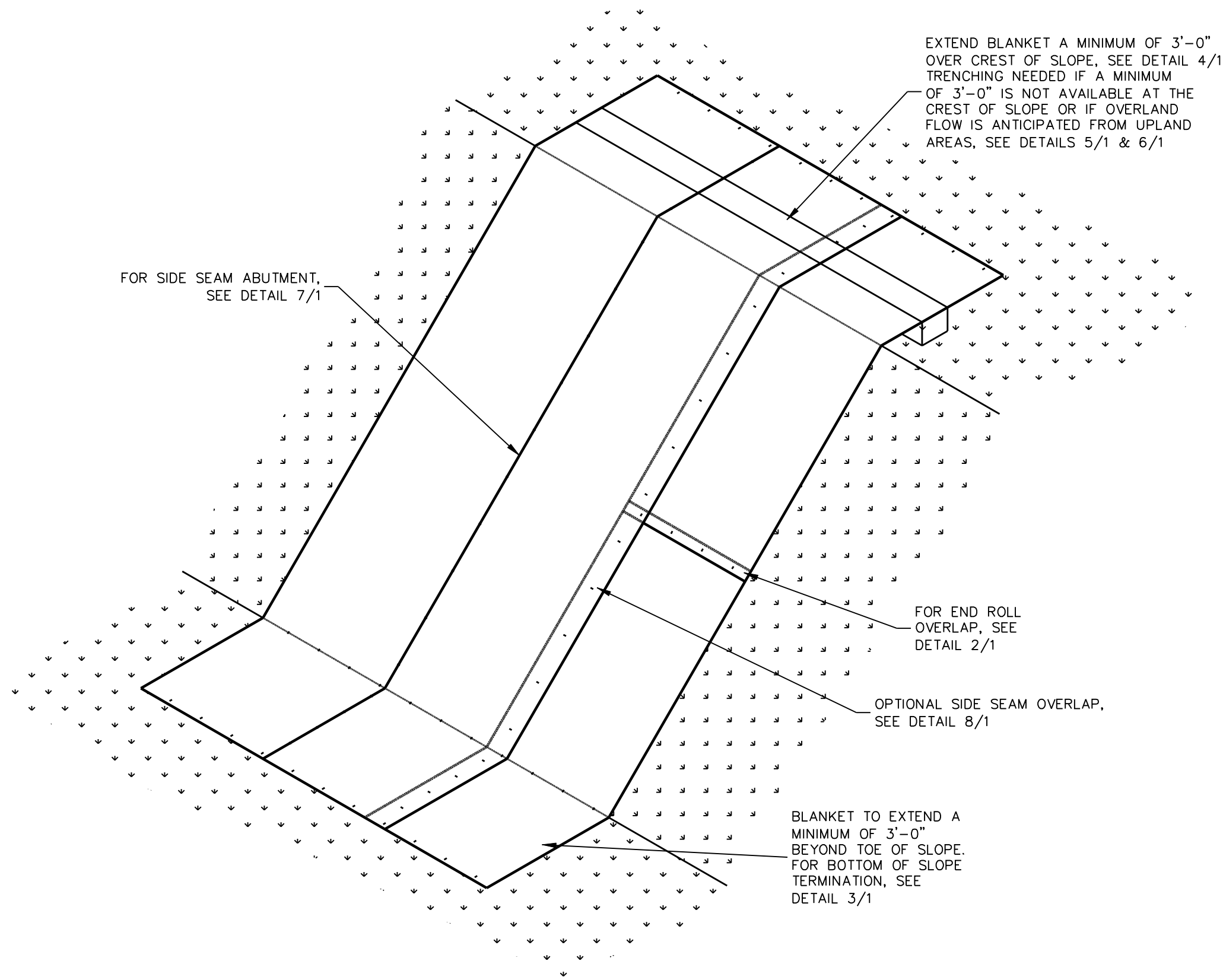


NO.	REVISION	BY	DATE

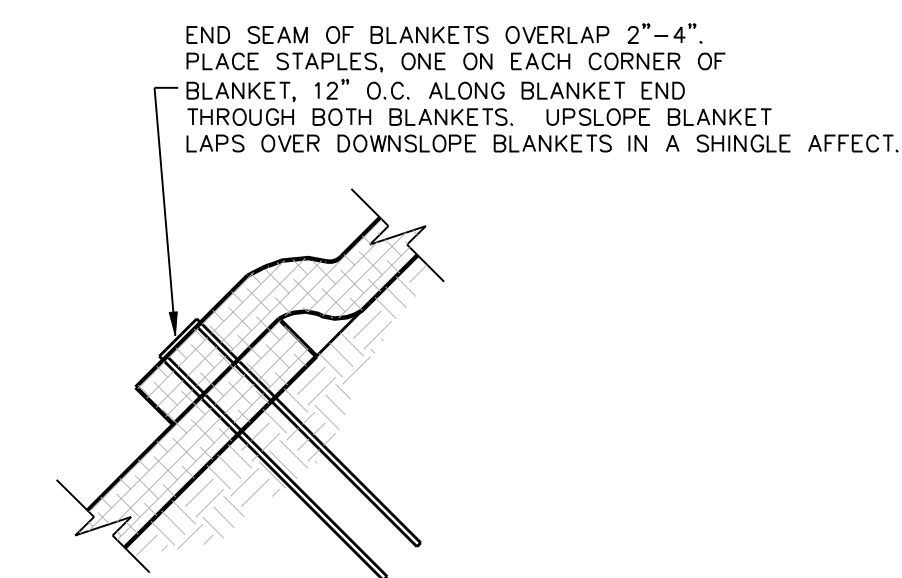
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 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE  
 EROSION & SEDIMENT CONTROL PLAN  
 NORTH

<b>icon</b> Consulting Engineers, Inc.		250 W. Southlake Blvd., Suite 117	
Civil Engineers - Designers - Planners		Southlake, Tx 76092 (817) 552-6210	
PROJECT	DESIGN	DRAWN	DATE
5029-01	ICE	ICE	MAY 7 2009
FILE	SHEET		
PW# 2009-01	89		

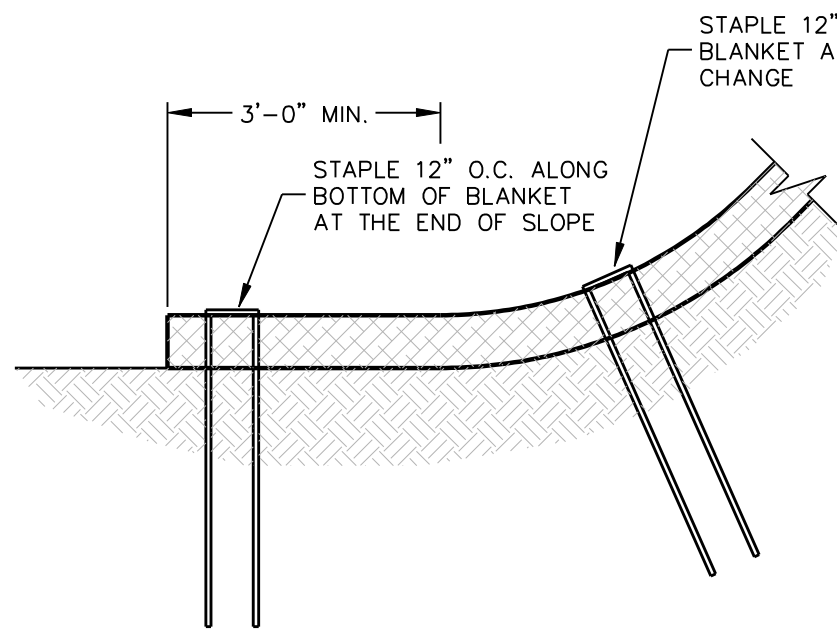
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



**SLOPE DETAIL**  
NO SCALE

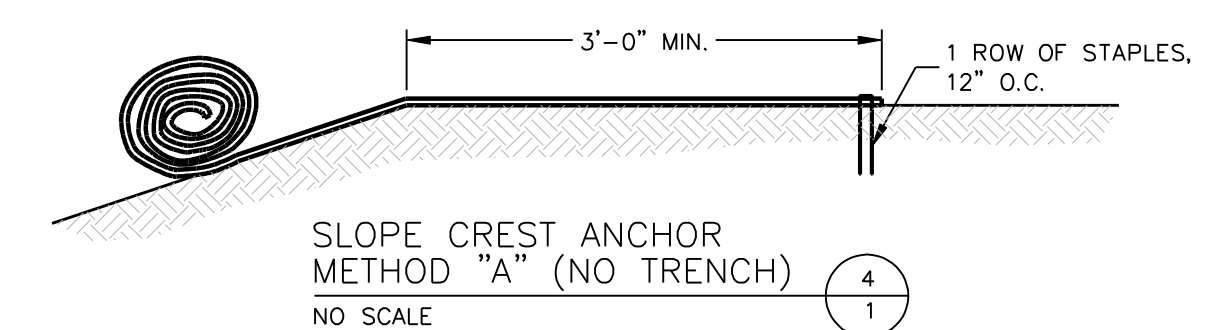


**END ROLL OVERLAP**  
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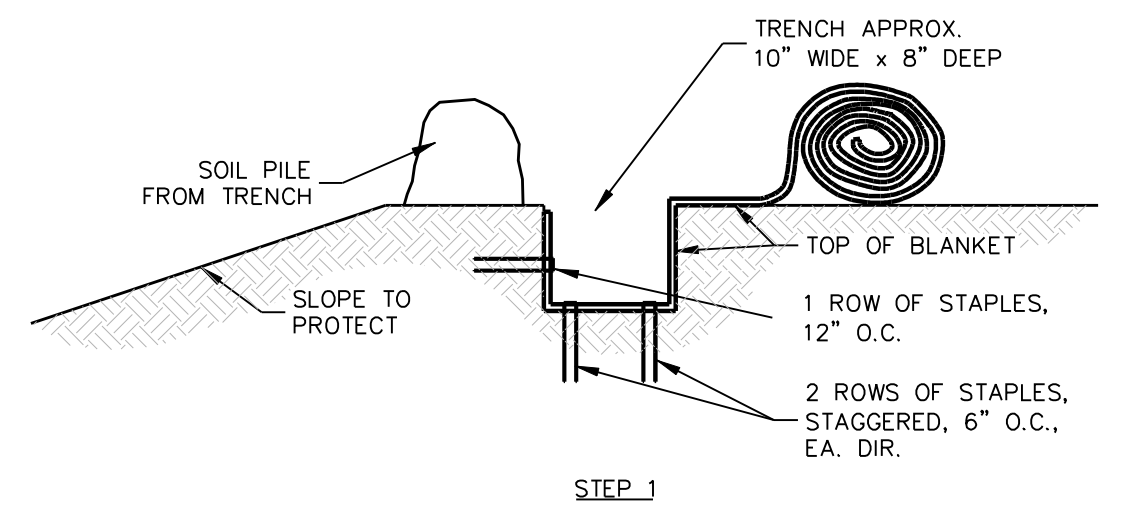


**BOTTOM OF SLOPE TERMINATION**  
NO SCALE

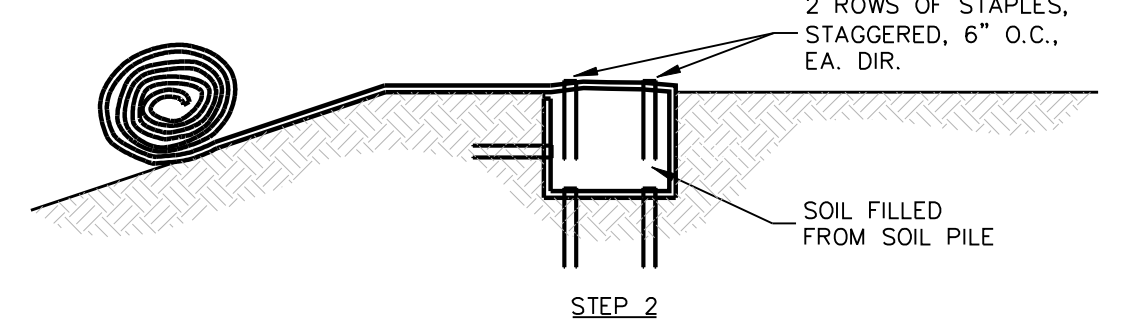
**EROSION CONTROL BLANKET**  
NOT TO SCALE



**SLOPE CREST ANCHOR METHOD "A" (NO TRENCH)**  
NO SCALE

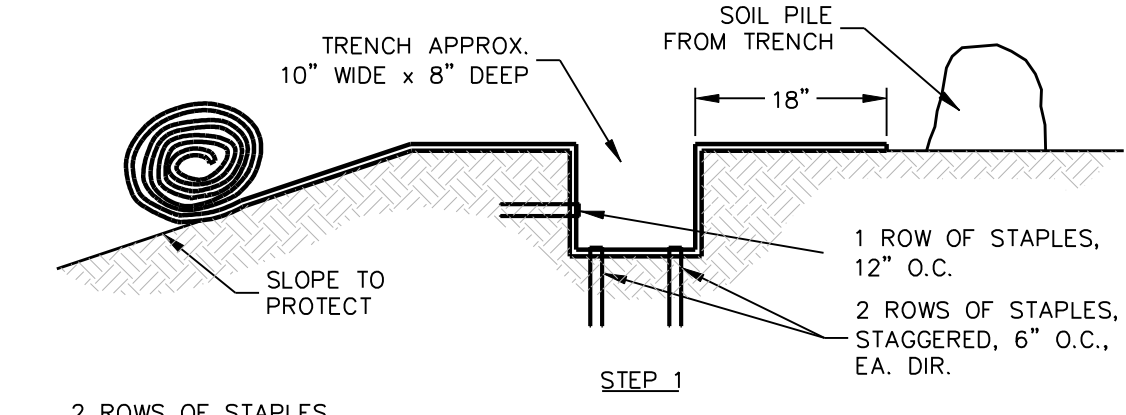


STEP 1

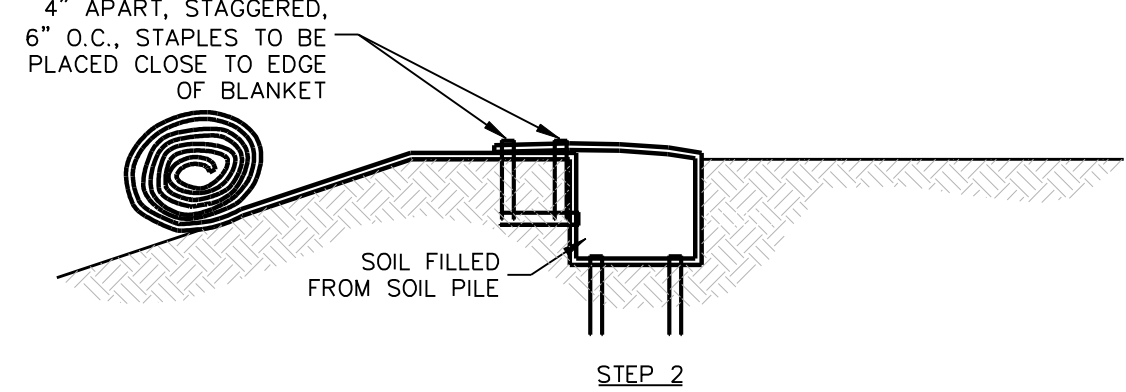


STEP 2

**SLOPE TRENCHING METHOD "B"**  
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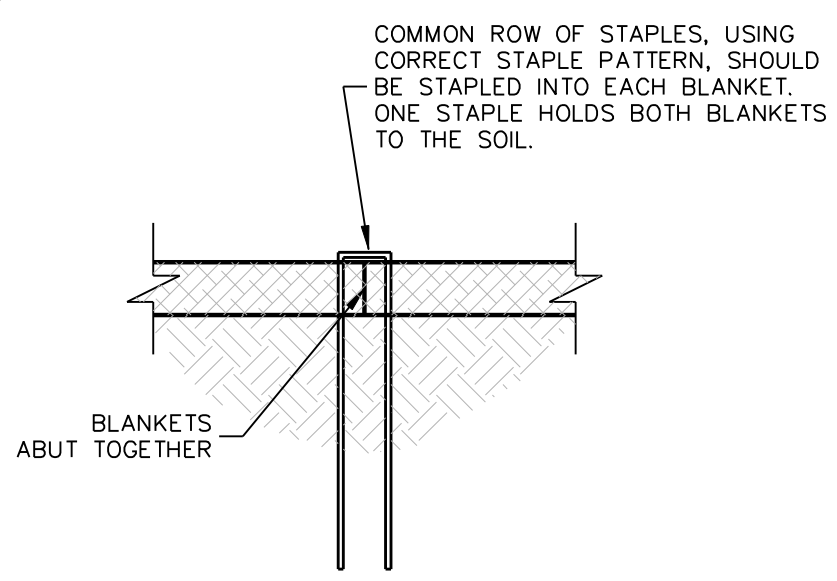
STEP 1



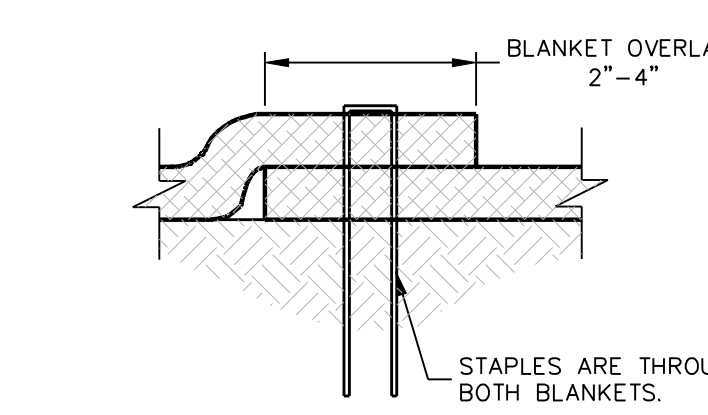
STEP 2

**SLOPE TRENCHING METHOD "C"**  
NO SCALE

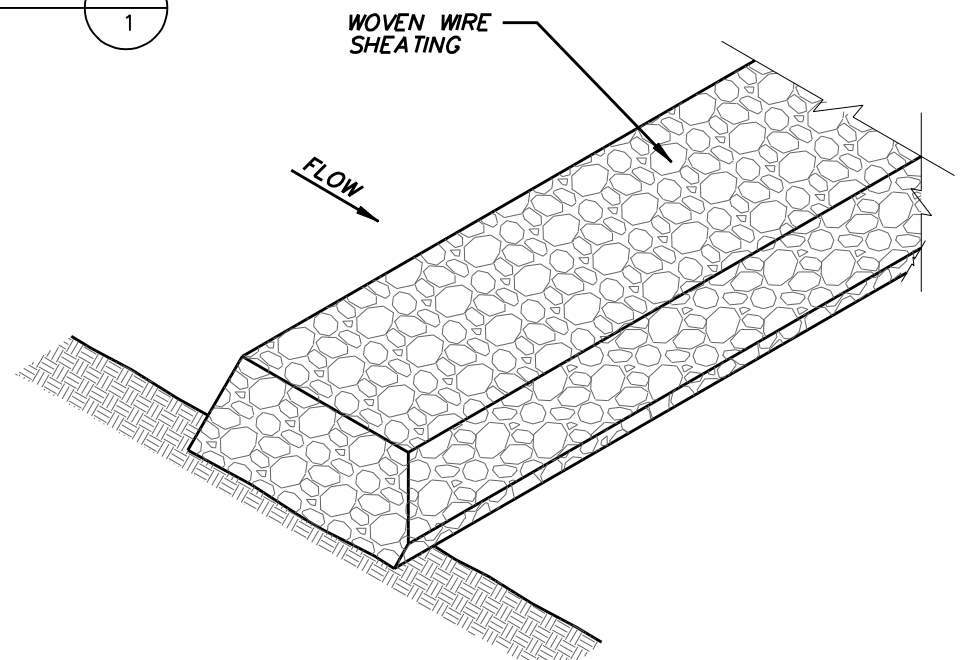
- NOTES:**
1. STAPLE PATTERNS ARE DEPENDENT ON SITE CONDITIONS. SEE CURLEX® STAPLE PATTERN GUIDE FOR DETAILS.
  2. E-STAPLE® MAY BE USED IN PLACE OF WIRE STAPLES.
  3. CURLEX® IN NEUTRAL COLOR.



**SIDE SEAM ABUT STAPLE DETAIL**  
NO SCALE



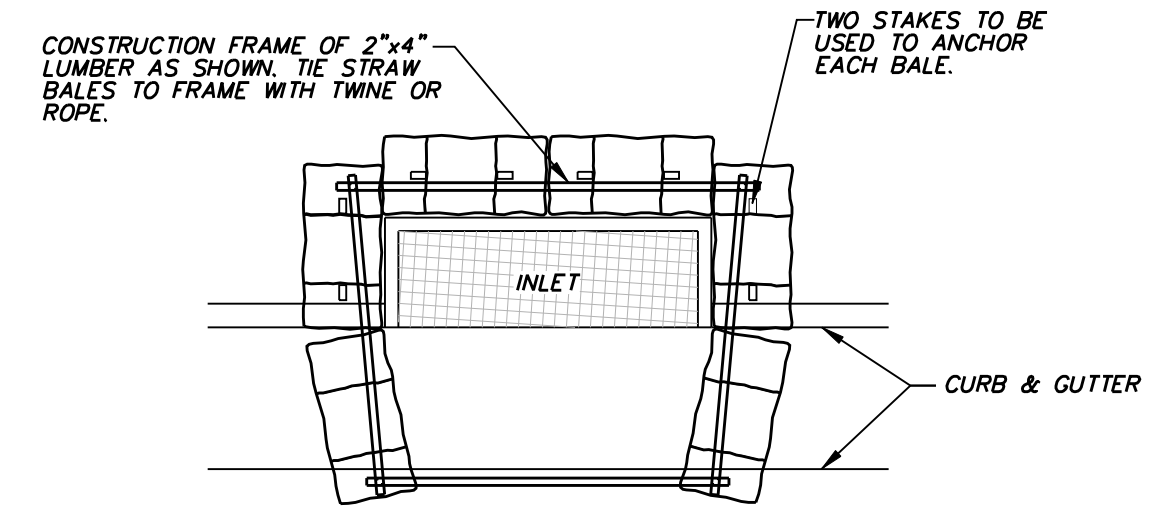
**SIDE SEAM OVERLAP STAPLE DETAIL**  
NO SCALE



**ISOMETRIC PLAN VIEW**

- NOTES:**
1. USE OPEN GRADED ROCK 4-8 INCHES IN DIAMETER FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK 3-5 INCHES IN DIAMETER FOR OTHER CONDITIONS.
  2. THE ROCK DAM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
  3. THE ROCK DAM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN EVENT AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
  4. WHEN SILT REACHES DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
  5. WHEN THE SITE IS COMPLETELY STABILIZED, THE DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

**ROCK CHECK DAM**  
NOT TO SCALE

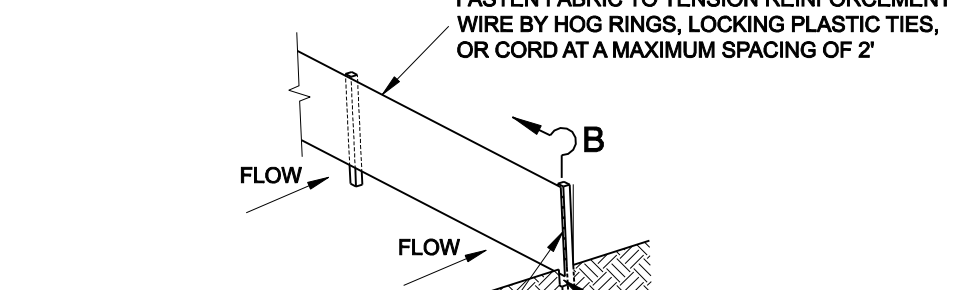


**CURB INLET PROTECTION**  
NOT TO SCALE

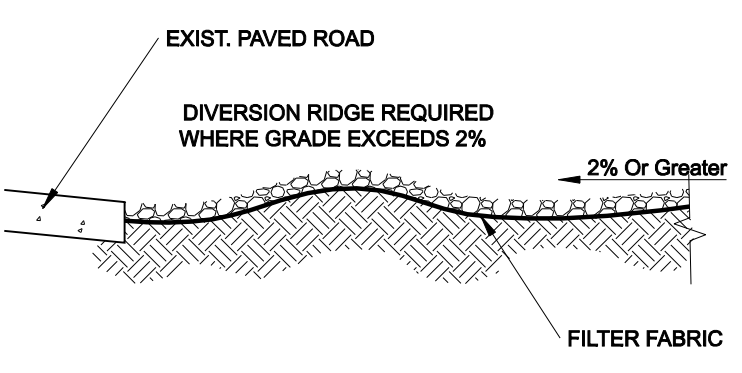
**NOTES: SILT FENCE**

1. Posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source. The post must be embedded a minimum of 18 inches.
2. The toe of the silt fence shall be trenched in with a spade or mechanical trencher, so that the downslope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g. pavement), weight fabric flap with washed gravel on the uphill side to the trench must be a minimum of 8 inches deep and 8 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
3. Silt fence shall be securely fastened to each support post or to woven wire, which is in turn attached to the support post. There shall be a 6 inch double overlap, securely fastened where ends of fabric meet.
4. Inspection shall be made daily or after each rainfall. Repair or replacement shall be made promptly as needed.
5. Silt fence shall be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.
6. Accumulated silt shall be removed when it reached a depth of 3 inches. The silt shall be disposed of at an approved site and in such a manner as to prevent flow under fence not contribute to additional siltation.

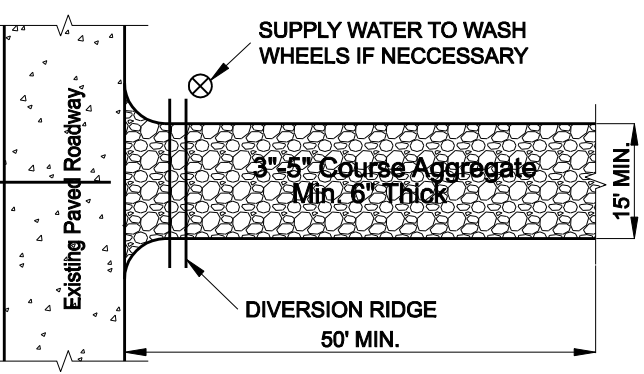
4" MIN. STEEL OR WOOD POSTS SPACED AT 5' TO 8' SOFTWOOD POSTS SHALL BE 3" MIN. IN. DIA. OR NOMINAL 2"x4" HARDWOOD POSTS SHALL HAVE A MIN. CROSS SECTION OF 1.5"x1.5" (3.8 cm x 3.8 cm).



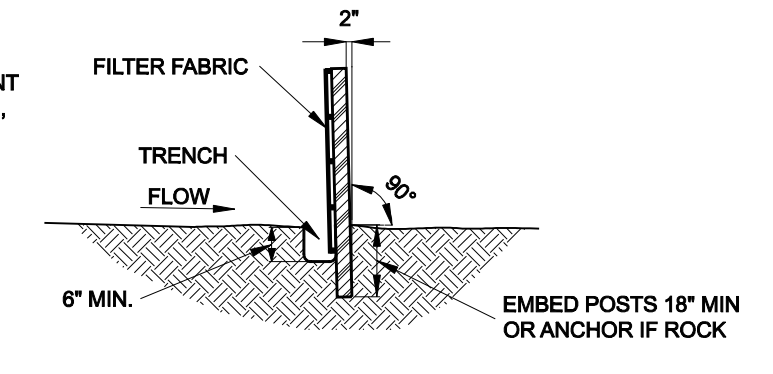
FASTEN FABRIC TO TENSION REINFORCEMENT WIRE BY HOG RINGS, LOCKING PLASTIC TIES, OR CORD AT A MAXIMUM SPACING OF 2'



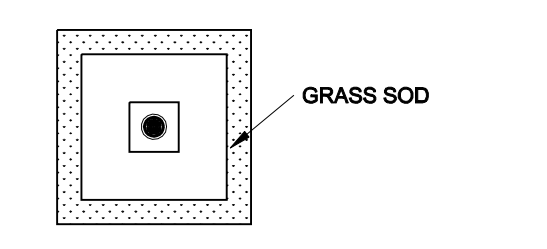
**SECTION B**



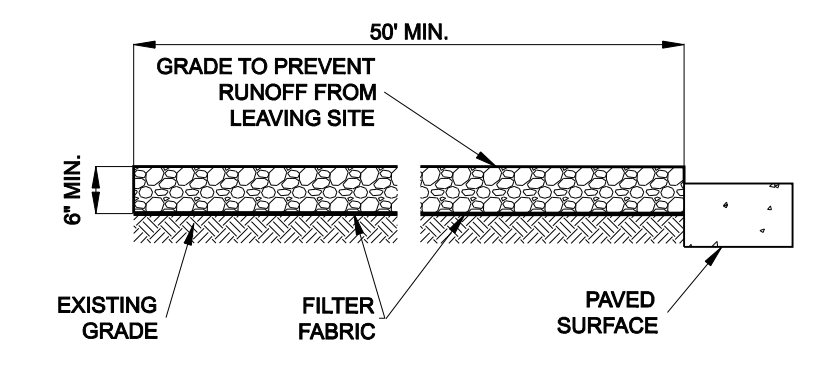
**PLAN**



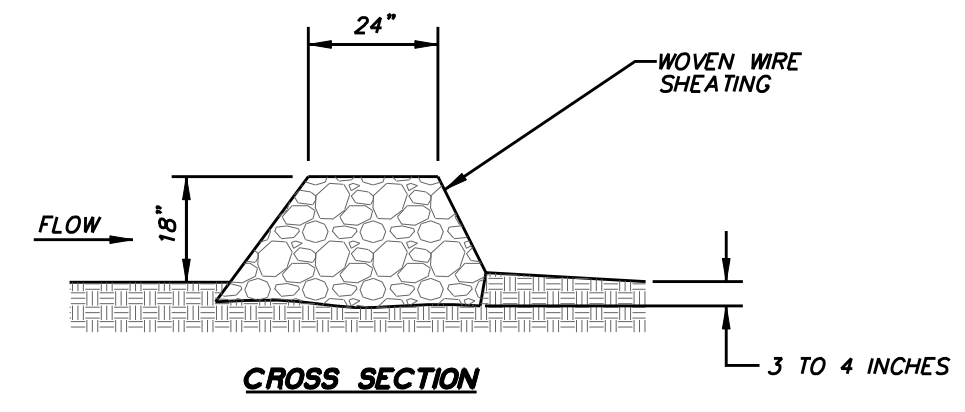
**SECTION A**



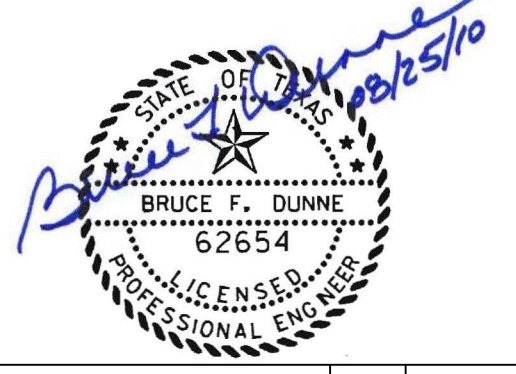
**DROP INLET PROTECTION (TYP)**



**TEMPORARY STONE CONSTRUCTION ENTRANCE / EXIT**



**CROSS SECTION**



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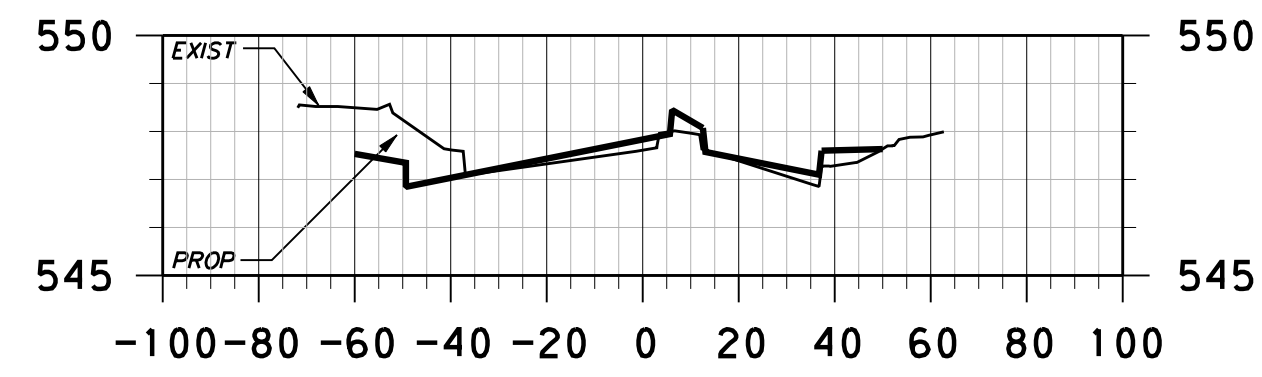
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**EROSION & SEDIMENT CONTROL DETAILS**

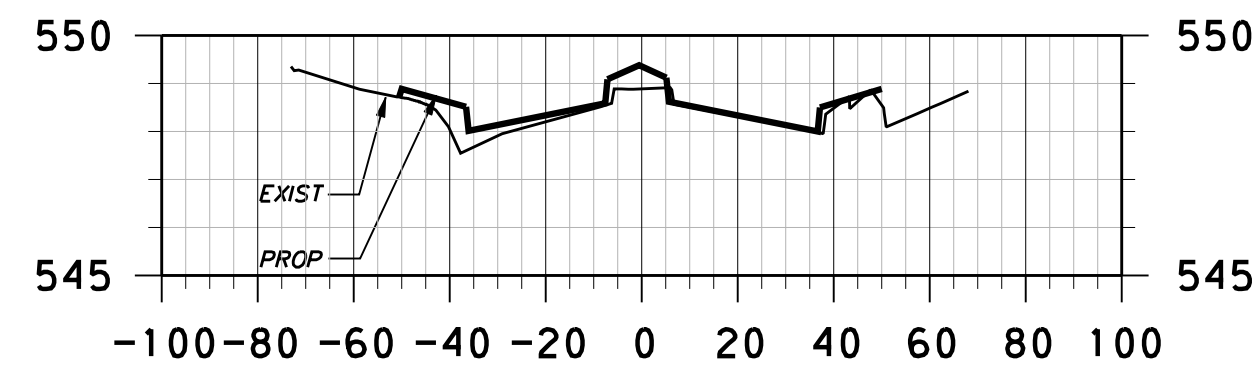
**icon** Consulting Engineers, Inc.  
Civil Engineers - Designers - Planners 250 W. Southlake Blvd., Suite 117  
Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	90

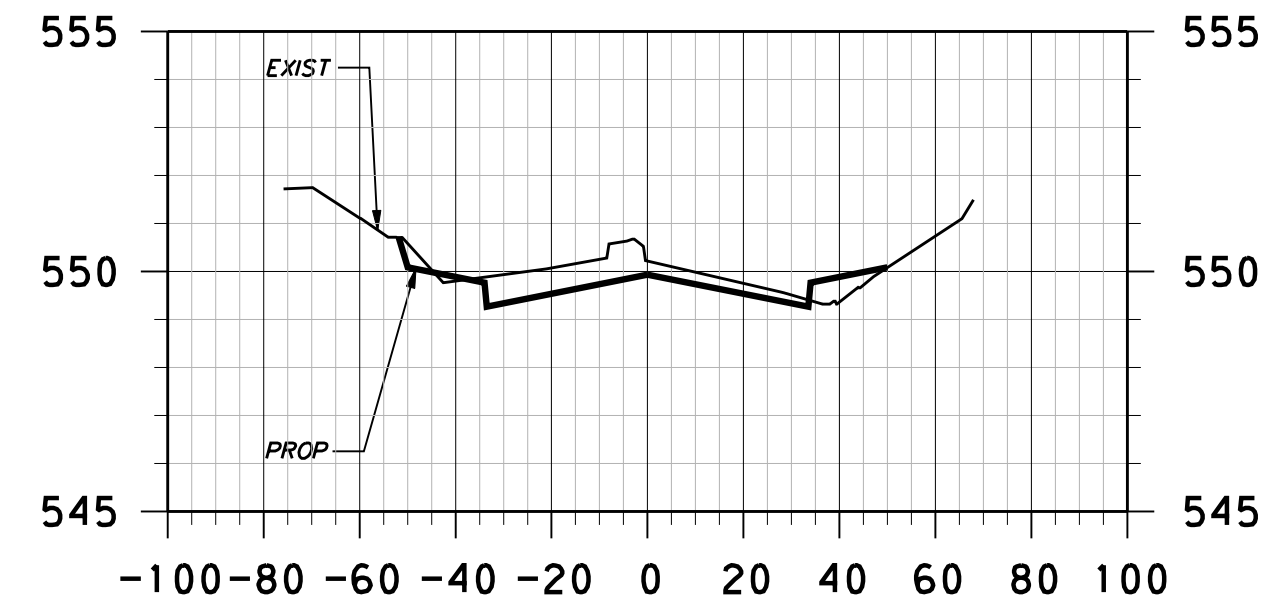
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



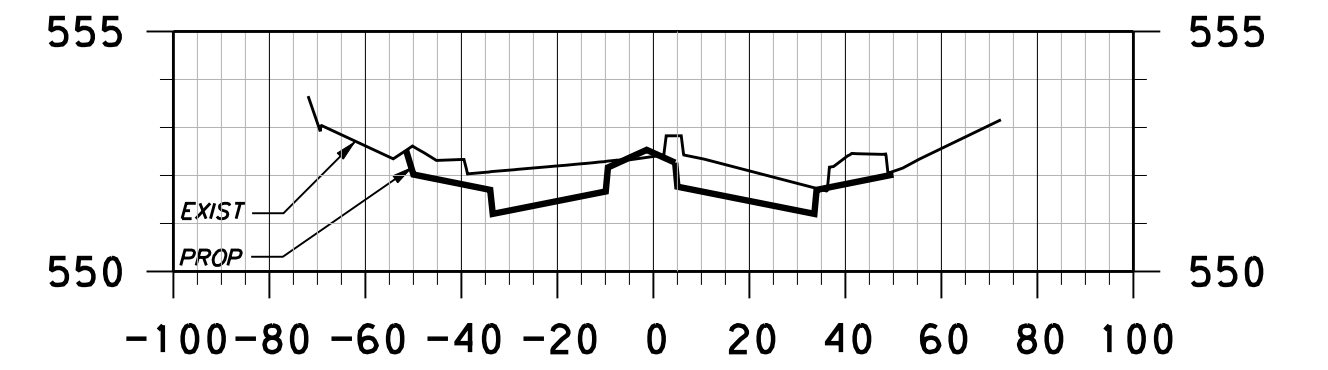
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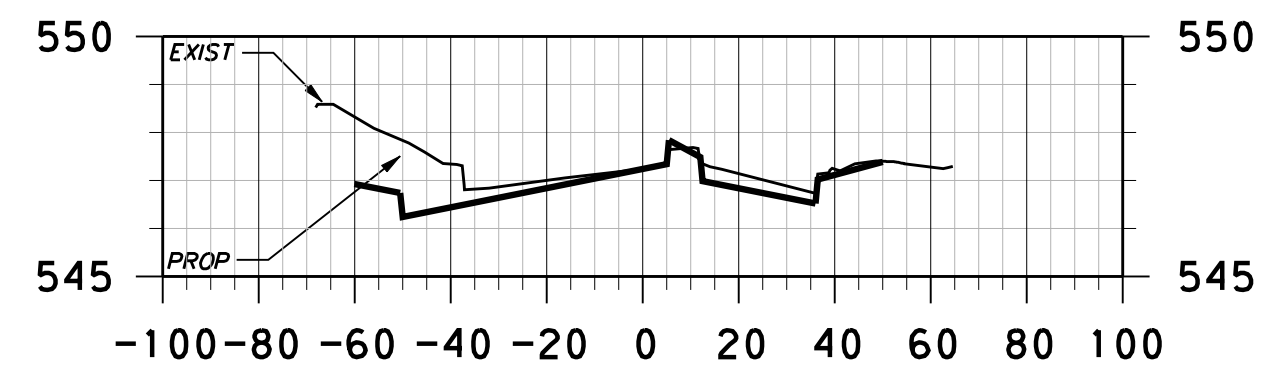
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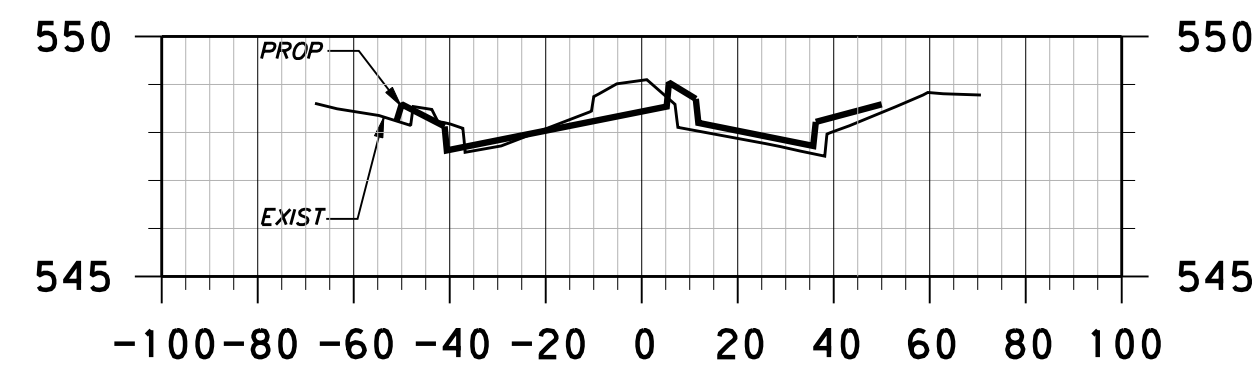
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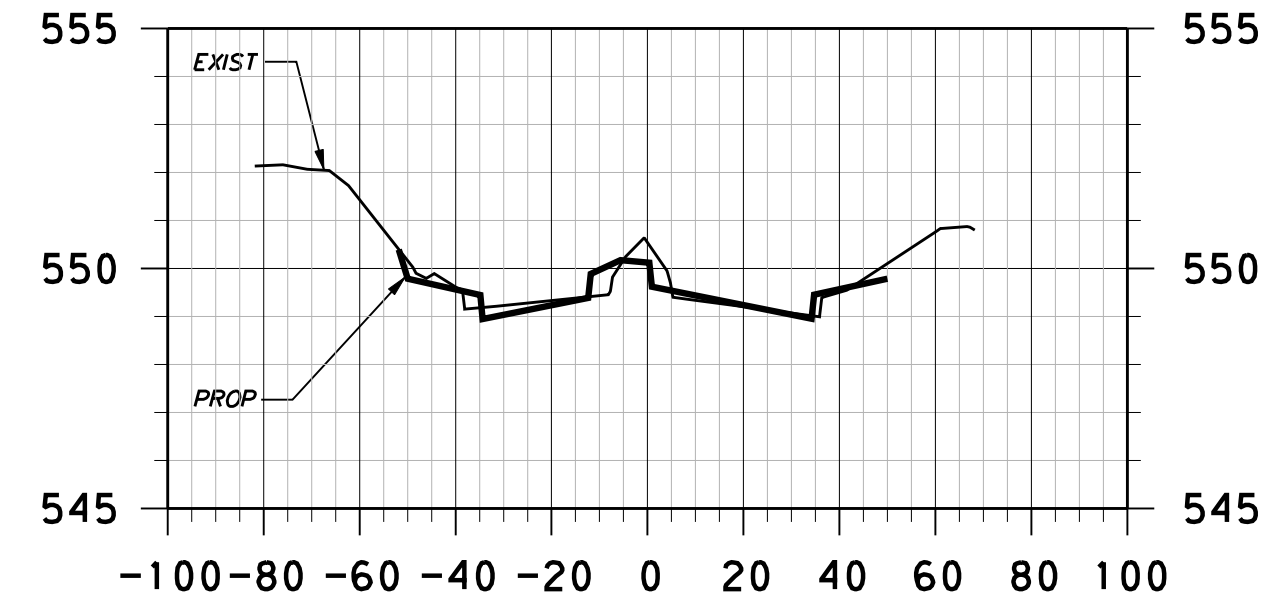
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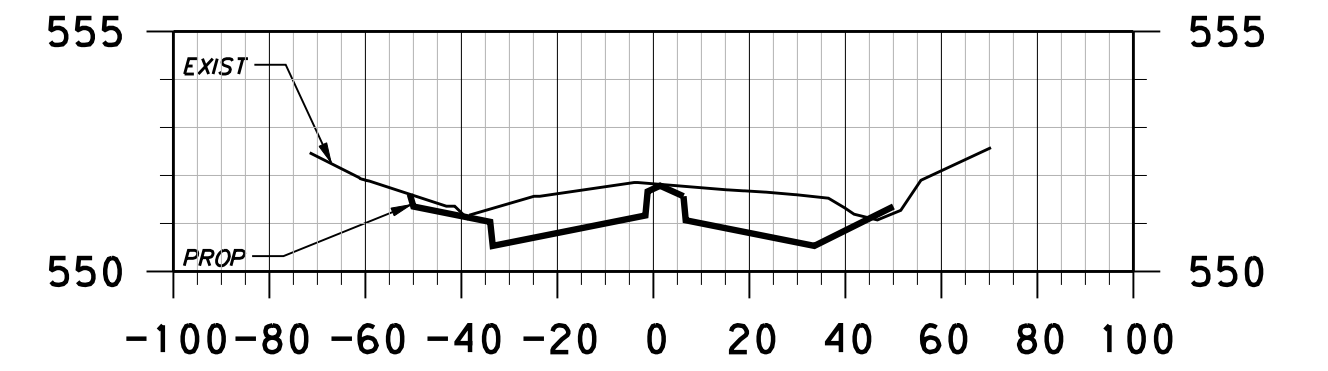
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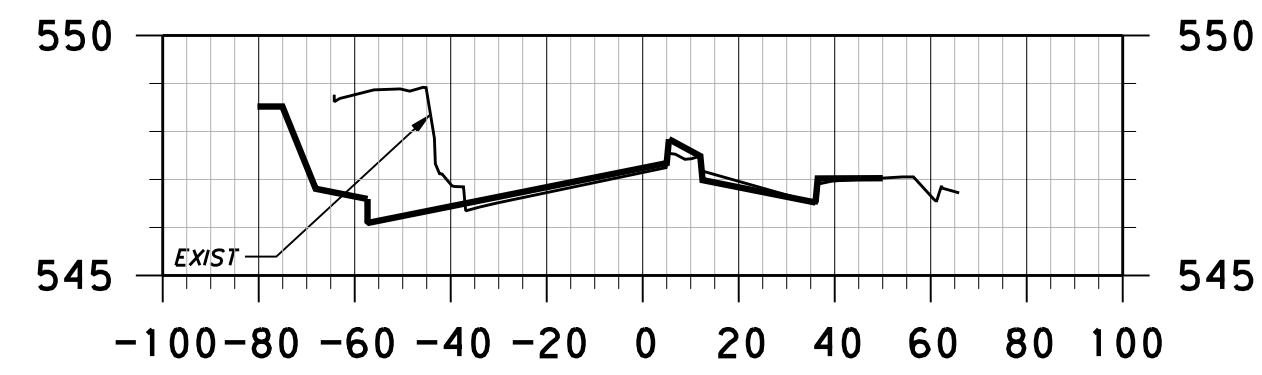
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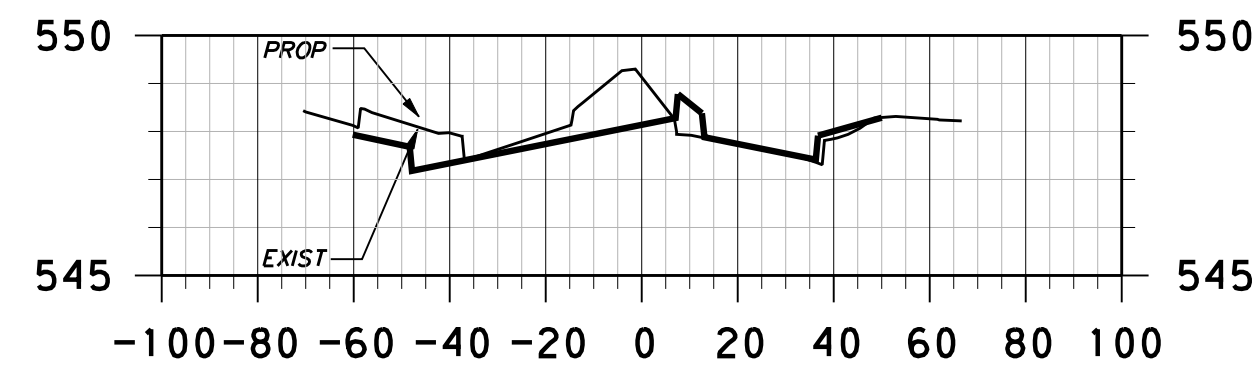
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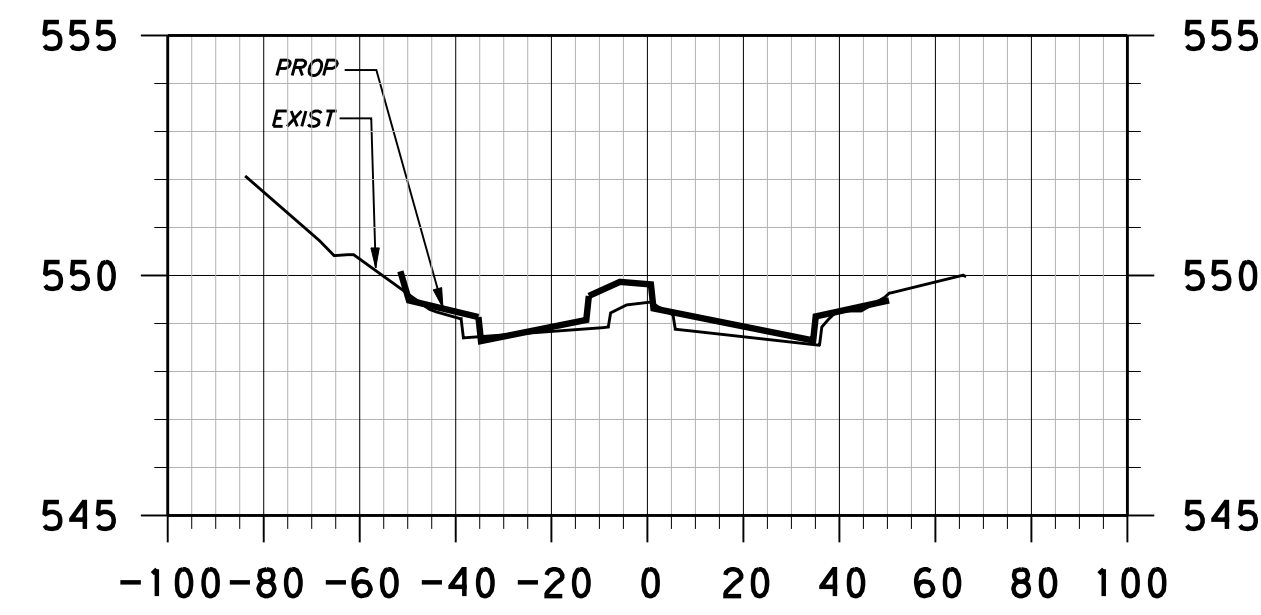
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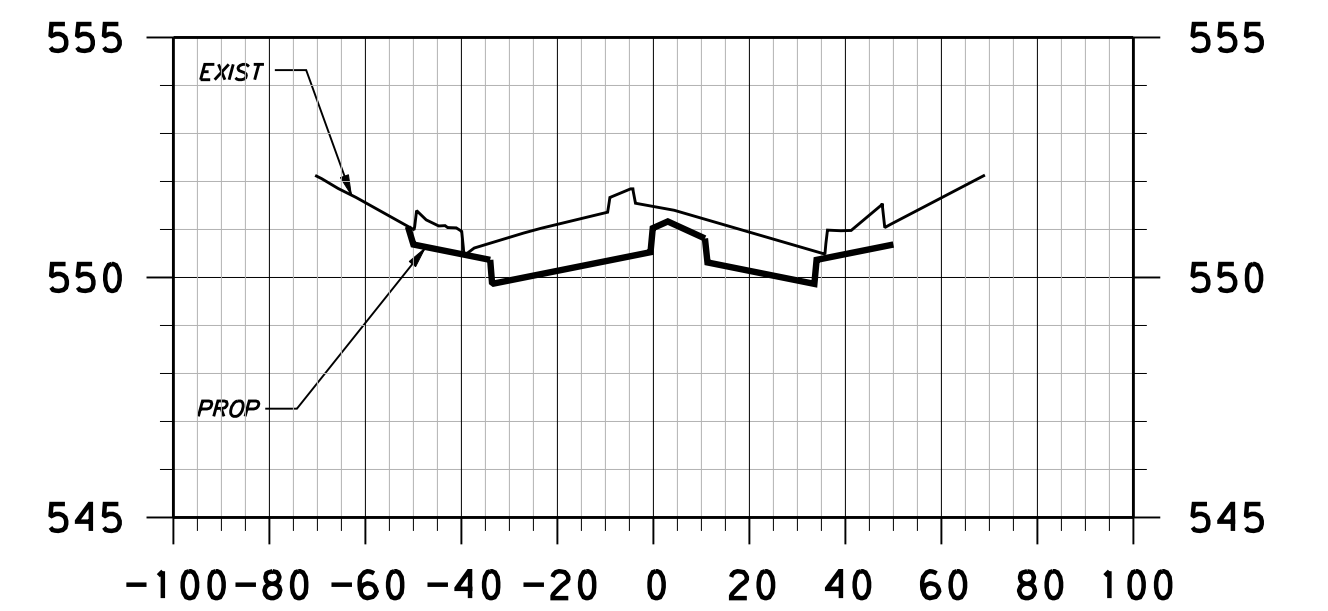
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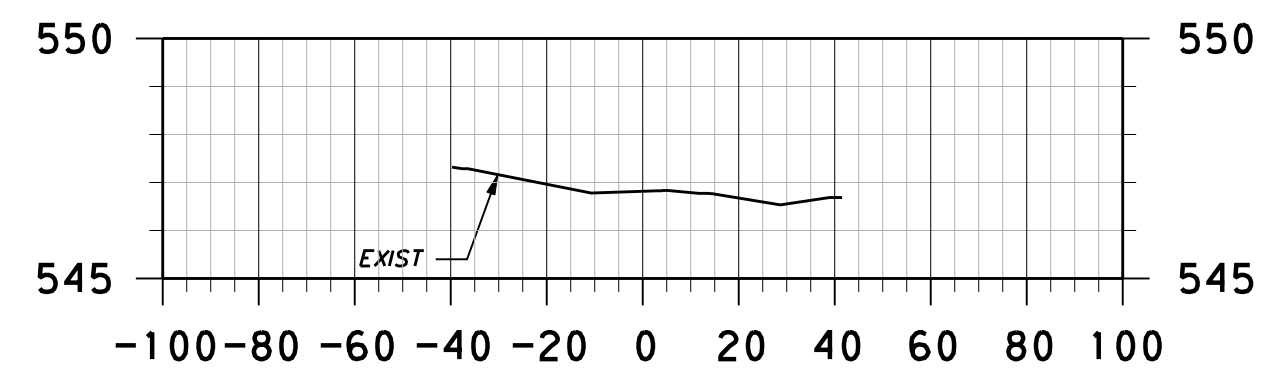
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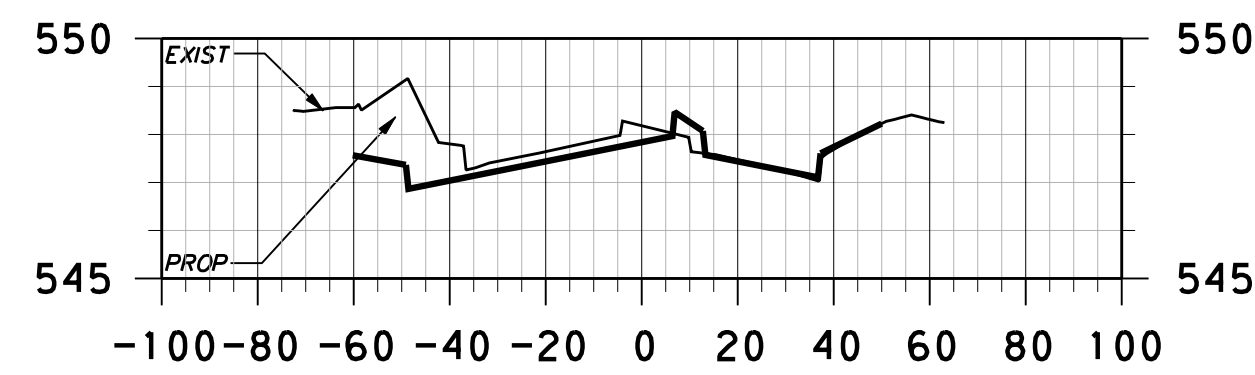
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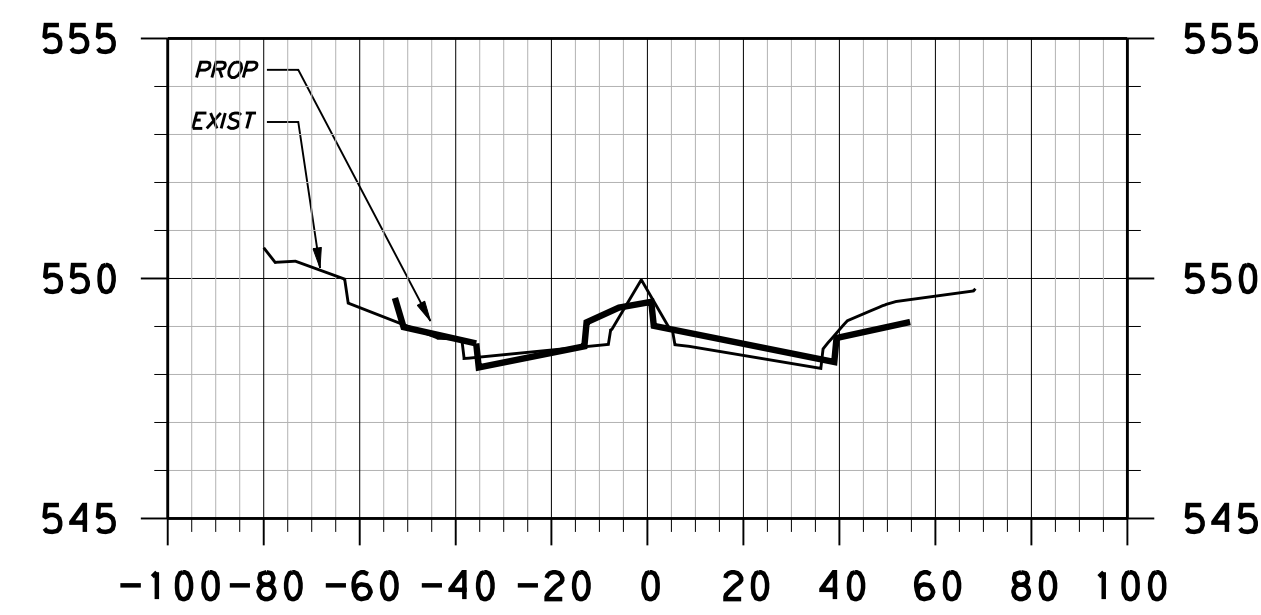
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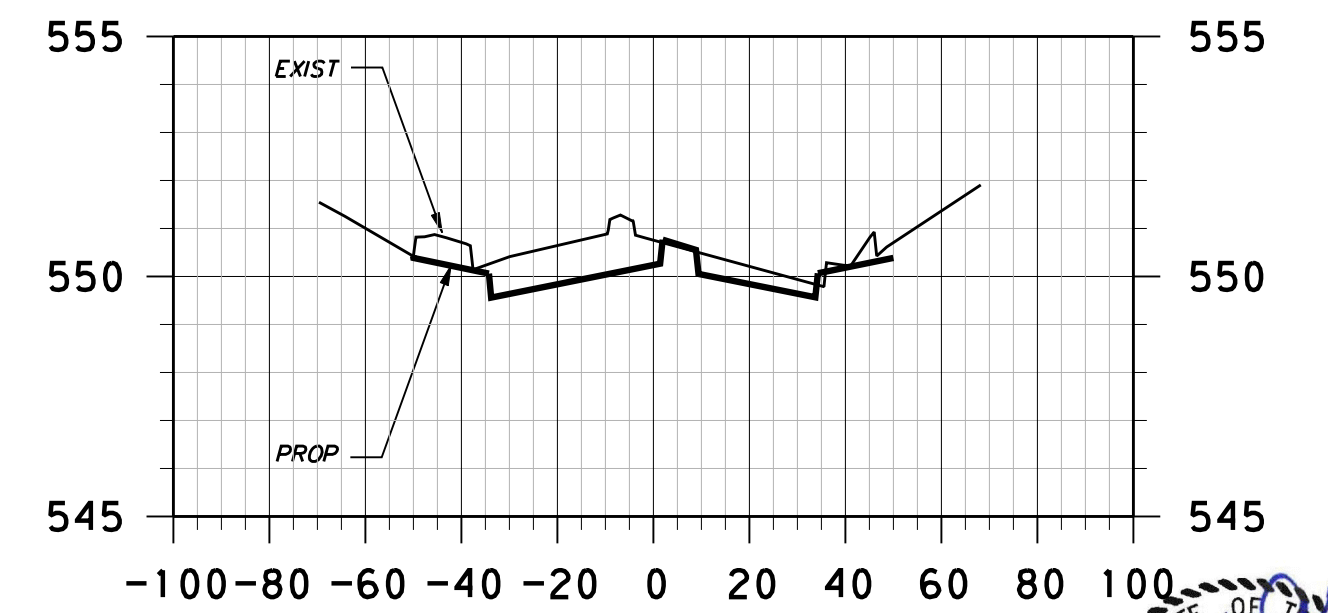
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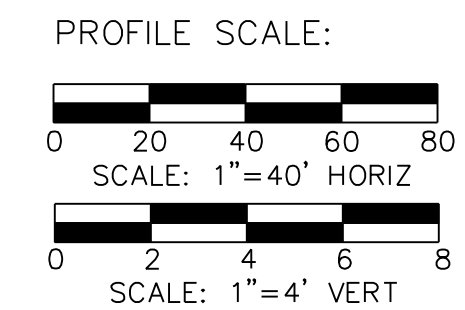
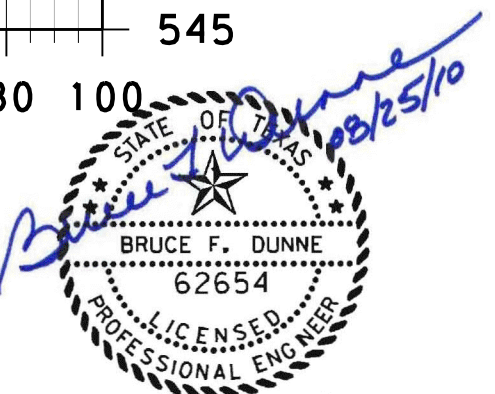
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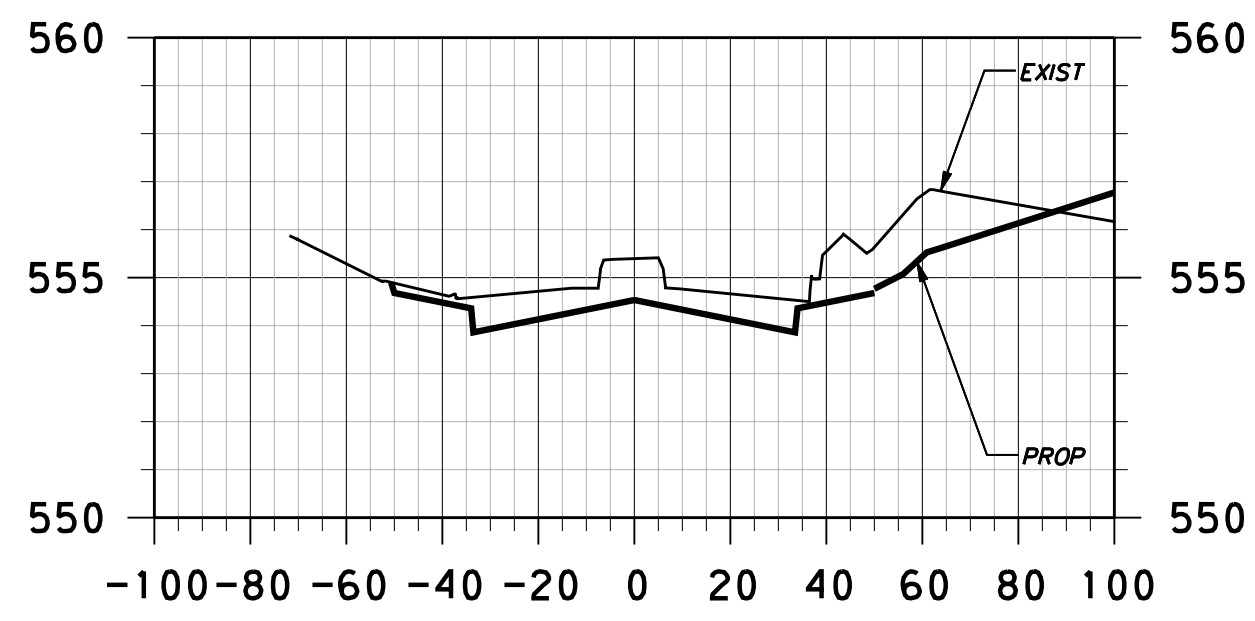
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 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE

**CROSS-SECTIONS-VW**  
 STA 0+00.00 TO STA 8+00.00

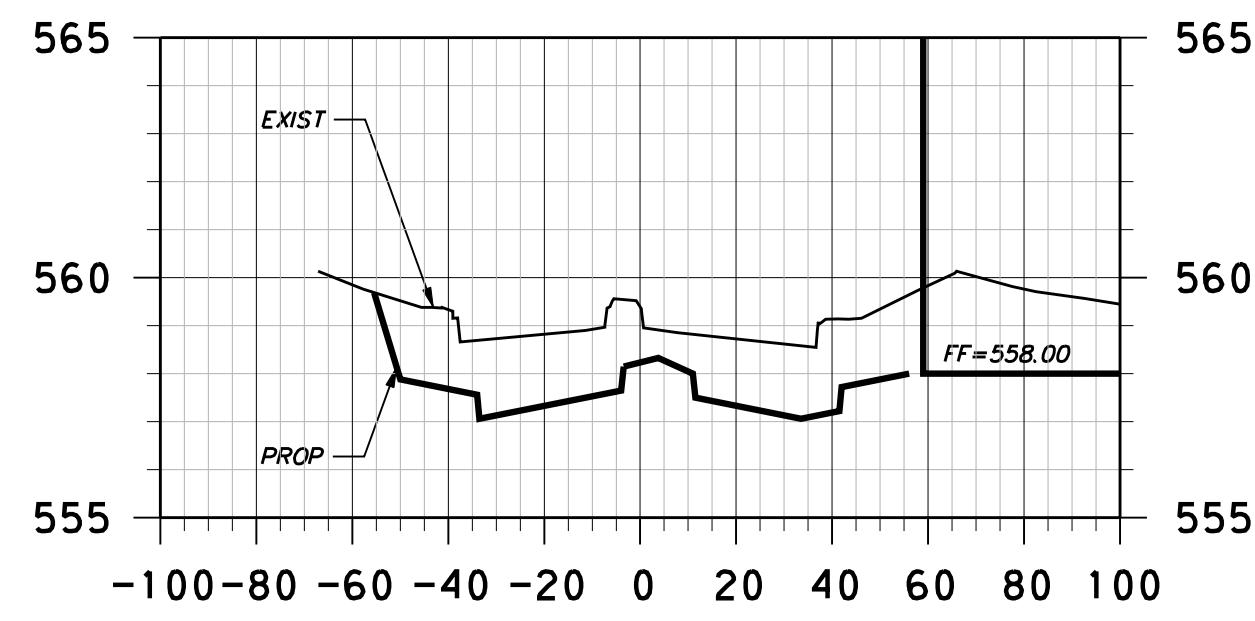
<b>icon</b> Consulting Engineers, Inc. Civil Engineers - Designers - Planners	250 W. Southlake Blvd., Suite 117 Southlake, Tx 76092 (817) 552-6210				
PROJECT: 5029-01	DESIGN: ICE	DRAWN: ICE	DATE: MAY 7 2009	FILE: PW# 2009-01	SHEET: 91

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

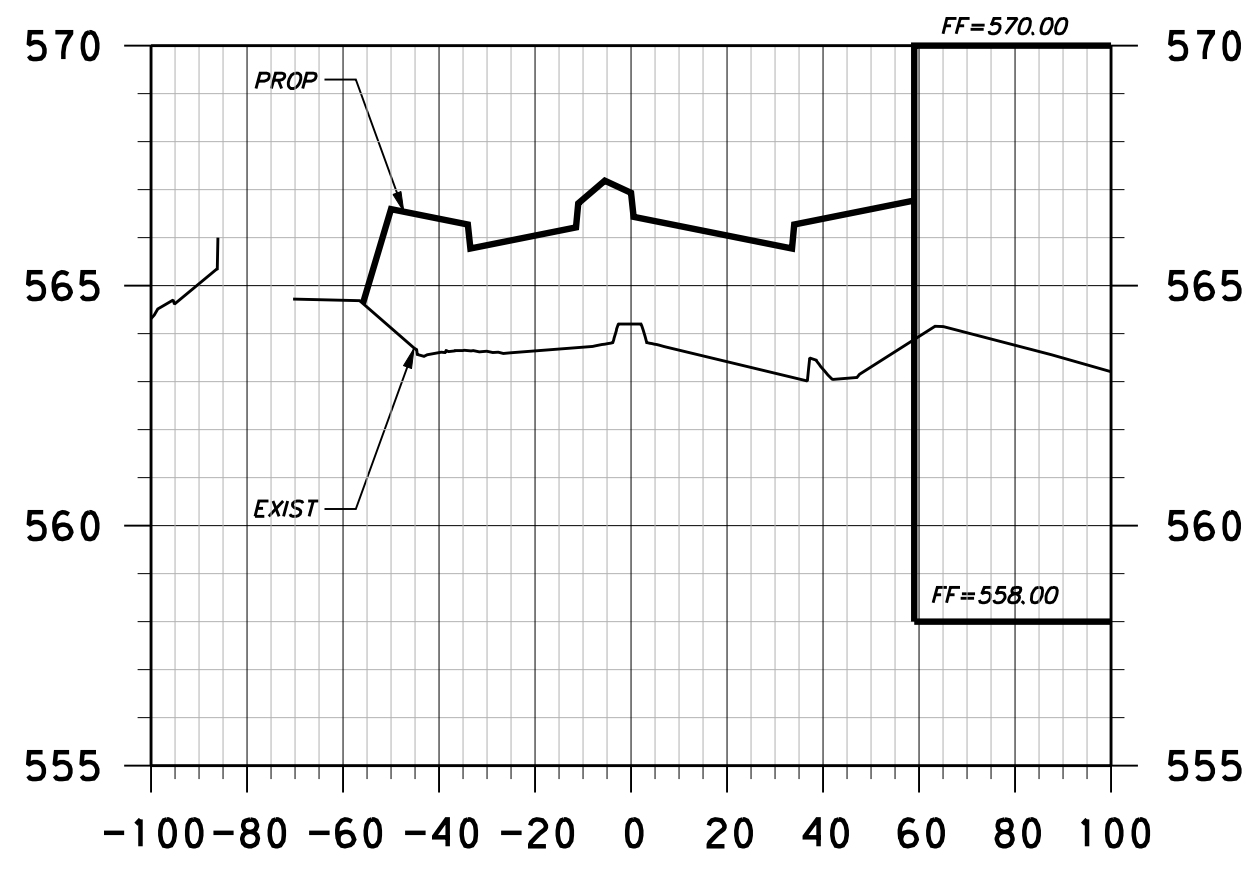




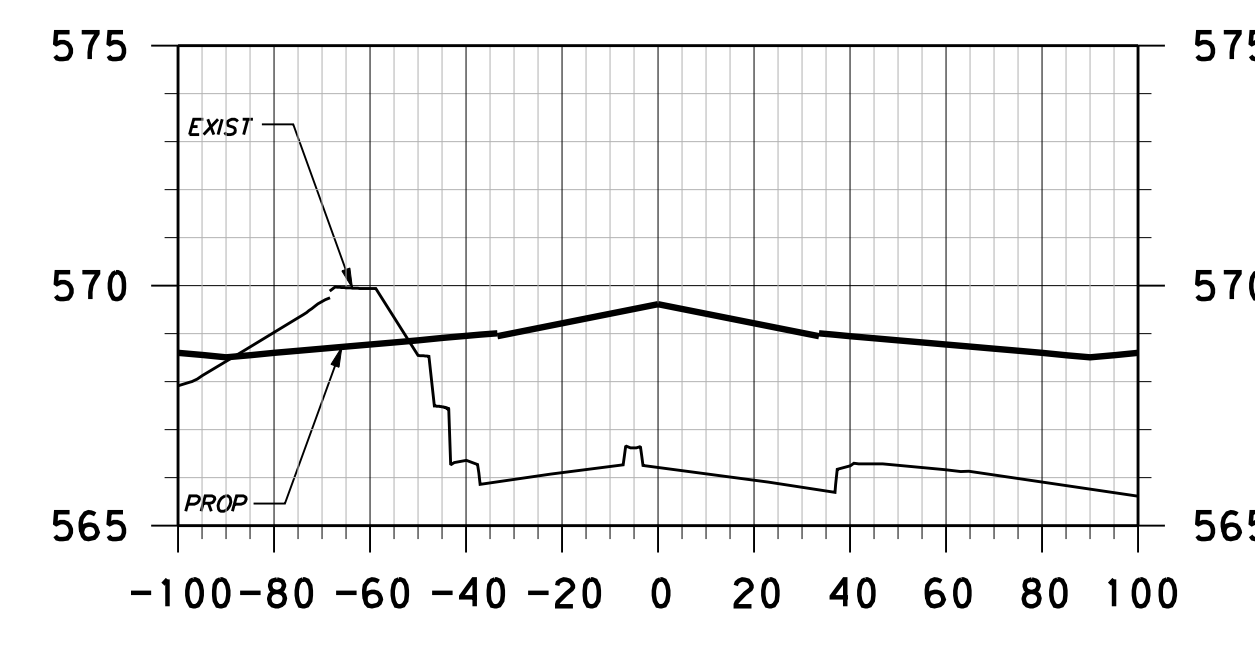
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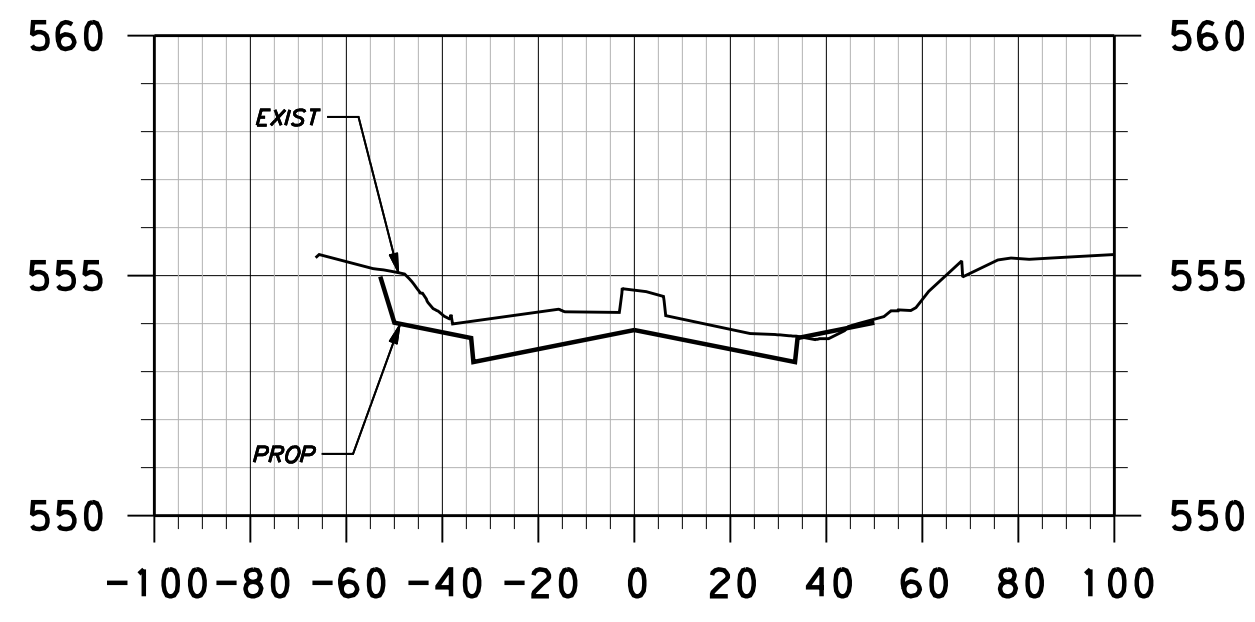
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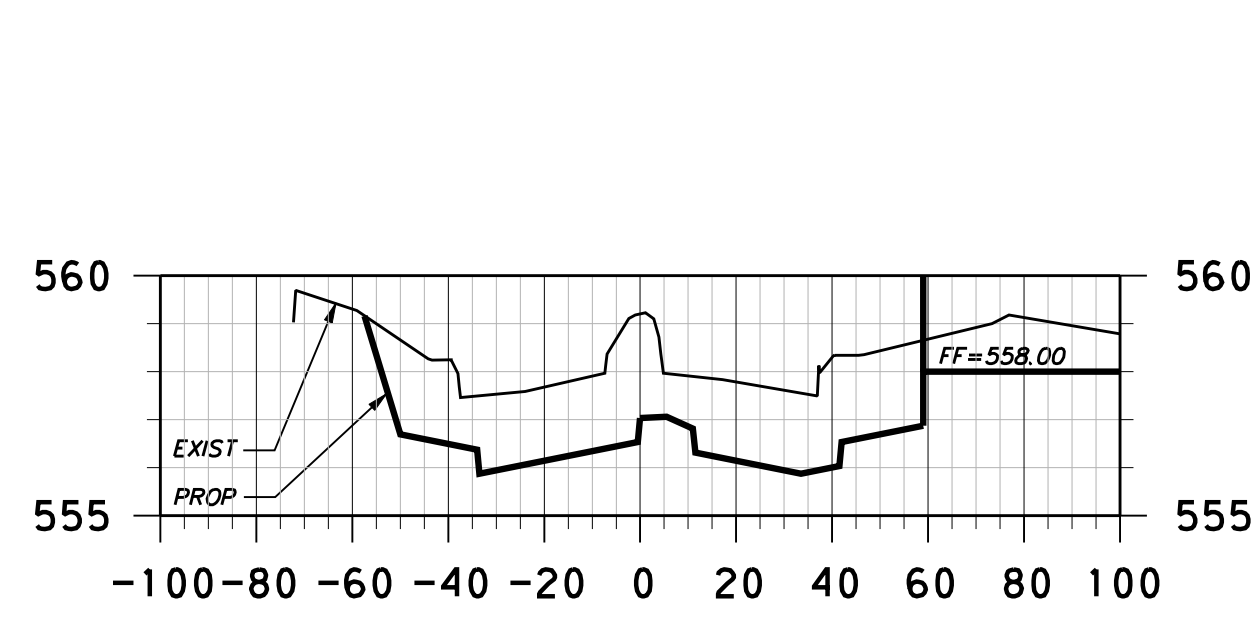
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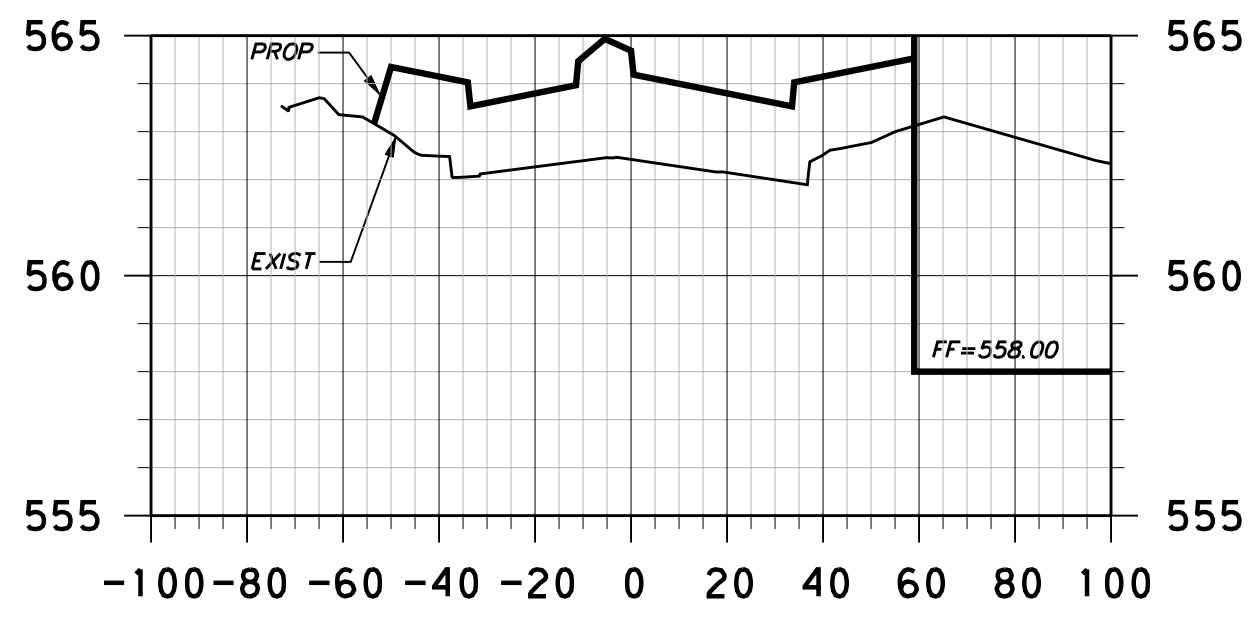
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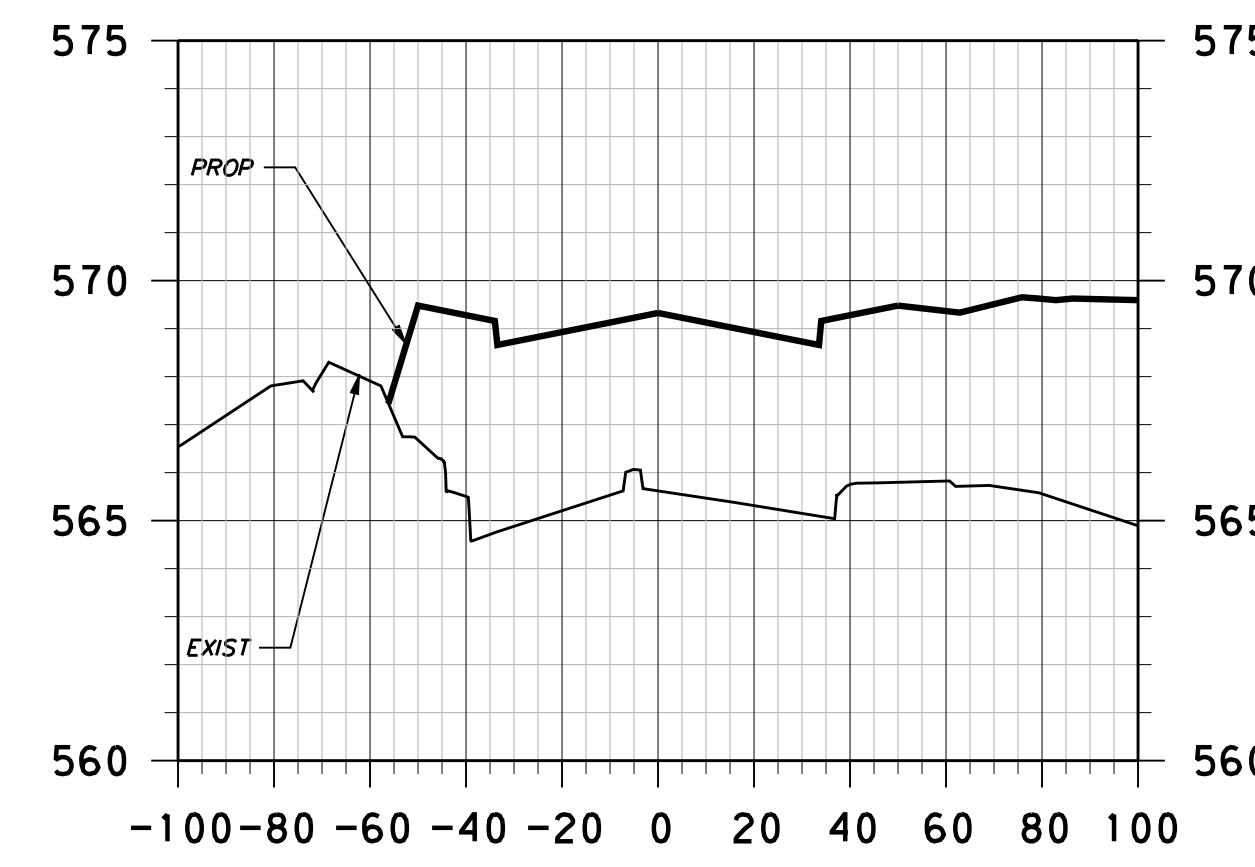
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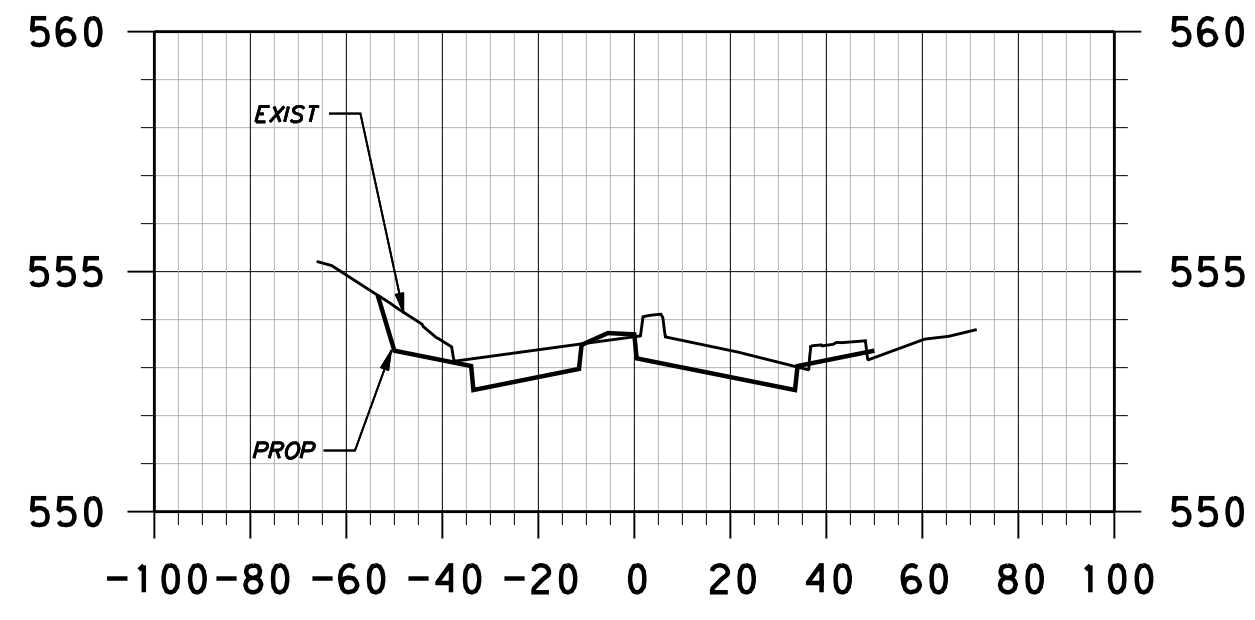
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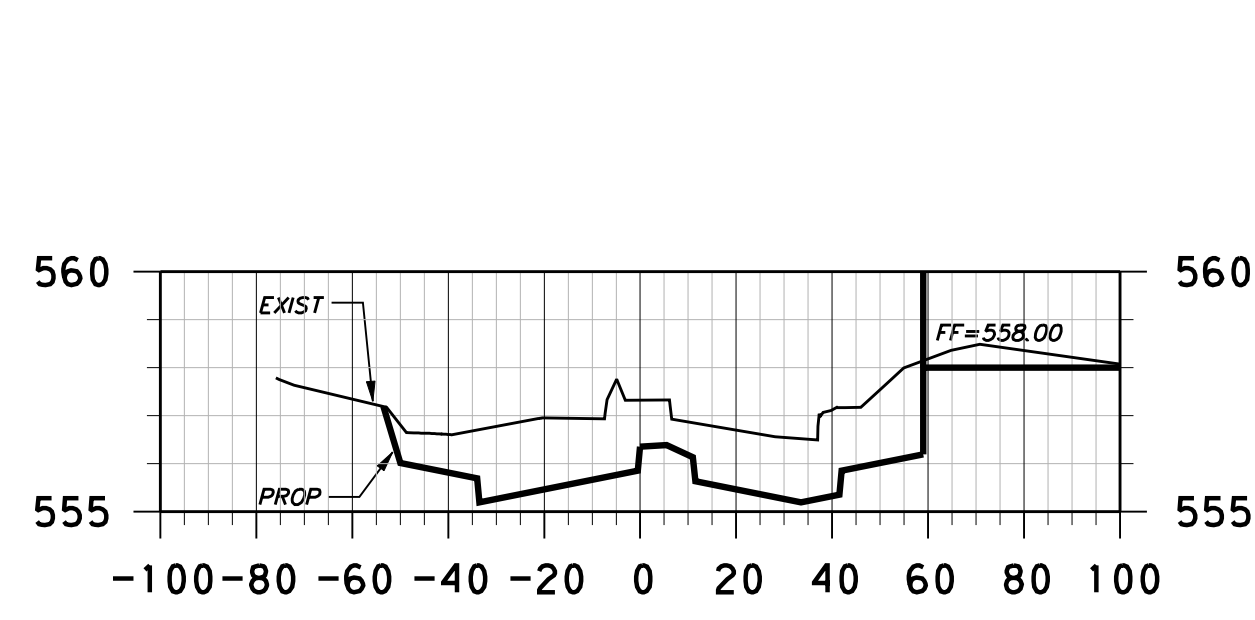
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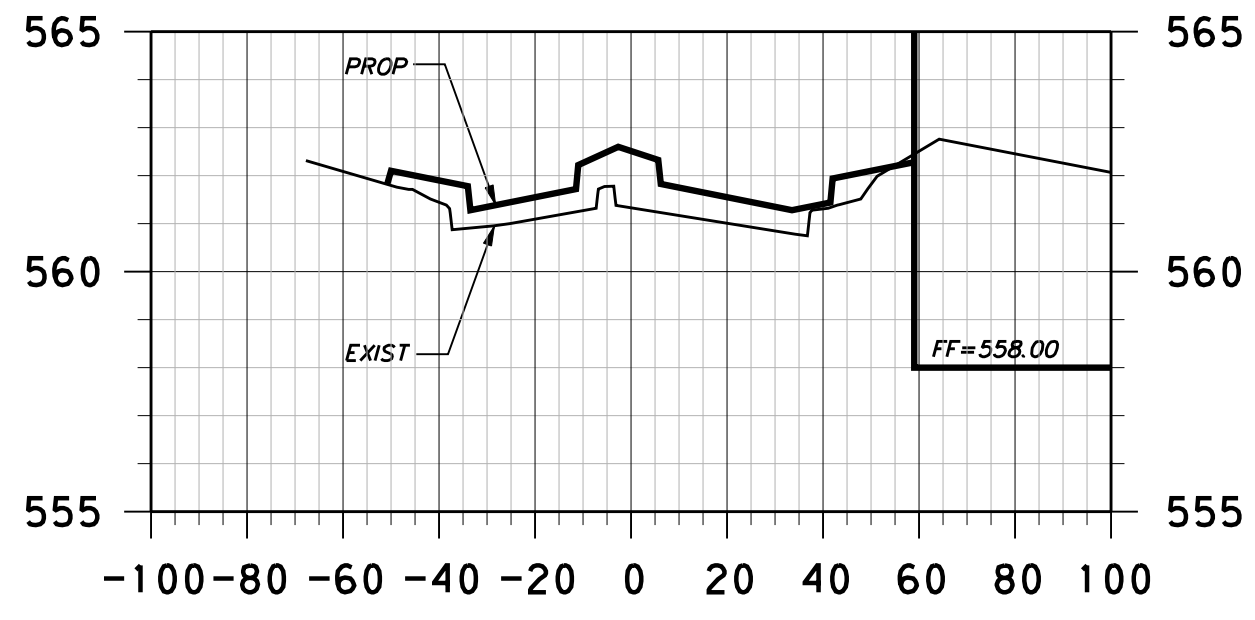
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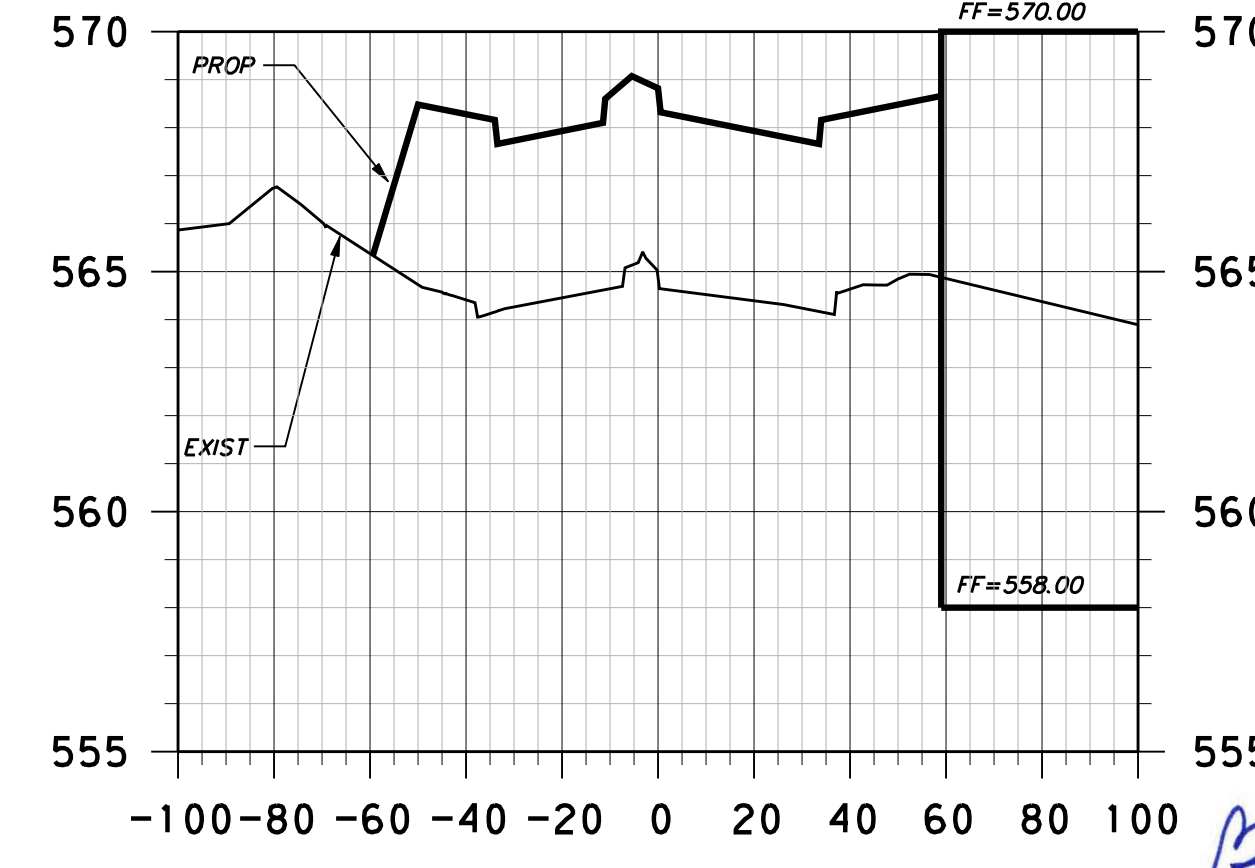
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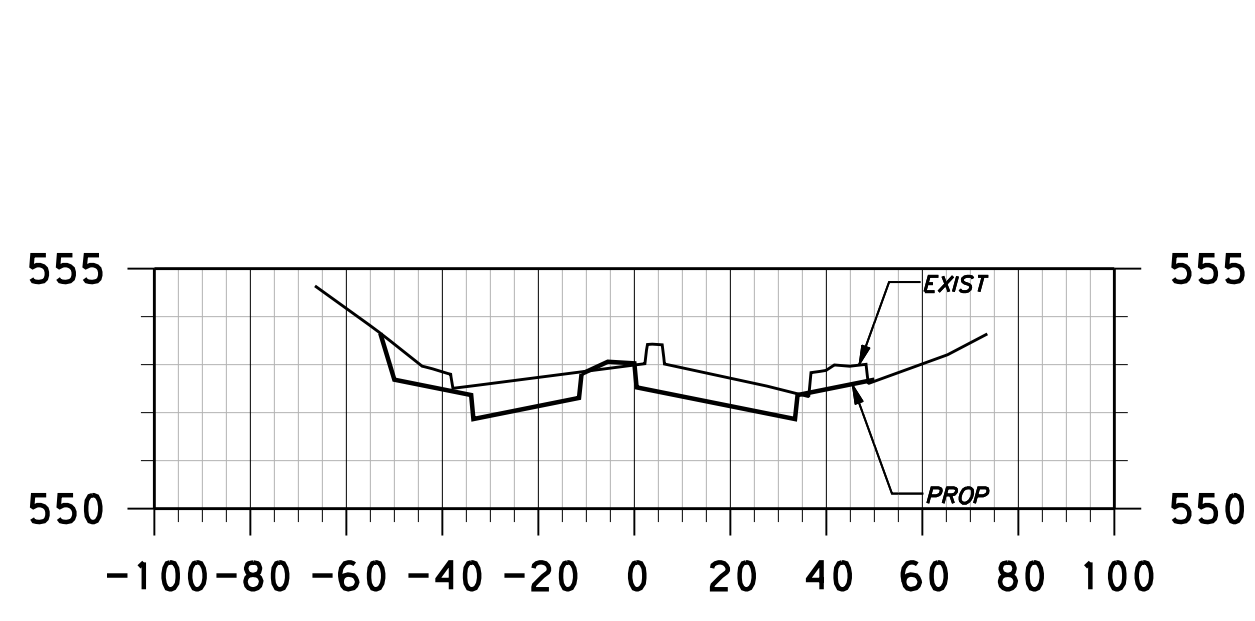
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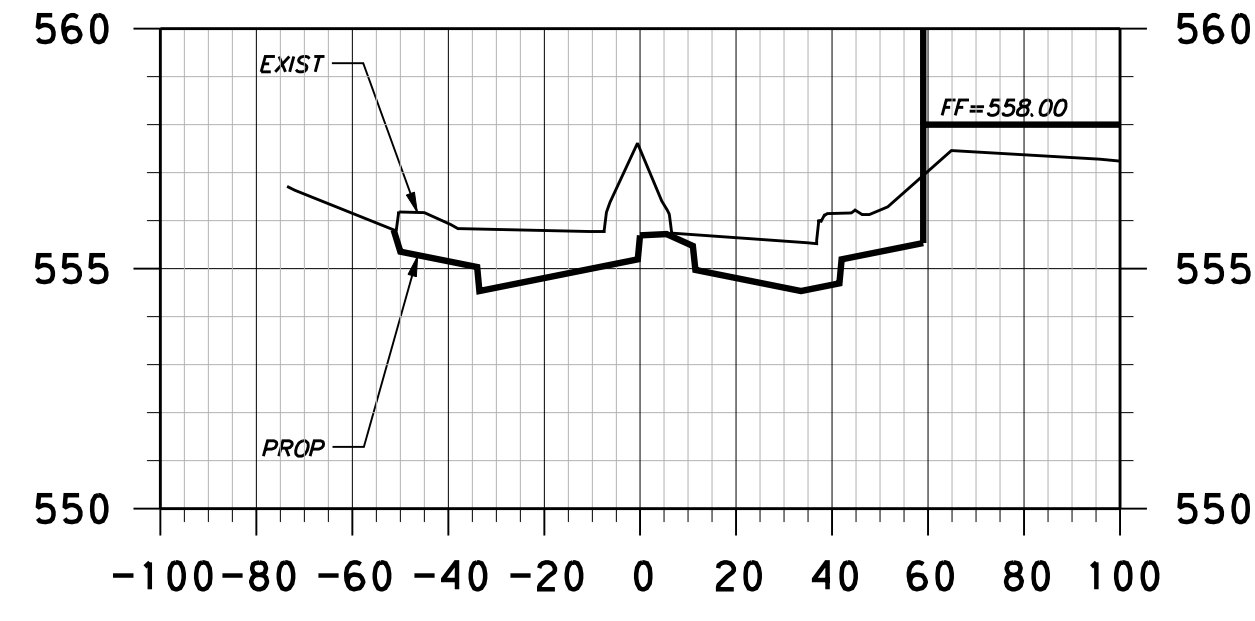
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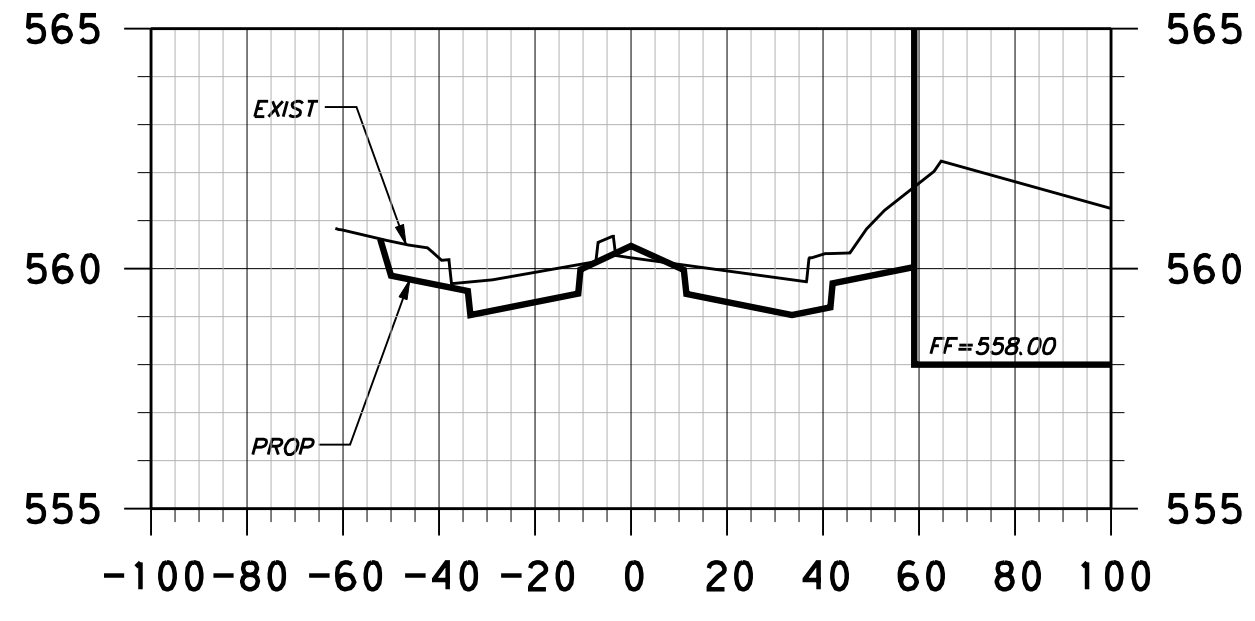
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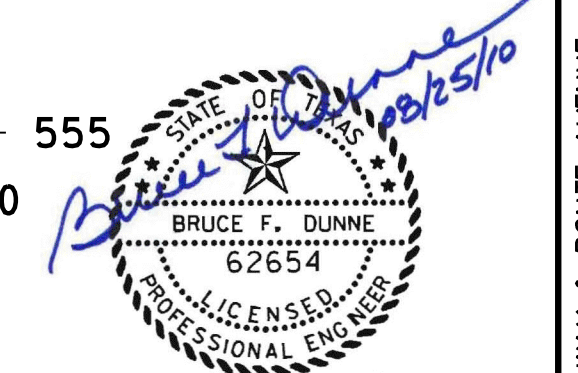
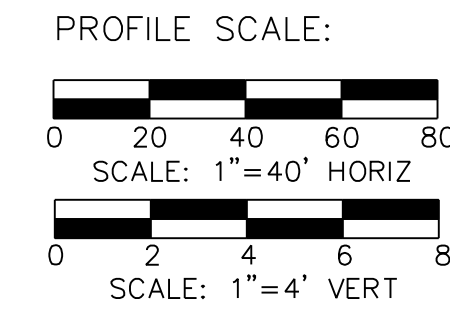
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NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

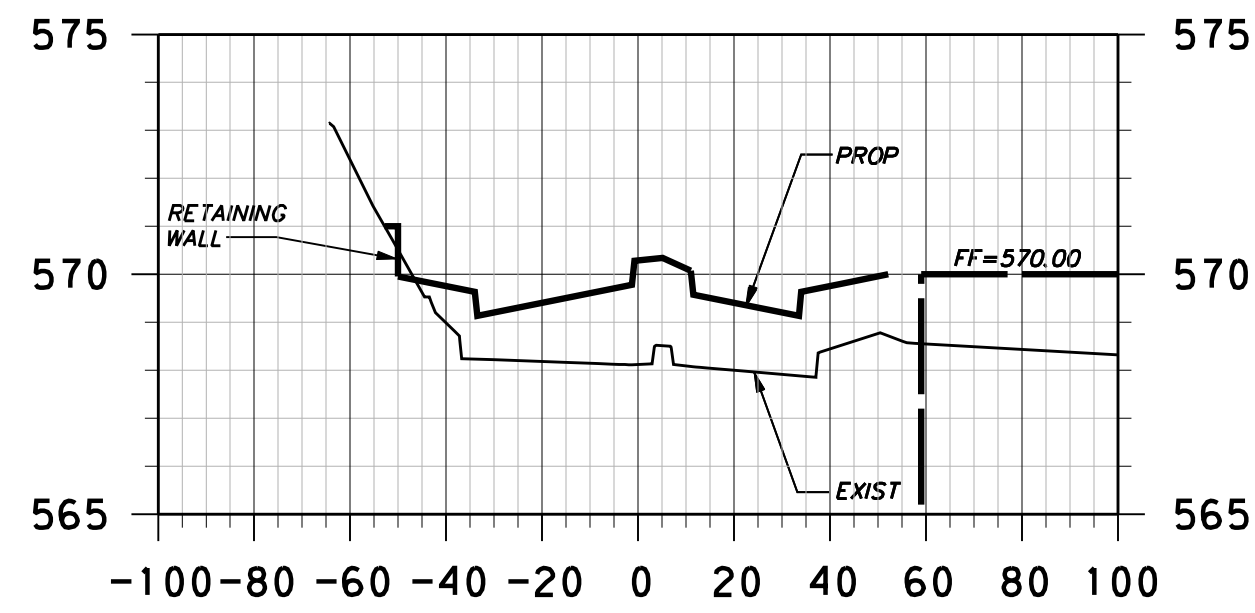
**CROSS-SECTIONS-VW**  
STA 8+50.00 TO STA 15+50.00

**icon** Consulting Engineers, Inc.  
Civil Engineers - Designers - Planners

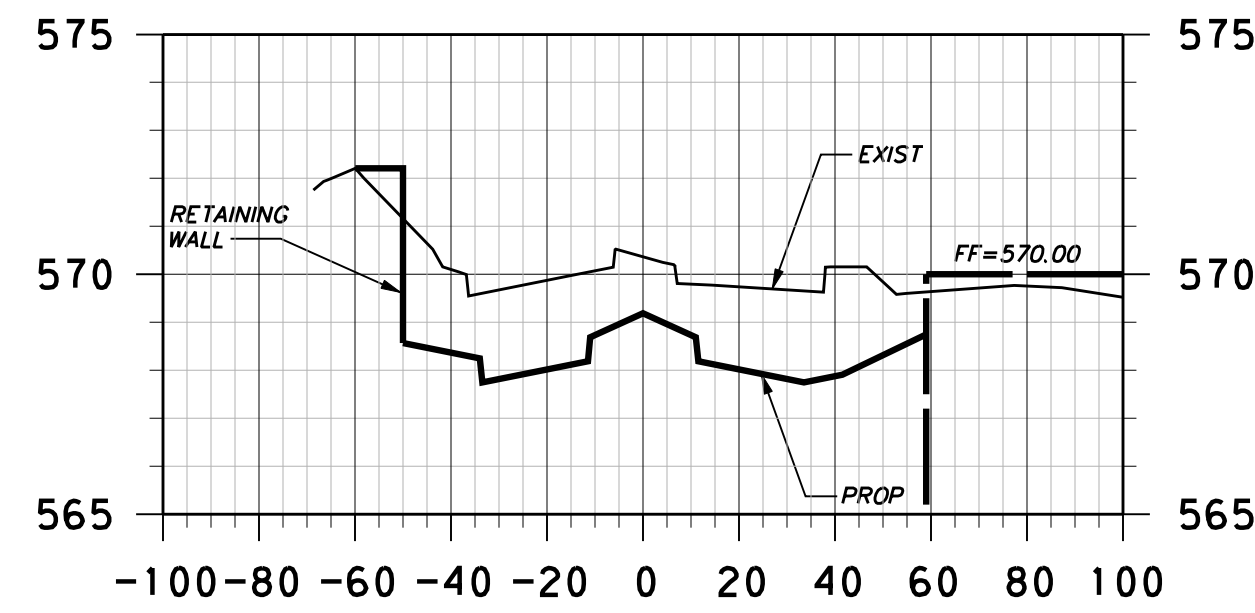
250 W. Southlake Blvd., Suite 117  
Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
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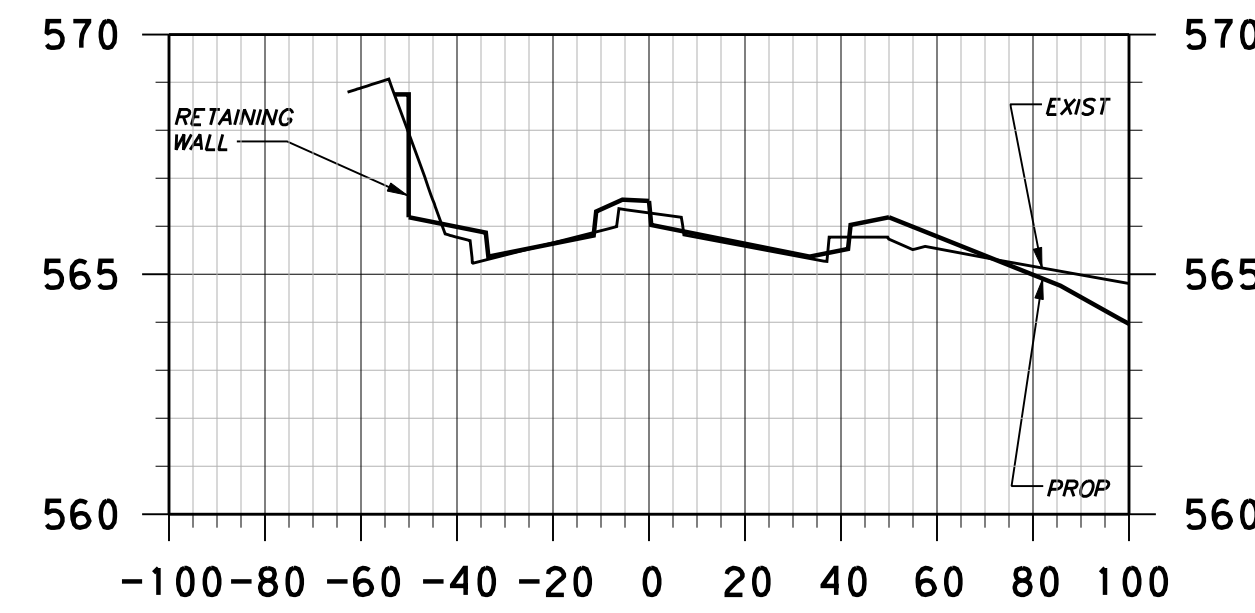
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



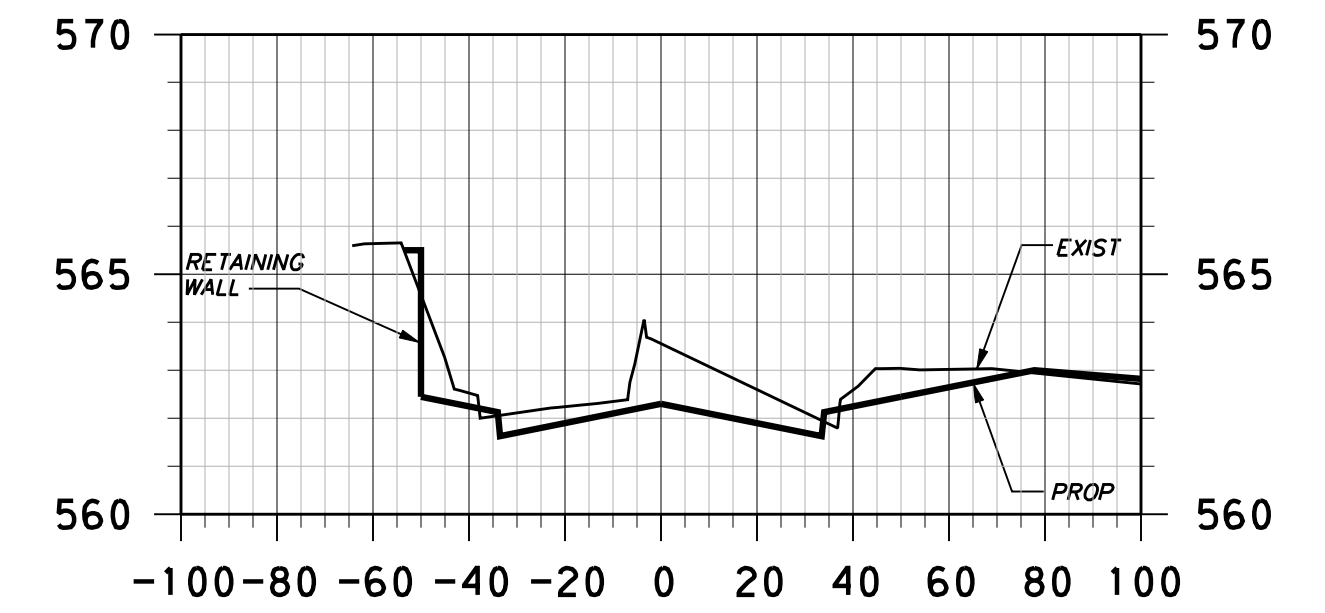
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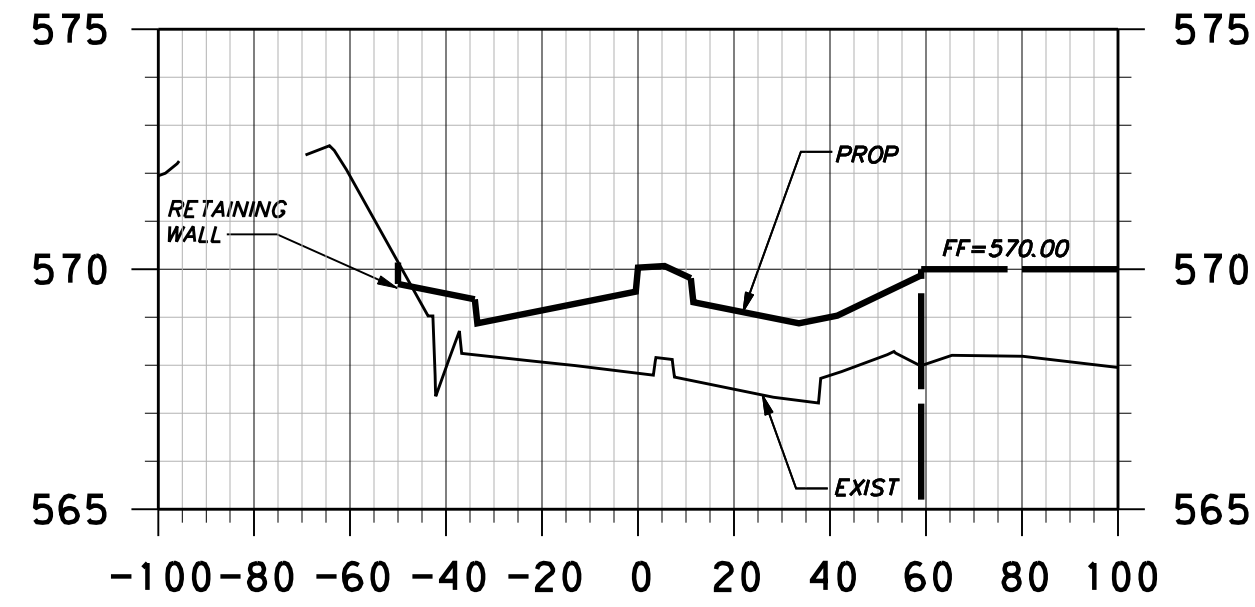
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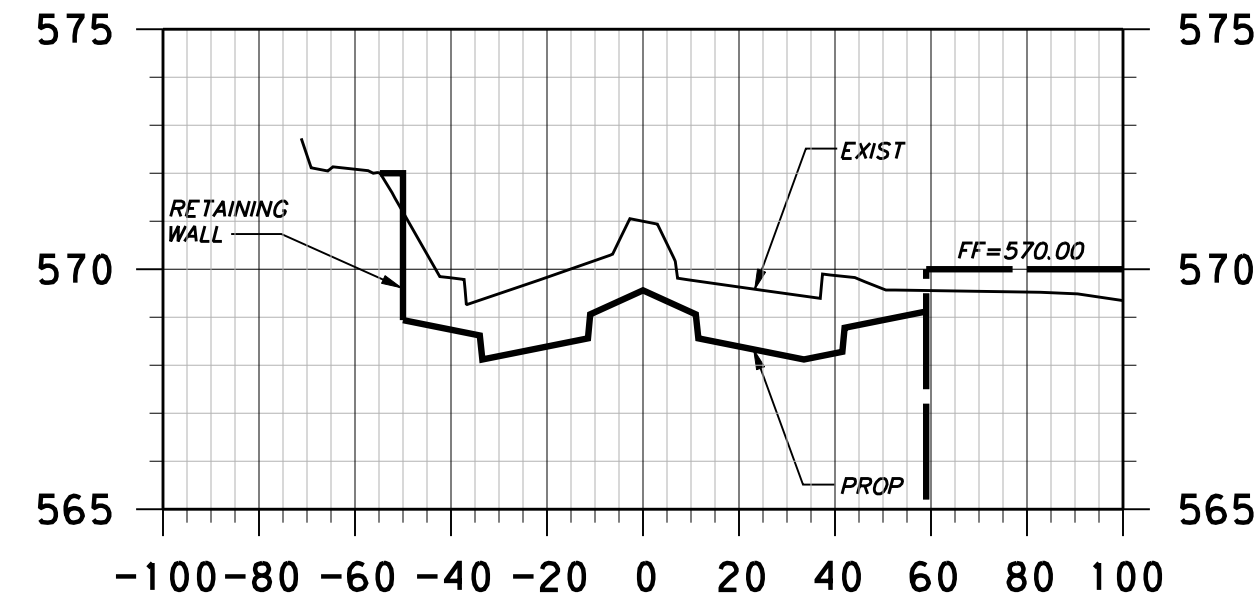
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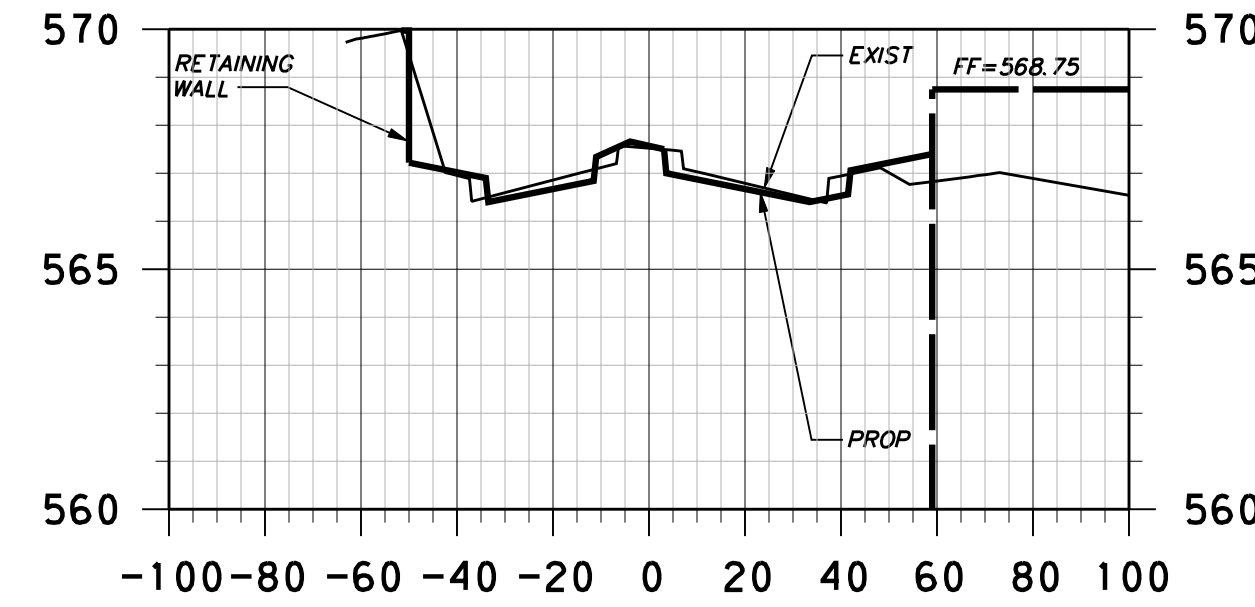
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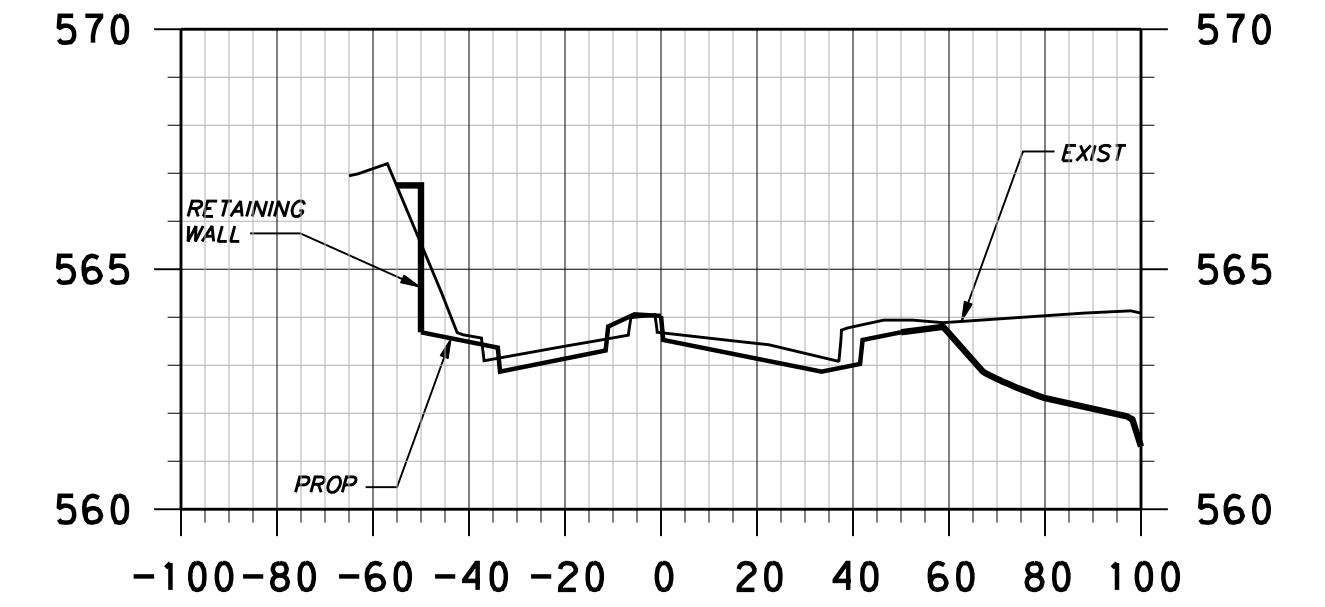
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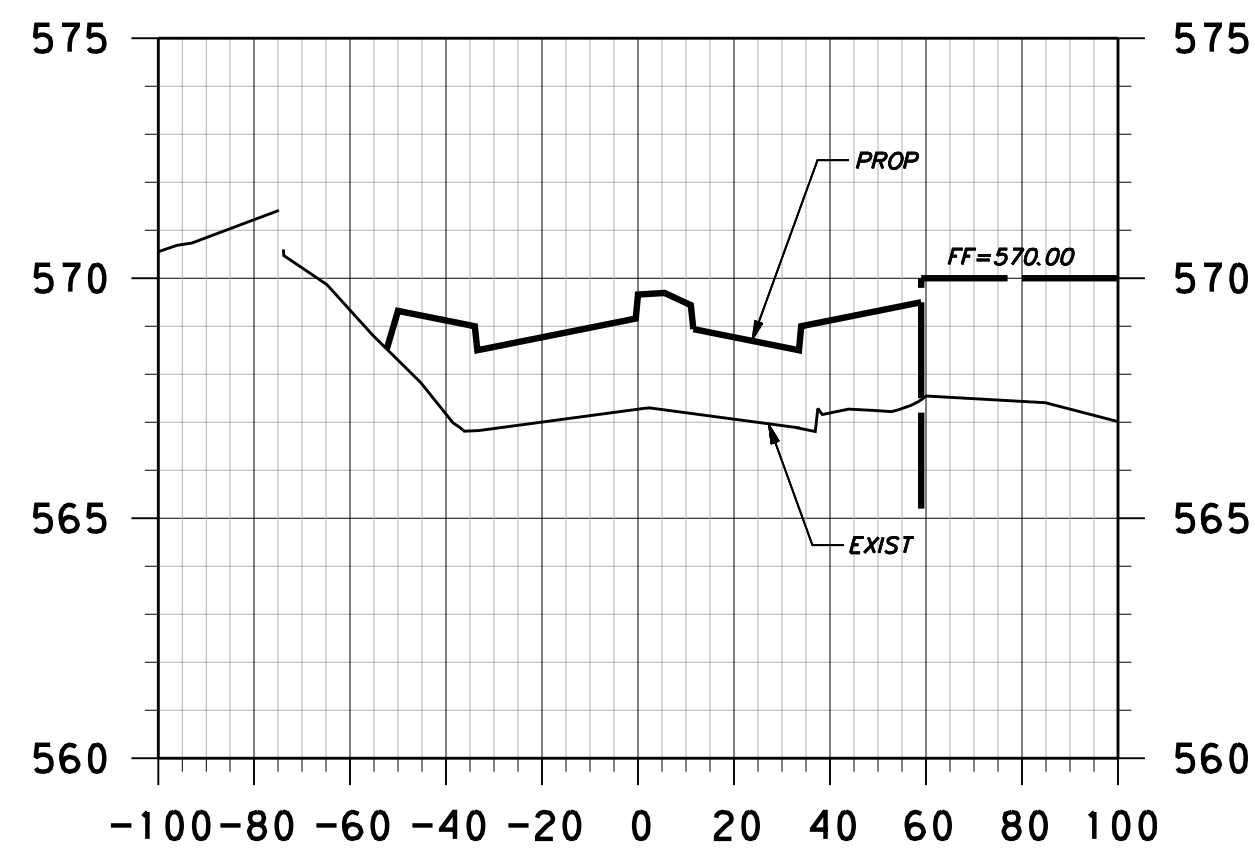
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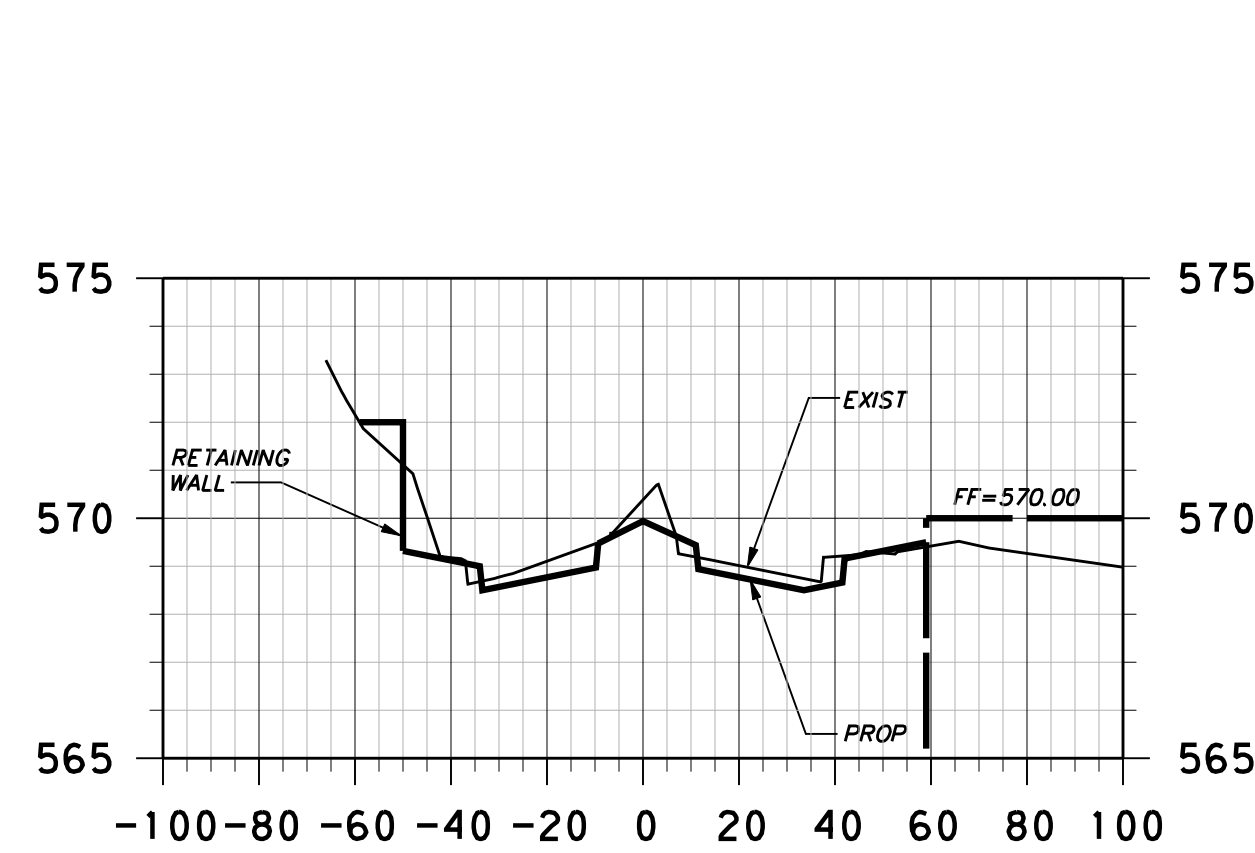
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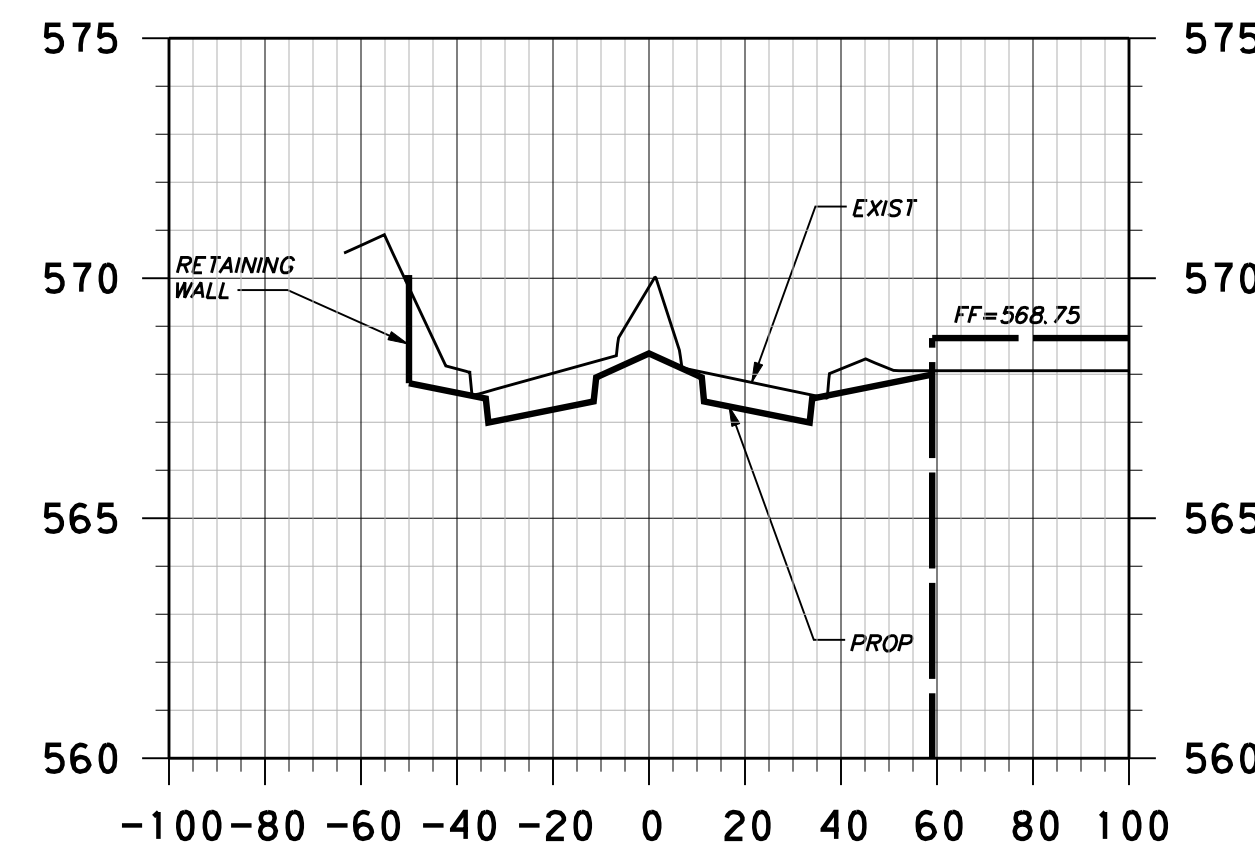
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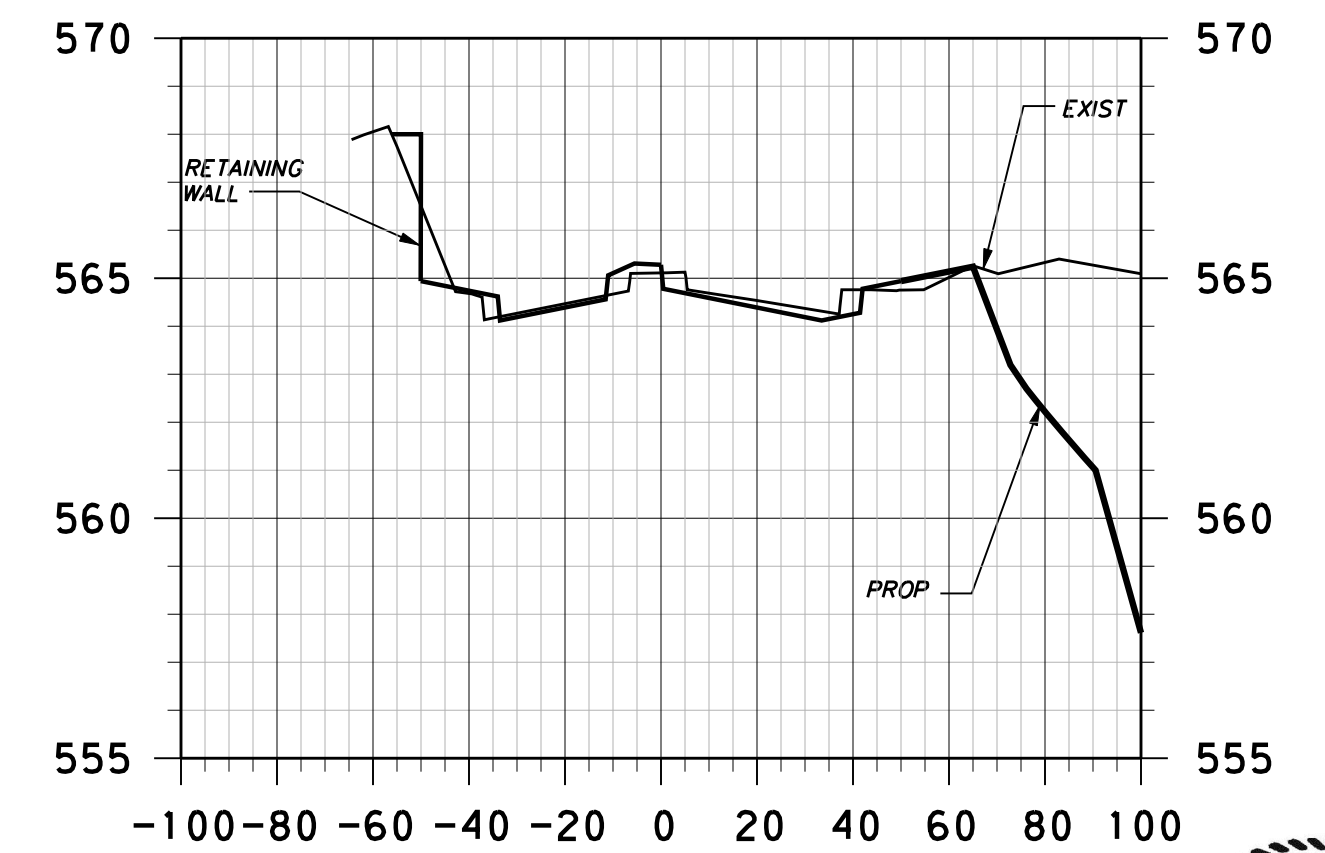
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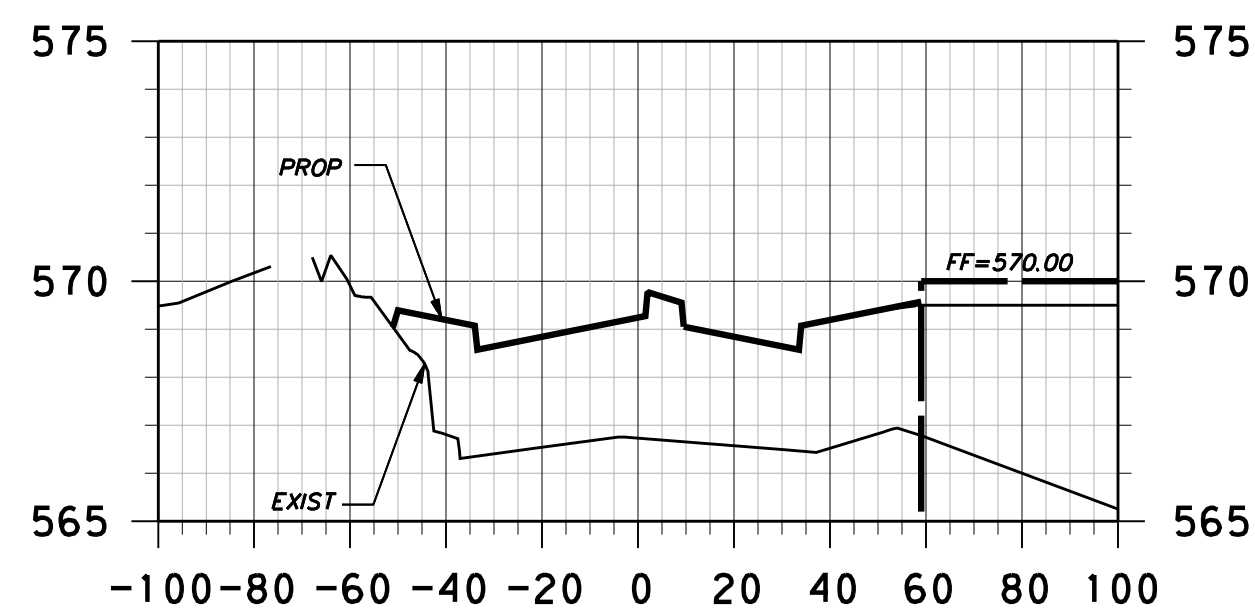
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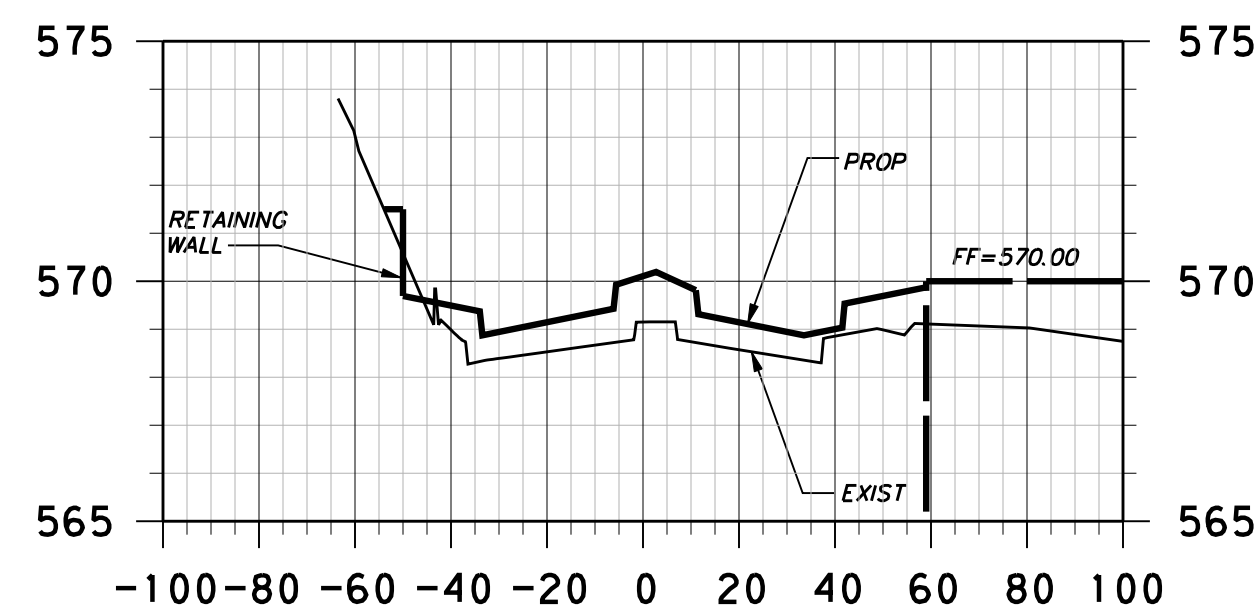
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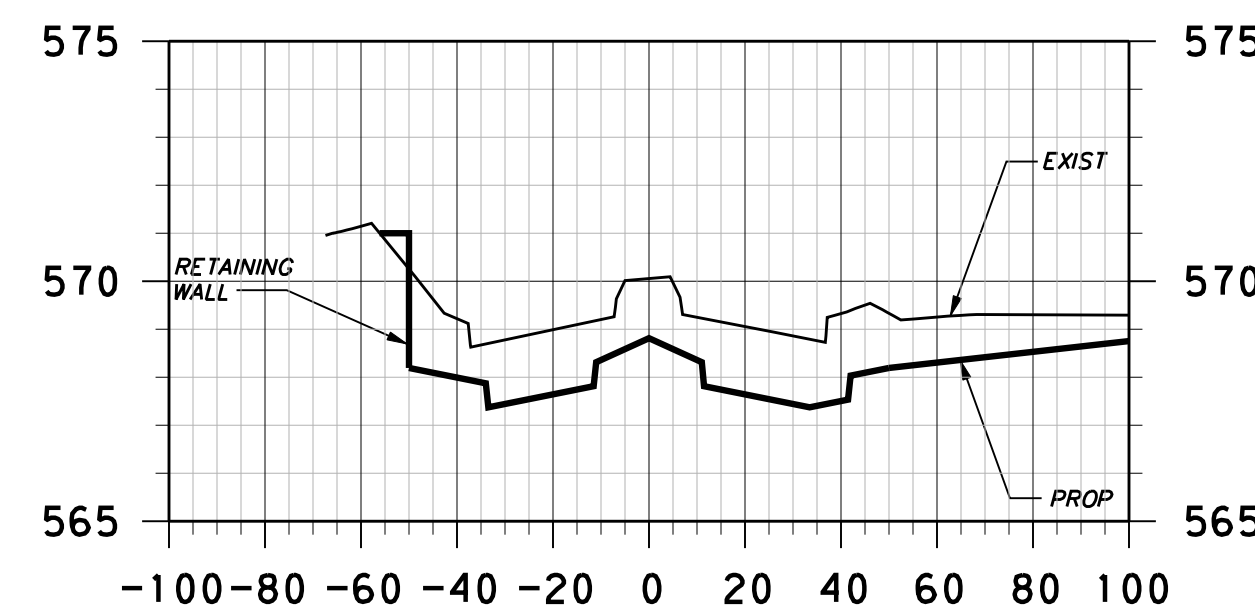
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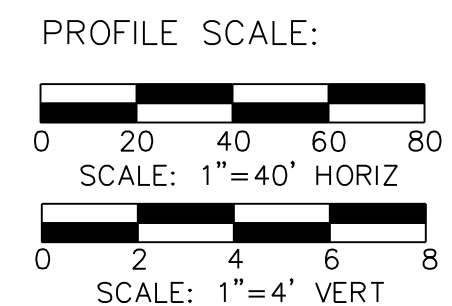
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NO.	REVISION	BY	DATE

**Addison!** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

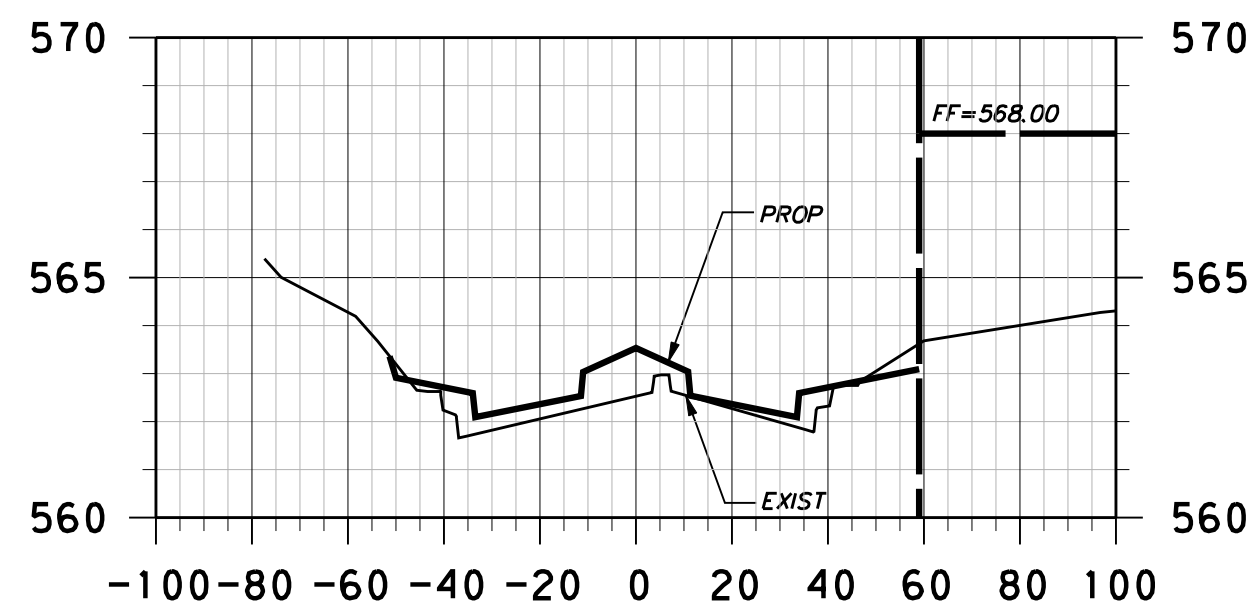
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

**CROSS-SECTIONS-VW**  
STA 16+00.00 TO STA 23+00.00

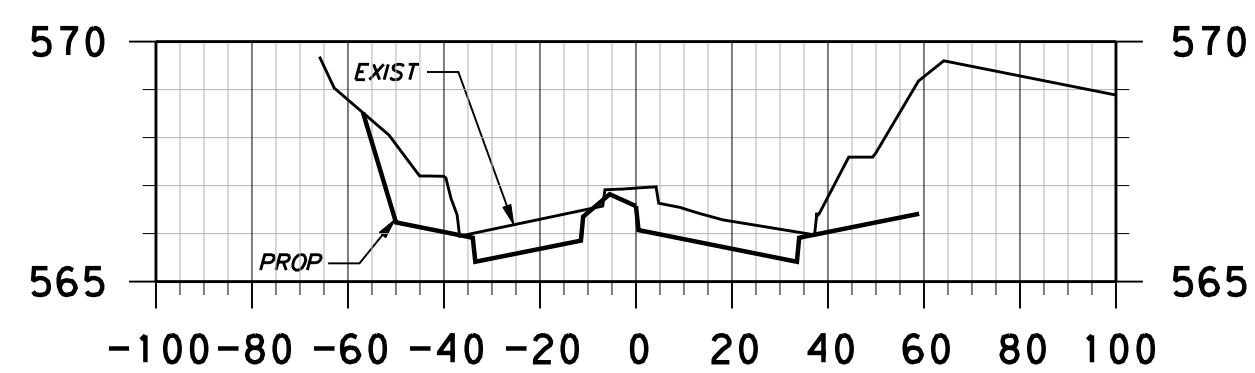
**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	93

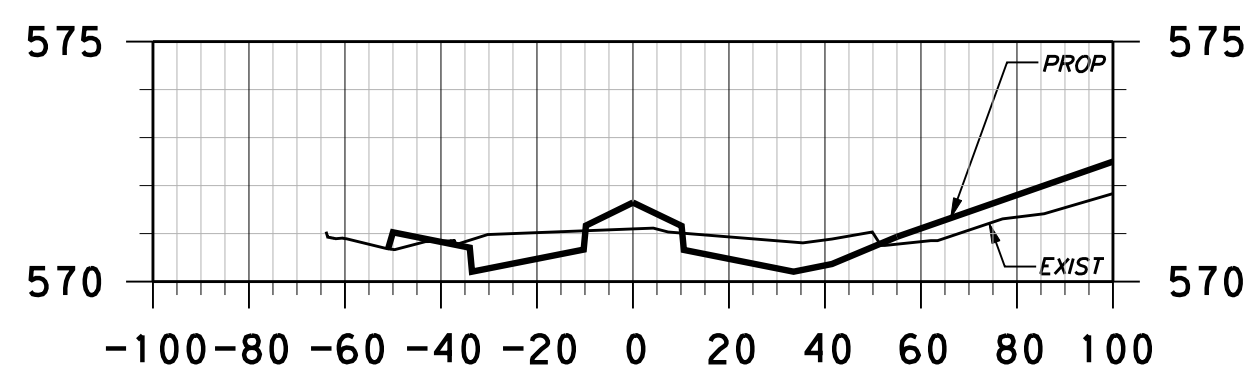
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



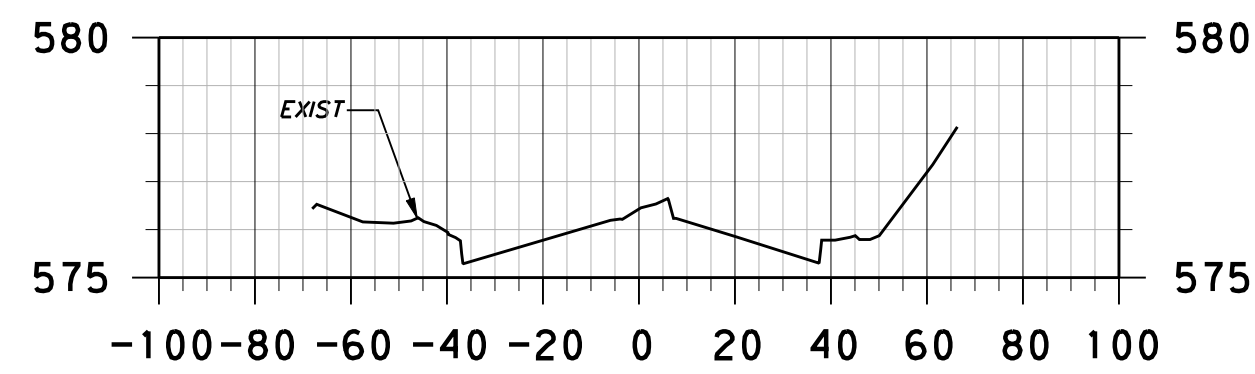
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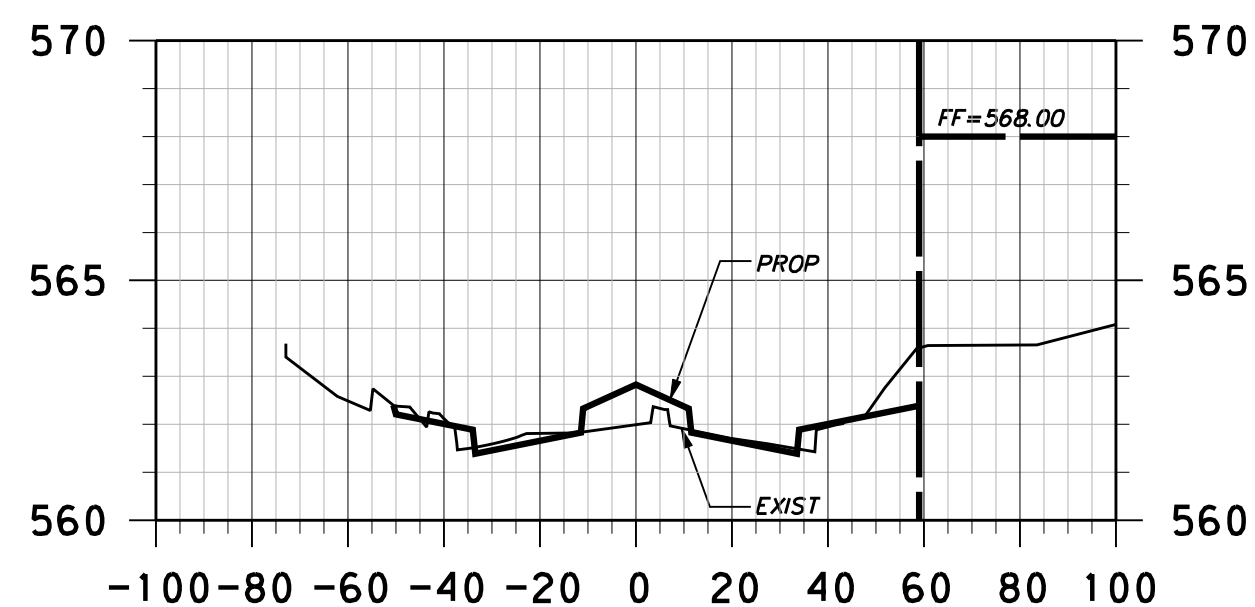
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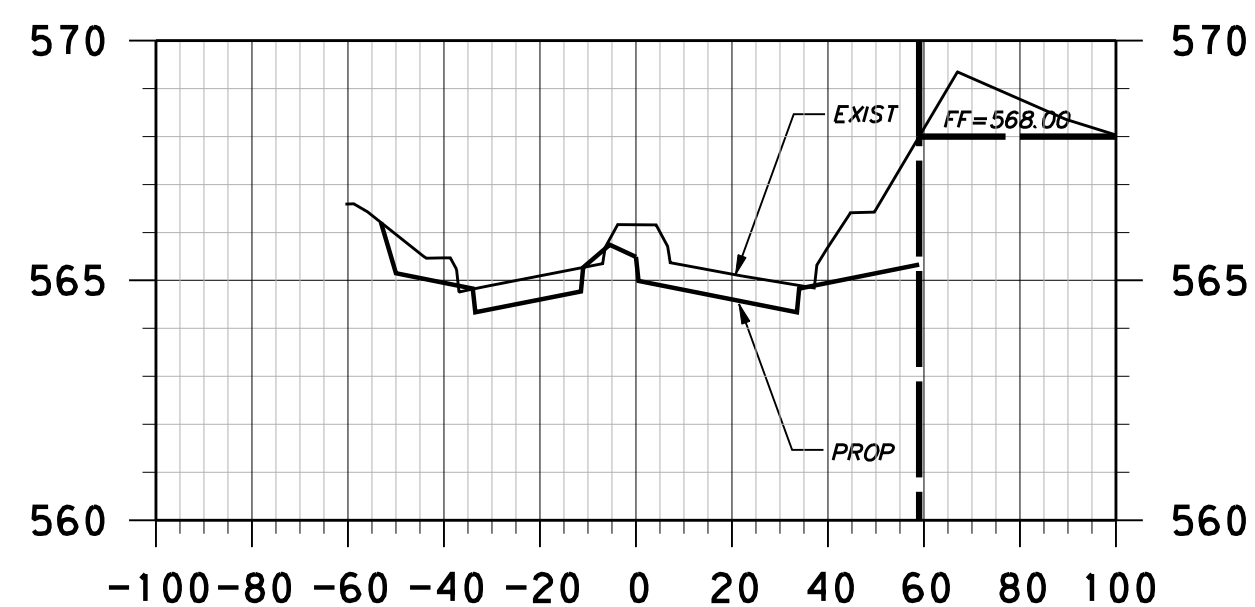
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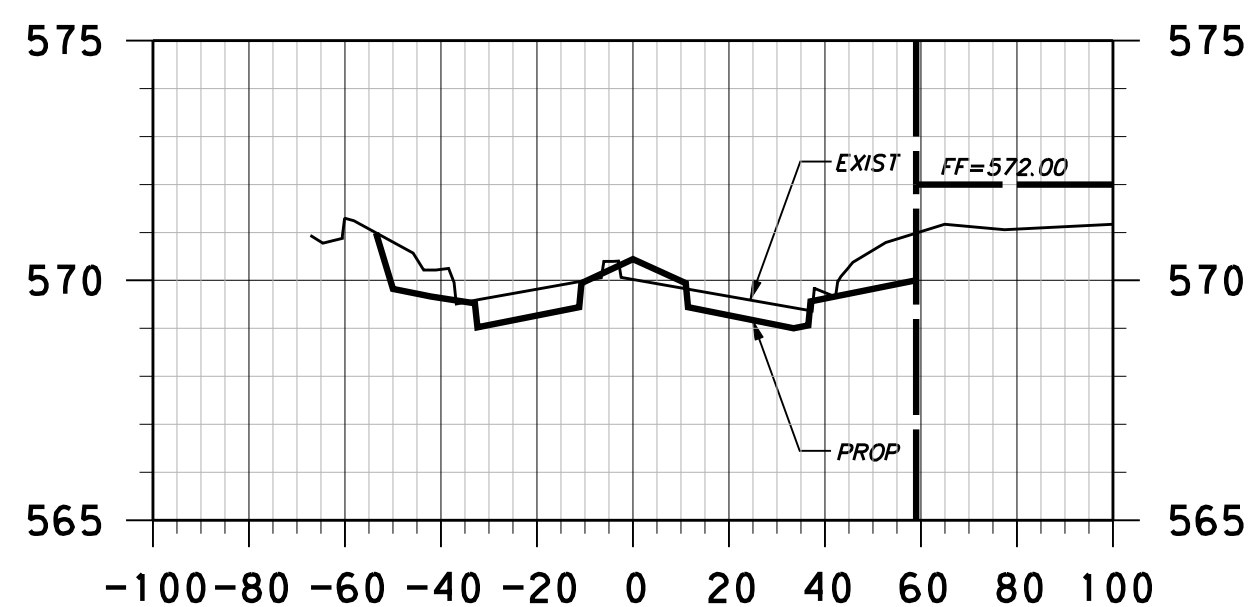
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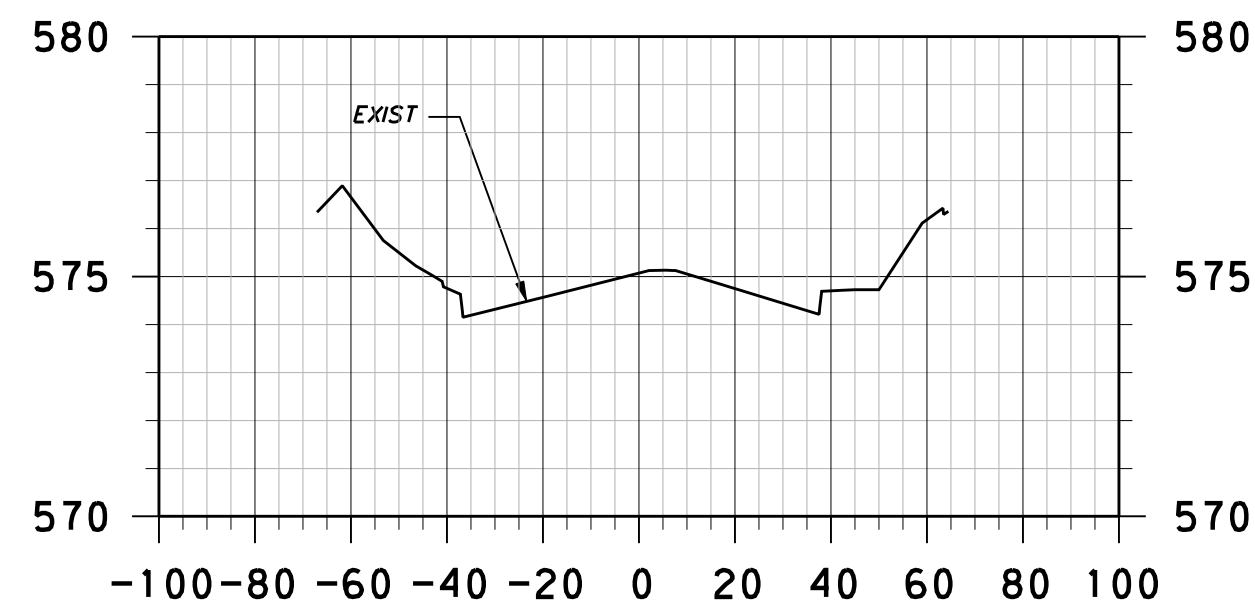
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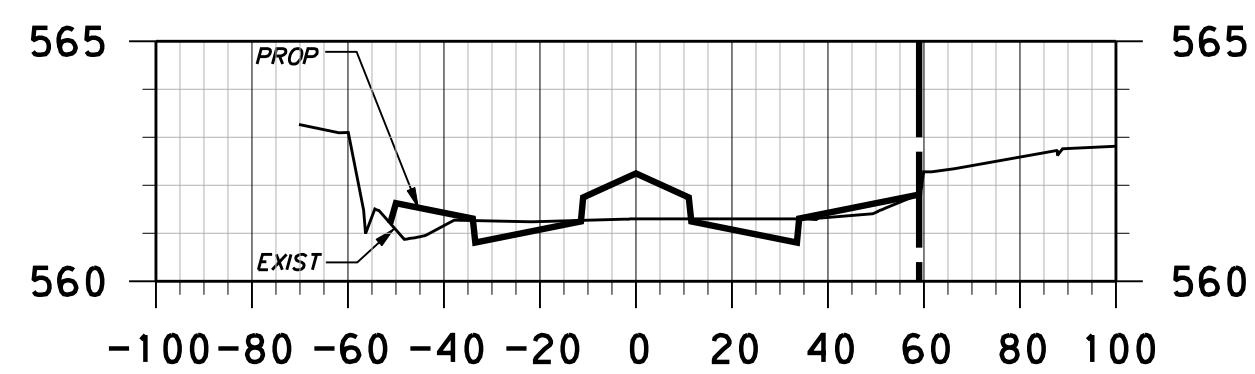
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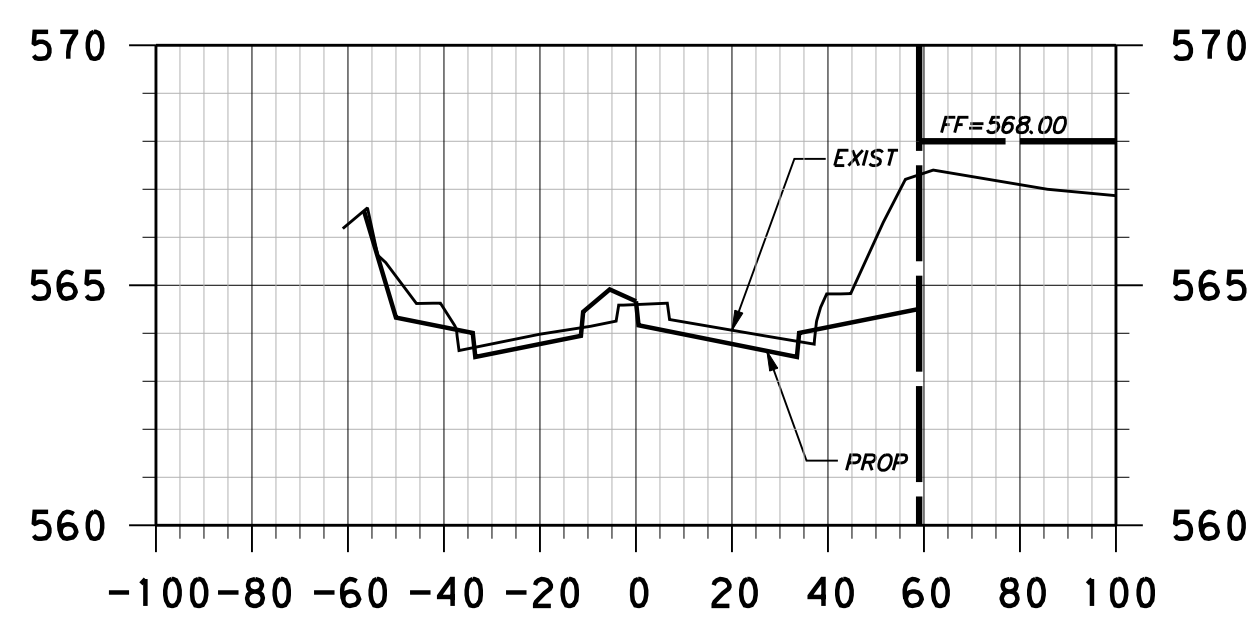
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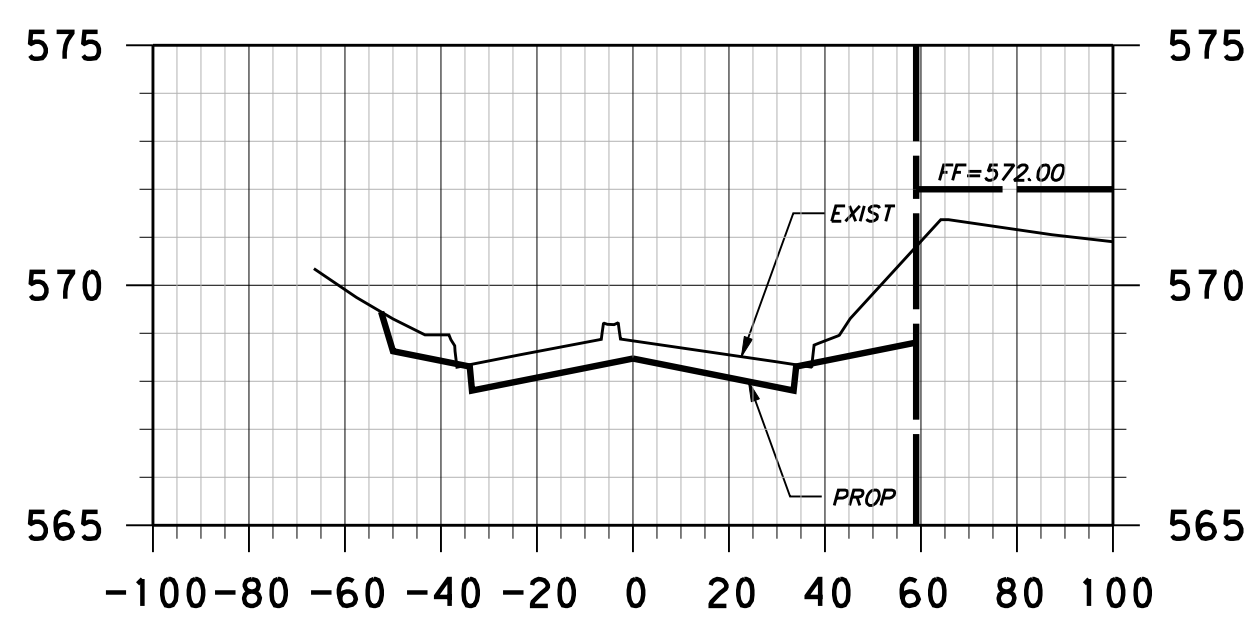
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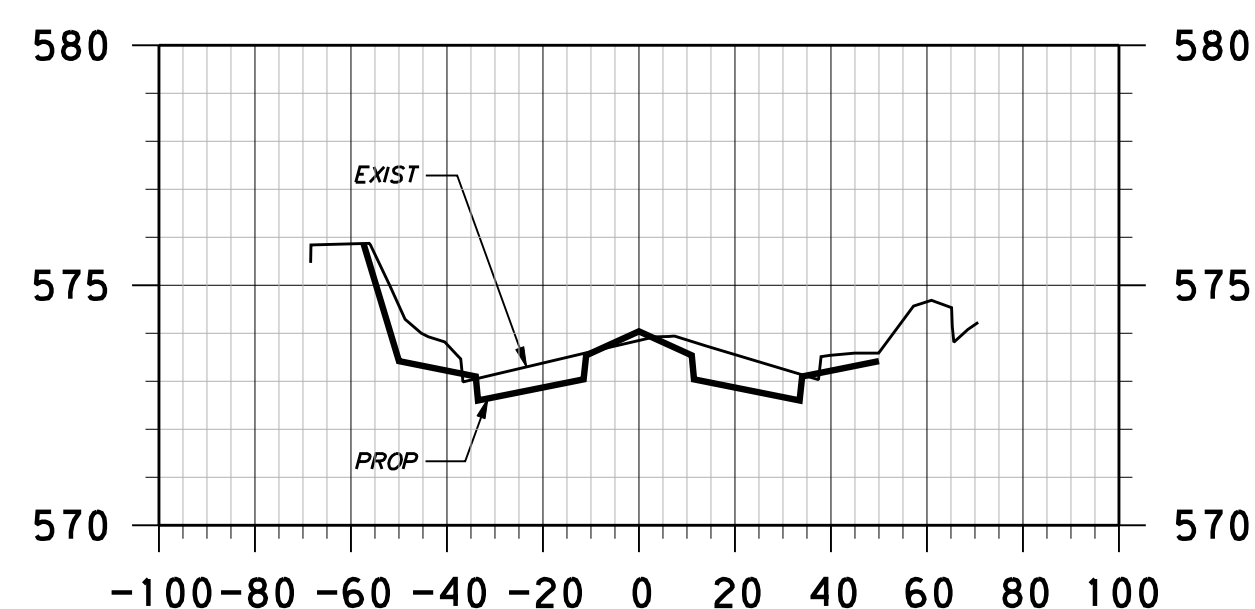
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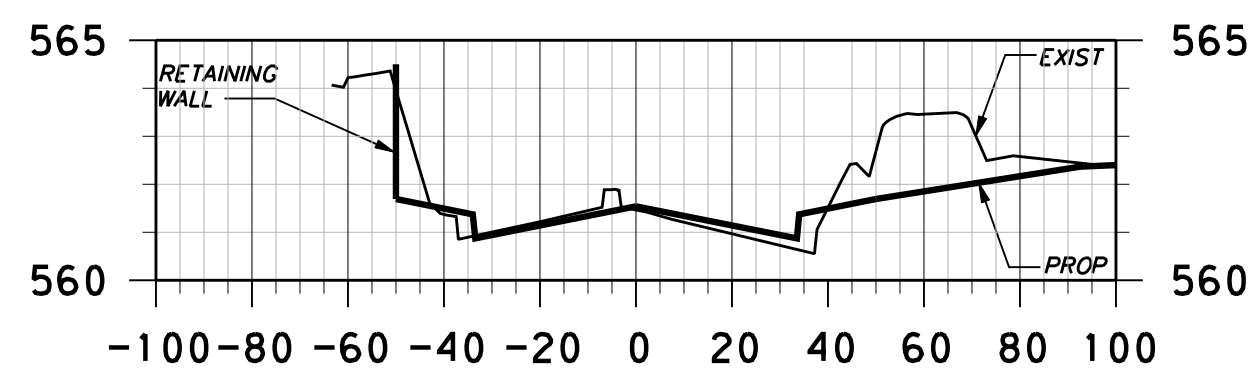
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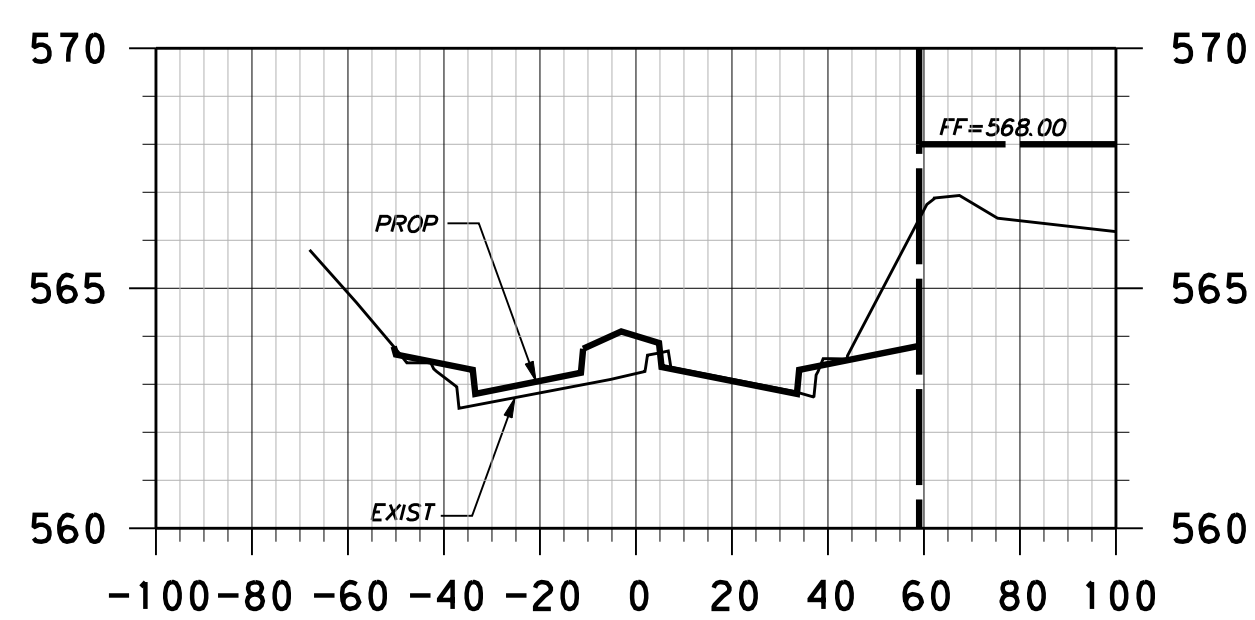
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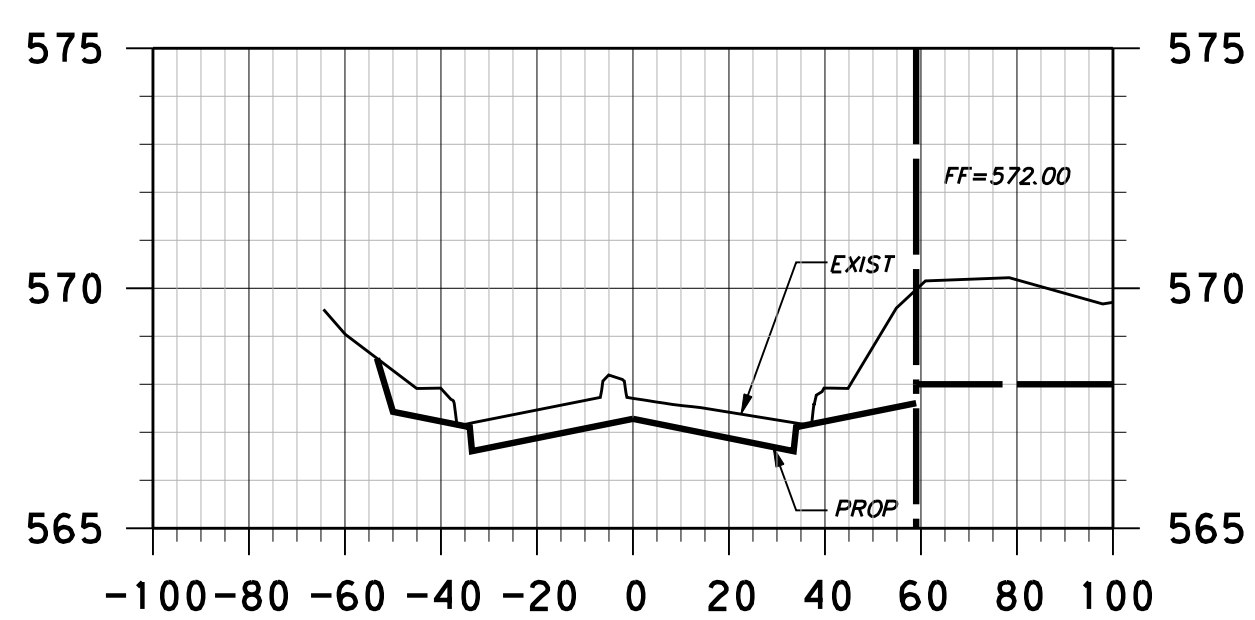
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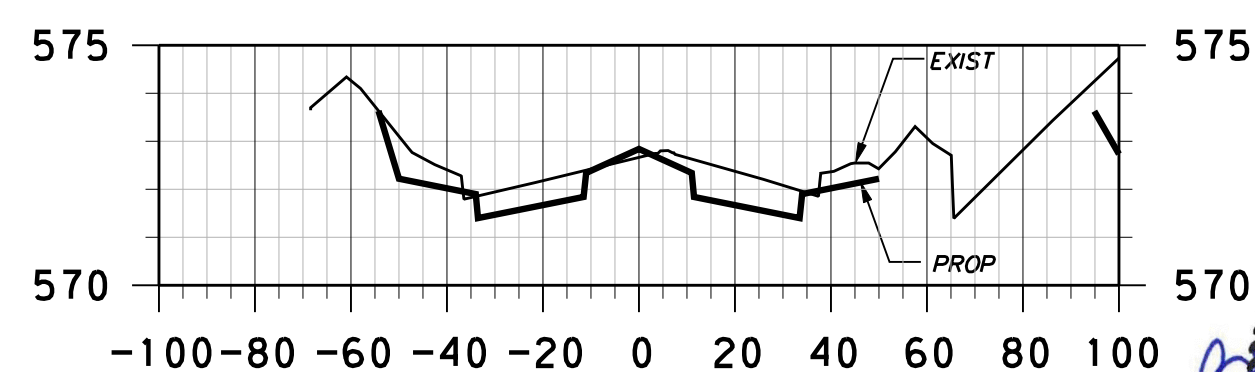
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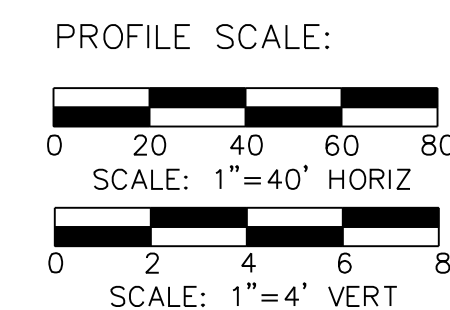
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NO.	REVISION	BY	DATE

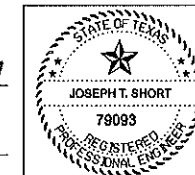
**Addison!** TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS  
 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY & PONTE AVENUE  
**CROSS-SECTIONS-VW**  
 STA 23+50.00 TO STA 31+00.00  
**icon** Consulting Engineers, Inc. 250 W. Southlake Blvd., Suite 117  
 Civil Engineers - Designers - Planners Southlake, Tx 76092 (817) 552-6210  
 PROJECT: 5029-01 DESIGN: ICE DRAWN: ICE DATE: MAY 7 2009 FILE: PW# 2009-01 SHEET: 94

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

QUANTITY SUMMARY - TRAFFIC SIGNAL INSTALLATION					
BID ITEM	SPEC	DESCRIPTION	UNIT	VITRUVIAN WAY AT PONTE AVENUE	
No.	No.				
1	416	DRILL SHAFT (24 IN) (TRF SIG POLE)	LF	6.0	
2	416	DRILL SHAFT (30 IN) (TRF SIG POLE)	LF	11.0	
3	416	DRILL SHAFT (36 IN) (TRF SIG POLE)	LF	39.0	
4	618	CONDUIT (PVC) (SCHD 40) (2")	LF	30.0	
5	618	CONDUIT (PVC) (SCHD 40) (3")	LF	40.0	
6	618	CONDUIT (PVC) (SCHD 40) (4")	LF	130.0	
7	618	CONDUIT (PVC) (SCHD 40) (4") (BORE)	LF	275.0	
8	620	ELEC CONDUCTOR (NO. 6) INSULATED	LF	20.0	
9	620	ELEC CONDUCTOR (NO. 6) BARE	LF	475.0	
10	620	ELEC CONDUCTOR (NO. 8) INSULATED	LF	780.0	
11	624	GROUND BOX TY C (162911) W/APRON	EA	5	
12		REMOVED FROM PLANS			
13	680	INSTALL HWY TRAF SIG (ISOLATED) *	EA	1	
14	681	TEMPORARY TRAFFIC SIGNALS	EA	1	
15	682	BACKPLATE (12 IN) (3 SEC)	EA	8	
16	682	BACKPLATE (12 IN) (4 SEC)	EA	4	
17	682	PED SIG SEC LED (2 INDICATIONS)	EA	8	
18	682	VEH SIG SEC (12 IN) LED (GRN ARW/YEL ARW)	EA	4	
19	682	VEH SIG SEC (12 IN) LED (GRN)	EA	12	
20	682	VEH SIG SEC (12 IN) LED (YEL)	EA	12	
21	682	VEH SIG SEC (12 IN) LED (RED)	EA	12	
22	684	TRF SIG CBL (TY A) (14 AWG) (5 CONDR)	LF	1,027.0	
23	684	TRF SIG CBL (TY A) (14 AWG) (7 CONDR)	LF	236.0	
24	684	TRF SIG CBL (TY A) (14 AWG) (20 CONDR)	LF	530.0	
25	686	INS TRF SIG PL AM (S) 1 ARM (32')	EA	1	
26	686	INS TRF SIG PL AM (S) 1 ARM (36')	EA	1	
27	686	INS TRF SIG PL AM (S) 1 ARM (44')	EA	2	
28	688	PED DETECT (2 INCH PUSH BTN)	EA	8	
29	6266	VIVDS PROCESSOR SYSTEM	EA	1	
30	6266	VIVDS CAMERA ASSEMBLY	EA	4	
31	6266	VIVDS SET-UP SYSTEM	EA	1	
32	6266	VIVDS COMMUNICATION CABLE (COAXIAL)	LF	759.0	
33		UNI-DIRECTIONAL OPTICOM DETECTOR	EA	4	
34		PHASE SELECTOR	EA	1	
35		OPTICOM DETECTOR CABLE	LF	715.0	
36	A9001	HARDENED ETHERNET SWITCH	EA	1	
37	A9002	VIDEO SERVER	EA	1	
38	A9007	WIRELESS ETHERNET RADIO EQUIPMENT (INCLUDING CABLE)	EA	1	

\* THE TRAFFIC SIGNAL CONTROLLER AND CABINET ASSEMBLY SHALL BE IN ACCORDANCE WITH TOWN OF ADDISON SPECIAL SPECIFICATION A9004. ALSO INCLUDED IN THIS BID ITEM SHALL BE THE SERIAL PORT SERVER. IT SHALL BE IN ACCORDANCE WITH TOWN OF ADDISON SPECIAL SPECIFICATION A9006.

*J. T. Short* 4/28/09  
DATE  
JOSEPH T. SHORT, P. E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450



NO.	REVISION	BY	DATE		
<b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS PAVING, DRAINAGE & UTILITY IMPROVEMENTS VITRUVIAN WAY AND PONTE AVENUE <b>TRAFFIC SIGNAL QUANTITY SUMMARY</b> VITRUVIAN WAY AT PONTE AVENUE					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5028-01	CJP	CJP	APR 28, 2009	PW# 2009-01	TS1

TxDOT Standard Sheets SMA-80 have been modified.

**THE TRAFFIC SIGNAL INSTALLATION CONSISTS OF THE FOLLOWING PRINCIPAL ITEMS:**

1. Furnishing and installing a controller, cabinet, digital detectors, and card rack assemblies, as required.
2. Furnishing and installing mast arm poles, signal heads, and signal cable.
3. Furnishing and installing an opticom detector system and a VIVDS detection system.
4. Furnishing and installing conduit and ground boxes.
5. Furnishing and placing all concrete and reinforcing steel for the signal pole foundations, and controller foundation.
6. Modification to the existing traffic signal at Marsh Lane and Brookhaven Club Drive during the multiple phases of construction.
7. The CONTRACTOR shall also furnish and install all other items not listed above which are needed to provide the complete traffic signal installation as called for in the plans and specifications.
8. Unless directed by the City, the signal shall be placed in full operation between 9:00 A.M. - 12:00 P.M. (noon) on Monday, Tuesday, or Wednesday only.

**SIGNAL TECHNICIAN**

A signal technician from the Town of Addison shall be present when the new traffic signal at Brookhaven Club Drive and Ponte Avenue is placed in operation. The CONTRACTOR shall notify Ms. Nancy Cline at (972) 450-2871 approximately 48 hours in advance of the turn on.

**TEST PERIOD FOR SIGNALS**

Once the new signal equipment has been installed and placed in operation, it shall operate continuously for a minimum of 30 calendar days in a satisfactory manner. Equipment failures during these 30 days will cause the test period to start over.

**PHASES OF SIGNAL OPERATION**

The signal installations shall be wired to operate in accordance with phase diagrams in these plans. Time intervals shall be adjusted and set as directed by the Town of Addison or the City of Farmers Branch, depending on the intersection.

**EXISTING UTILITIES**

The exact location of the underground utilities is not certain. The CONTRACTOR shall contact the Town of Addison and the City of Farmers Branch and utility companies with utilities in the area for exact location prior to drilling for foundations and any other work that might interfere with or damage present utilities. Known utilities include city water and sewer lines, TXU electric lines, SBC telecommunication lines, TXU gas lines, and fiber optic lines. Location of some of these utilities can be determined by calling 1-800-DIG-TESS. No additional payment will be made for relocation of any foundations due to utilities.

Texas State Law, Article 1436C, makes unlawful the operation of equipment or machines within 10 feet of any overhead electrical line unless danger against contact with high voltage lines has been effectively guarded against pursuant to the provisions of the article. When construction operations requires working near an overhead electrical line, the CONTRACTOR shall contact the owner/operator of the overhead electrical line to make adequate arrangements and to take necessary safety precautions to ensure that all laws, electrical line owner/operator requirements and standard industry safety practices are met.

**ELECTRICAL CONDUCTORS**

All electrical connectors for breakaway poles shall be breakaway (Buchannon 65u, Bussman hebw Littlefuse let, or equal) in accordance with RID(2). All electrical connections for neutrals shall be breakaway, shall have a white color marking, and shall have permanently installed solid neutral Buchannon 20u, Bussman het, Littlefuse let, or equal).

Grounding conductors that share the same conduit, ground box, or structure shall be bonded together at every accessible point in accordance with the NEC.

**CONDUIT**

Underground conduit for cable shall be PVC. All couplings and connections shall be tight and waterproof.

A continuous bare wire no. 6 or larger shall be installed in every PVC conduit throughout the electrical system in accordance with the electrical detail sheets, and the latest edition of the National Electrical Code.

PVC conduit shall be heavywall schedule 40, unless otherwise approved by the Engineer.

All conduit elbows and extensions required to be installed on PVC conduit systems shall be schedule 40 PVC and will not be paid for separately, but will be considered subsidiary to various bid items.

Conduit to be placed under existing pavement shall be placed at a minimum depth of 3 feet below the pavement surface. If it is determined by the Engineer that it is impractical to place conduit by jacking or boring, the open trench method may be used, when approved, at no additional expense to the owner. In the event that the open trench method is used, the trench shall be backfilled to a condition acceptable to the Engineer.

**POLE ASSEMBLIES**

Critical pole assembly features and dimensions required for this project are shown on the plan detail sheets. Pole shaft/mast arm identification numbers shall be stenciled on pole shafts and mast arms before shipment to insure matching of poles and mast arms during field assembly.

Signal pole assemblies shall be powder coated SILVER.

**POLE FOUNDATIONS**

No mast arm poles shall be placed on the foundations prior to seven (7) days following placement of concrete.

The dimensions shown on the plans for locations of signal foundations, conduit, and other items may be varied to meet local conditions, subject to approval by the Town.

The CONTRACTOR shall notify Ms. Nancy Cline of the Town of Addison at (972) 450-2871 at least 48 hours before placing concrete. Cylinders will be made for testing by a laboratory approved by Town personnel.

All exposed signal pole and controller foundations shall receive a Class C finish as per TxDOT item 427.

**SIGNAL HEADS**

Unless otherwise shown in the plans, all signal heads shall be mounted vertically.

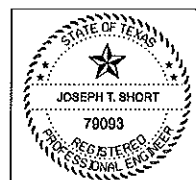
All signal heads shall be covered with burlap or other approved material from the time of installation until the signal is placed in operation.


LED signal lamps shall be used for all signal indications and furnished and installed by the CONTRACTOR.

All new vehicle signal heads shall be polycarbonate with polycarbonate backplates. Pedestrian signal heads shall be aluminum.

*J. T. Short* 4/28/09  
 DATE

JOSEPH T. SHORT, P.E.  
 LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450



NO.		REVISION		BY	DATE
 <b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS					
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY AND PONTE AVENUE					
<b>GENERAL NOTES</b> SHEET 1 OF 2					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	CJP	CJP	APR 28, 2009	PW# 2009-01	TS2

PAVING, DRAINAGE & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

**OPTICOM DETECTORS**

The CONTRACTOR shall furnish and install an opticom detector system manufactured by Global Traffic Technologies for the intersection of Vitruvian Way and Ponte Avenue. The CONTRACTOR shall furnish 4-Type 721 uni-directional opticom detectors, 1-Type 754 4 Channel phase selector, and opticom detector cable.

**WIRING**

Extra cable length shall be included in each run to provide adequate slack, as determined by the Town, at each ground box or foundation.

No splicing shall be allowed in the opticom detector or VIVDS cables.

No splicing shall be allowed in the traffic signal cable except at the pole base.

**SIGNING**

All new signs shall be furnished and installed by the CONTRACTOR. All new sign sheeting shall be High Intensity Prismatic (HIP).

The CONTRACTOR shall verify the specifications and all information to be placed on the Illuminated Street Name Signs (ILSNs) with the Town of Addison prior to fabrication. The CONTRACTOR shall contact Ms. Nancy Cline at (972) 450-2871 to obtain this information.

**VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS)**

All equipment required for installation of a complete Econolite Solo Terra Pro VIVDS detection system, including VIVDS cable, will be furnished and installed by the CONTRACTOR according to TxDOT Special Specification 6266.

VIVDS Processor System: The CONTRACTOR shall furnish and install adequate numbers of VIVDS modular units (a 4 Channel card with expansion module) required to handle four camera inputs.

VIVDS Set-Up System: The CONTRACTOR will not be required to supply a computer for VIVDS set-up on this project. If a computer is required to set-up the VIVDS, the CONTRACTOR shall supply and use his/her own computer.

**TRAFFIC SIGNAL CONTROLLER & CABINET ASSEMBLY**

The CONTRACTOR shall furnish and install an Econolite ASC/3-1000 TS2 traffic signal controller and cabinet assembly at the intersection of Vitruvian Way at Ponte Avenue. This equipment shall be in accordance with Town of Addison Special Specification A9004. CONTRACTOR shall be paid according to "Installation of Highway Traffic Signals."

A serial port server shall be furnished and installed by the CONTRACTOR according to Town of Addison Special Specification A9006.

The traffic signal controller cabinet shall be aluminum with and aluminum base.

**WIRELESS COMMUNICATION**

The CONTRACTOR shall furnish and install a Wireless Ethernet Radio Subscriber Unit and CAT 5E Ethernet Cable at the intersection of Vitruvian Way and Ponte Avenue. This equipment shall be furnished in accordance with the Town of Addison Special Specification A9007.

The CONTRACTOR shall furnish and install a Hardened Ethernet Switch inside the controller cabinet at the intersection. The Ethernet Switch shall be supplied in accordance with the Town of Addison Special Specification A9001.

The CONTRACTOR shall also furnish and install a Video Server inside the controller cabinet at the intersection. The Video Server shall be supplied in accordance with the Town of Addison Specification A9002.

**TEMPORARY TRAFFIC SIGNALS**

A signal technician from the City of Farmers Branch shall be present when the new temporary signal equipment is placed into operation at the intersection of Marsh Lane and Brookhaven Club Drive. The CONTRACTOR shall notify Mr. Dave Davis at (972) 247-3131 approximately 48 hours in advance of beginning work on the existing signal and turning on the additional signal equipment.


The CONTRACTOR shall be responsible for furnishing, installing, and maintaining the existing signal equipment and any temporary traffic signal equipment required at the intersection of Marsh Lane and Brookhaven Club Drive throughout construction. Adjustment and/or modification of said equipment shall also be the responsibility of the CONTRACTOR.

CONTRACTOR shall take possession of and store any traffic signs at the intersection of Marsh Lane and Brookhaven Club Drive that are to be removed during construction and reinstalled upon completion of construction.

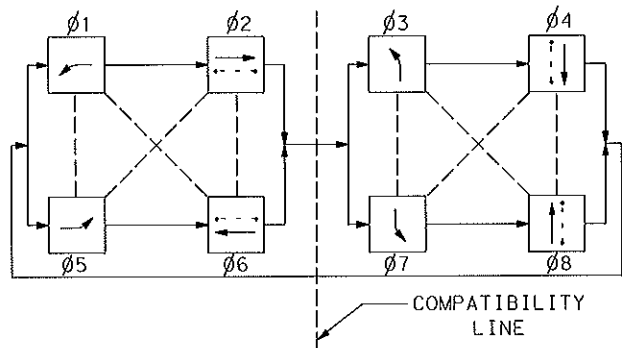
CONTRACTOR shall relocate pedestal pole P-2 and all equipment located on the pole at the intersection of Marsh Lane and Brookhaven Club Drive upon completion of construction. Relocation of said equipment, new foundation, anchor bolts, conduit, etc needed to service the pedestal pole at the new location shall be paid for subsidiary to the "Temporary Traffic Signals" bid item.

*J. T. Short* 4/28/09  
DATE  
JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450



NO.	REVISION	BY	DATE
 <b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS			
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY AND PONTE AVENUE			
<b>GENERAL NOTES</b> SHEET 2 OF 2			
PROJECT	DESIGN	DRAWN	DATE
5029-01	CJP	CJP	APR 28, 2009
FILE	SHEET		
PW# 2009-01	TS3		

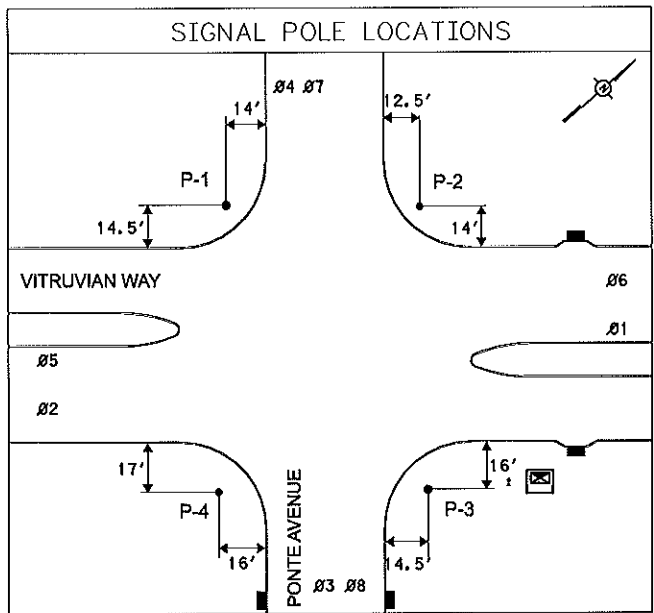
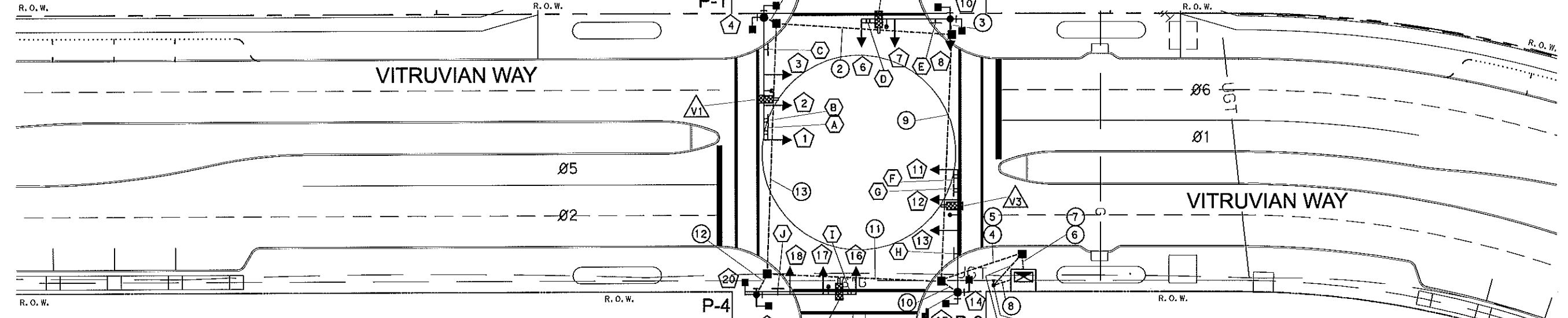
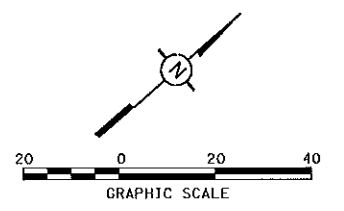
PAVING, DRAINAGE & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



ø1, ø3, ø5, and ø7 are protected/permissive left turns.

- NOTES:
1. FURNISH AND INSTALL A 10' POLE EXTENSION ON POLE P-3. THE CONTRACTOR SHALL FURNISH AND INSTALL A WIRELESS ETHERNET SUBSCRIBER UNIT ACCORDING TO TOWN OF ADDISON SPECIAL SPECIFICATION A9007 ON THE PROPOSED POLE EXTENSION. CONTRACTOR SHALL AIM THE ETHERNET SUBSCRIBER UNIT AS DIRECTED BY THE ENGINEER.
  2. CONTRACTOR SHALL FURNISH AND INSTALL THE VIDEO SERVER AND HARDENED ETHERNET SWITCH INSIDE THE TRAFFIC SIGNAL CONTROLLER CABINET.
  3. THE VIDEO SERVER SHALL BE INSTALLED BETWEEN THE VIVDS PROCESSOR AND HARDENED ETHERNET SWITCH IN ORDER TO SEND THE VIVDS IMAGES BACK TO THE TRAFFIC MANAGEMENT CENTER.

LEGEND OF SYMBOLS			
	SIGNAL POLE		CONTROLLER CABINET ASSEMBLY
	PEDESTRIAN SIGNAL HEAD		RIGHT OF WAY LINES
	SIGNAL POLE/MAST ARM ASSEMBLY		ELECTRICAL SERVICE PEDESTAL W/METER
	SIGNAL HEAD		PHASE NUMBERS
	SIGNAL HEAD IDENTIFICATION		CONDUIT RUN & NUMBERS
	SIGNAL POLE IDENTIFICATION		VIVDS DETECTION CAMERA
	TYPE C GROUND BOX		VIVDS DETECTOR IDENTIFICATION
	MAST ARM MOUNTED SIGN		UNI-DIRECTIONAL OPTICOM DETECTOR
	ILLUMINATED STREET NAME SIGN		
	SIGN IDENTIFICATION		
	WIRELESS ETHERNET SUBSCRIBER		



DISTANCES ARE FOR GUIDANCE ONLY. EXACT LOCATIONS OF SIGNAL POLES SHALL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO DRILLING.

ELECTRICAL SERVICE SHOWN ON STREET LIGHTING & CONDUIT PLAN.

NOTE 1

*Joseph T. Short*  
 JOSEPH T. SHORT, P.E.  
 LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450  
 DATE 4/28/09



NO.	REVISION	BY	DATE

**TOWN OF ADDISON**  
 DALLAS COUNTY, TEXAS

**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
 VITRUVIAN WAY AND PONTE AVENUE

**TRAFFIC SIGNAL LAYOUT**  
 VITRUVIAN WAY AT PONTE AVENUE

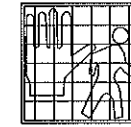
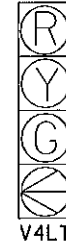
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5028-01	CJP	CJP	APR 28, 2009	PW# 2009-01	TS4

PAVING, DRAINAGE & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

CABLE TERMINATION CHART					
CNDR. NO.	CONDUCTOR COLOR	CABLE 1 20 CNDR.	CABLE 2 20 CNDR.	CABLE 3 20 CNDR.	CABLE 4 20 CNDR.
		FROM P-1 TO CNTRL.	FROM P-2 TO CNTRL.	FROM P-3 TO CNTRL.	FROM P-4 TO CNTRL.
1	BLACK	SH 1 ←Y Ø1	SH 6 ←Y Ø3	SH 11 ←Y Ø5	SH 16 ←Y Ø7
2	WHITE	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON
3	RED	SH 1, 2, 3 R Ø6	SH 6, 7, 8 R Ø8	SH 11, 12, 13 R Ø2	SH 16, 17, 18 R Ø4
4	GREEN	SH 1, 2, 3 G Ø6	SH 6, 7, 8 G Ø8	SH 11, 12, 13 G Ø2	SH 16, 17, 18 G Ø4
5	ORANGE	SH 1, 2, 3 Y Ø6	SH 6, 7, 8 Y Ø8	SH 11, 12, 13 Y Ø2	SH 16, 17, 18 Y Ø4
6	BLUE	SH 1 ←G Ø1	SH 6 ←G Ø3	SH 11 ←G Ø5	SH 16 ←G Ø7
7	WHITE/BLACK	SPARE	SPARE	SPARE	SPARE
8	RED/BLACK	SH 5 DW Ø6	SH 9 DW Ø6	SH 15 DW Ø2	SH 19 DW Ø2
9	GREEN/BLACK	SH 5 W Ø6	SH 9 W Ø6	SH 15 W Ø2	SH 19 W Ø2
10	ORANGE/BLACK	Ø6 PED CALL	Ø6 PED CALL	Ø2 PED CALL	Ø2 PED CALL
11	BLUE/BLACK	SPARE	SPARE	SPARE	SPARE
12	BLACK/WHITE	SPARE	SPARE	SPARE	SPARE
13	RED/WHITE	SH 4 DW Ø4	SH 10 DW Ø8	SH 14 DW Ø8	SH 20 DW Ø4
14	GREEN/WHITE	SH 4 W Ø4	SH 10 W Ø8	SH 14 W Ø8	SH 20 W Ø4
15	BLUE/WHITE	Ø4 PED CALL	Ø8 PED CALL	Ø8 PED CALL	Ø4 PED CALL
16	BLACK/RED	PED COMMON	PED COMMON	PED COMMON	PED COMMON
17	WHITE/RED	SPARE	SPARE	SPARE	SPARE
18	ORANGE/RED	SPARE	SPARE	SPARE	SPARE
19	BLUE/RED	SPARE	SPARE	SPARE	SPARE
20	RED/GREEN	SPARE	SPARE	SPARE	SPARE

SIGNAL HEADS										
SIGNAL HEAD NO.	SIGNAL HEAD TYPE	12" SIGNAL INDICATION			LOUVER	VEHICLE SIGNAL SECTIONS				PED SIGNAL SECTIONS
		BACKPLATE				RED BALL	YELLOW BALL	GREEN BALL	YELLOW/GREEN ARROW	
		3 SEC (EA)	4 SEC (EA)	5 SEC (EA)						
2, 3, 7, 8, 12, 13, 17, 18	V3	8				8	8	8		
1, 6, 11, 16	V4LT		4			4	4	4	4	
4, 5, 9, 10, 14, 15, 19, 20	SH 143C									8
	TOTAL	8	4			12	12	12	4	8

ALL SIGNAL INDICATIONS SHALL BE LED



SH 143C  
or  
SH 152A

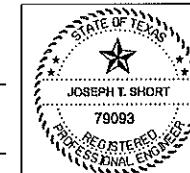
RUN NO.	CONDUIT SIZE/TYPE (FEET)					ELECTRICAL CONDUCTORS			VIVDS CABLE	OPTICOM CABLE	CAT 5E ETHERNET CABLE	5 CNDR. #14 AWG CABLE (ILSN CABLE)	SIGNAL CABLE	LENGTH OF RUN
	2" PVC Trenched	3" PVC Trenched	4" PVC Trenched	4" PVC Bored	STATUS	NO. 6 XHHW WIRE	NO. 6 BARE WIRE	NO. 8 XHHW WIRE (ILSN)					TY-A	
													20 CNDR. CABLE (#14 AWG)	
1		10.0			I		1	2	1	1		1	1	10.0
2			10.0	55.0	I		1	2	1	1		1	1	65.0
3		10.0			I		1	4	1	1		1	1	10.0
4			35.0		I		1		4	4	1			35.0
5			35.0		I		1	4				4	4	35.0
6			10.0		I		1		4	4	1			10.0
7			10.0		I		1					4	4	10.0
8	10.0				I	2	1							10.0
9			10.0	80.0	I		1	2	2	2		2	2	90.0
10		10.0			I		1	4	1	1	1	1	1	10.0
11			10.0	55.0	I		1	2	1	1		1	1	65.0
12		10.0			I		1	2	1	1		1	1	10.0
13			10.0	85.0	I		1							95.0
14	20.0				I		1	4						20.0
TOT.	30.0	40.0	130.0	275.0		20.0	475.0	780.0	530.0	530.0	55.0	530.0	530.0	

I=INSTALL

THIS CHART DOES NOT REFLECT THE QUANTITIES OF CABLE INSIDE THE POLE.

JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450

*J.T. Short*  
DATE 4/28/09



NO.	REVISION	BY	DATE

**TOWN OF ADDISON**  
DALLAS COUNTY, TEXAS

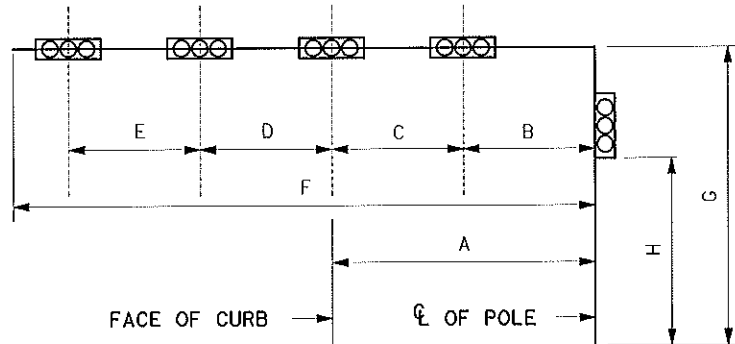
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY AND PONTE AVENUE

**SIGNAL DESIGN TABLES**  
VITRUVIAN WAY AT PONTE AVENUE

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5028-01	CJP	CJP	APR 28, 2009	PW# 2009-01	TS5



SIGNAL HEAD AND POLE PLACEMENT (FEET)										
POLE NUMBER	A	B	C	D	E	F	G	H	NO. OF HEADS	LUM-A
P-1	10	20.5	11	12.5	---	44	20	---	3	---
P-2	7.5	20	12	---	---	32	20	14	3	---
P-3	12.5	22	11	11	---	44	20	---	3	---
P-4	13	12	12	12	---	36	20	---	3	---



ELECTRICAL SERVICE DATA												
ELECTRIC SERVICE	SHEET NO.	ELECTRICAL SERVICE DESCRIPTION (SEE ED(4)&(5)-03)	SERVICE CONDUIT SIZE (RMC)	SERVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CIRCUIT BREAKER POLE/AMP	TWO-POLE CONTACTOR AMPS	PANELBD. / LOADCENTER AMP RATING	CIRCUIT NO.	BRANCH CIRCUIT BREAKER POLE/AMPS	BRANCH CIRCUIT AMPS	KVA LOAD
SIGNAL		ELECTRICAL SERVICE SHOWN ON STREET LIGHTING & CONDUIT PLAN										

POLE NUMBER	DRILL SHAFTS		WIRE INSIDE POLE (FEET)				
	TYPE 30-A	TYPE 36-A	5 CNDR CABLE (#14 AWG) (SIGNAL)	7 CNDR CABLE (#14 AWG) (SIGNAL)	VIVDS CABLE	OPTICOM CABLE	5 CNDR CABLE (#14 AWG) (ILSN)
P-1	---	13	112	64	60	46	25
P-2	11	---	74	52	52	43	25
P-3	---	13	115	64	61	49	25
P-4	---	13	96	56	56	47	25
TOTALS	11	39	397	236	229	185	100

GROUND BOX SUMMARY	
TYPE	EACH
C W/APRON	5

VIVDS DETECTOR CAMERA			
VIVDS CAMERA	STATUS	LOCATION	DETECTION ZONE
V1	I	P-1 MAST ARM	Ø1 & Ø6 PRESENCE
V2	I	P-2 MAST ARM	Ø3 & Ø8 PRESENCE
V3	I	P-3 MAST ARM	Ø2 & Ø5 PRESENCE
V4	I	P-4 MAST ARM	Ø4 & Ø7 PRESENCE

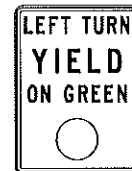
I = INSTALL NEW CAMERA

SIGN SUMMARY									
ID	TYPE	LEGEND	EXIST	REM	REL	REP	INST	HARDWARE & SUPPORT	LOCATION
(A)	R10-12	LEFT TURN YIELD ON GREEN (BALL)					1	1	P-1 ARM
(B)	R3-4	NO U-TURN					1	1	P-1 ARM
(C)	ST. NAME	PONTE AVE					1	1	P-1 ARM
(D)	R10-12	LEFT TURN YIELD ON GREEN (BALL)					1	1	P-2 ARM
(E)	ST NAME	VITRUVIAN WAY					1	1	P-2 ARM
(F)	R10-12	LEFT TURN YIELD ON GREEN (BALL)					1	1	P-3 ARM
(G)	R3-4	NO U-TURN					1	1	P-3 ARM
(H)	ST NAME	PONTE AVE					1	1	P-3 ARM
(I)	R10-12	LEFT TURN YIELD ON GREEN (BALL)					1	1	P-4 ARM
(J)	ST NAME	VITRUVIAN WAY					1	1	P-4 ARM

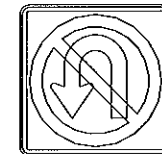
EXIST = EXISTING ; REM = REMOVE ; REL = RELOCATE ; REP = REPLACE ; INST = INSTALL  
 ALL NEW SIGNS MOUNTED ON SIGNAL POLES AND MAST ARMS SHALL BE CONSIDERED SUBSIDIARY TO TXDOT ITEM 680 "INSTALLATION OF HIGHWAY TRAFFIC SIGNALS."

ALL MAST ARM MOUNTED SIGNS SHALL HAVE HIGH INTENSITY PRISMATIC (HIP) SHEETING.

ALL STREET NAME SIGNS SHALL BE ILLUMINATED STREET NAME SIGNS MEETING TOWN OF ADDISON REQUIREMENTS. CONTRACTOR SHALL OBTAIN BLOCK NUMBERS FROM THE TOWN OF ADDISON AND RECEIVE APPROVAL OF THE DESIGN OF THE SIGNS PRIOR TO FABRICATION.

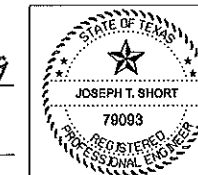


TMUTCD SIGN R10-12  
24" X 30"



TMUTCD SIGN R3-4  
24" X 24"

JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450

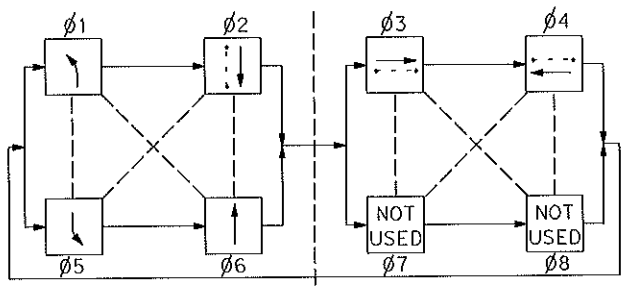


NO.	REVISION	BY	DATE

TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS  
 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY AND PONTE AVENUE  
**SIGNAL DESIGN TABLES**  
 VITRUVIAN WAY AT PONTE AVENUE

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	C/P	C/P	APR 28, 2009	PW# 2009-01	TS6

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



ø1 and ø5 are protected/permissive left turns.

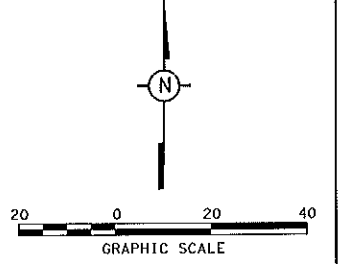
COMPATIBILITY LINE

LEGEND OF SYMBOLS			
	EXISTING SIGNAL POLE/MAST ARM ASSEMBLY		EXISTING MAST ARM MOUNTED SIGN
	EXISTING SIGN IDENTIFICATION		EXISTING SIGNAL POLE/POST MOUNTED SIGN
	EXISTING CONTROLLER CABINET ASSEMBLY		RIGHT OF WAY LINES
	EXISTING PEDESTAL POLE ASSEMBLY		EXISTING CONDUIT RUN & NUMBERS
	EXISTING SIGNAL HEAD NUMBERS		EXISTING VIVDS DETECTION CAMERA
	EXISTING SIGNAL POLE NUMBERS		EXISTING VIVDS DETECTOR IDENTIFICATION
	EXISTING GROUND BOX		EXISTING OPTICOM DETECTOR
	PHASE NUMBERS		EXISTING ELECTRICAL SERVICE
	NEW MAST ARM MOUNTED SIGN		EXISTING SPREAD SPECTRUM RADIO ANTENNA
	NEW SIGN IDENTIFICATION		EXISTING PRESENCE LOOP DETECTORS
	VIVDS PRESENCE DETECTION ZONES		EXISTING SET-BACK LOOP DETECTORS
	LANE USE ARROWS		

BROOKHAVEN CLUB DRIVE

VITRUVIAN WAY

MARSH LANE



NOTES:

- FOR PAVEMENT MARKING DETAILS, SEE TRAFFIC CONTROL PLANS.
- EXISTING LANE USE SIGN C ON MAST ARM P-3 AND POST MOUNTED LANE USE SIGNS M & N FOR THE EASTBOUND APPROACH SHALL BE REMOVED/COVERED AND REPLACED WITH TEMPORARY LANE USE SIGNS.
- EXISTING LANE USE SIGN J MOUNTED ON MAST ARM P-5 SHALL FOR THE WESTBOUND APPROACH SHALL BE REMOVED AND REPLACED AT THE END OF CONSTRUCTION WITH AN UPDATED LANE USE SIGN.
- ALL OTHER EXISTING SIGNAL EQUIPMENT SHALL REMAIN IN PLACE AND OPERATIONAL DURING PHASE 2 OF CONSTRUCTION.
- PEDESTRIAN SIGNAL HEADS 5 AND 10 SHALL BE COVERED DURING PHASE 2 OF CONSTRUCTION. THESE SIGNAL HEADS SHALL REMAIN COVERED THROUGHOUT CONSTRUCTION. NO PEDESTRIAN CROSSING SIGNS (TMUTCD SIGN R9-30) SHALL BE INSTALLED ON POLES P-2 AND P-3 AND REMAIN THROUGHOUT CONSTRUCTION.
- DETECTION ZONES FOR CAMERAS V1 AND V2 SHALL BE ADJUSTED AS SHOWN.
- LANE USE ARROWS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY.
- TRAFFIC SIGNAL CONTROLLER AND/OR WIRING SHALL BE ADJUSTED TO OPERATE AS A SPLIT PHASE ON BROOKHAVEN CLUB DRIVE DURING PHASE 2 OF CONSTRUCTION.

JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450

*Joseph T. Short* 4/28/09  
DATE



NO.	REVISION	BY	DATE

**TOWN OF ADDISON**  
DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY AND PONTE AVENUE

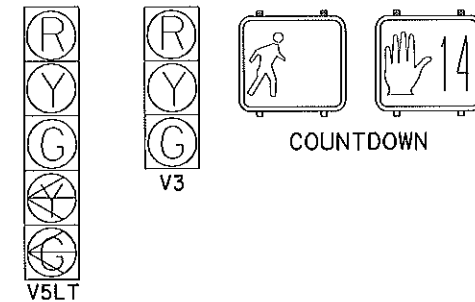
TEMPORARY TRAFFIC SIGNAL LAYOUT  
MARSH LN AT BROOKHAVEN CLUB DR - PHASE 2

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	CJP	CJP	APR 28, 2009	PW# 2009-01	TS7

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

SIGNAL HEADS											
SIGNAL HEAD NO.	SIGNAL HEAD TYPE	12" SIGNAL INDICATION				VEHICLE SIGNAL SECTIONS					PED SIGNAL SECTIONS
		BACKPLATE			LOUVER	RED BALL	YELLOW BALL	GREEN BALL	YELLOW ARROW	GREEN ARROW	
		3 SEC (EA)	4 SEC (EA)	5 SEC (EA)							
2, 3, 8, 9, 13, 14, 19, 20	V3	8				8	8	8			
1, 6, 7, 12, 17, 18	V5LT			6		6	6	6	6	6	
4, 5, 10, 11, 15, 16, 21, 22	COUNTDOWN										8
	TOTAL	8		6		14	14	14	6	6	8

ALL SIGNAL HEADS ARE EXISTING AND SHALL REMAIN IN PLACE.  
SIGNAL HEADS 5 AND 10 SHALL BE COVERED DURING PHASE 2 OF CONSTRUCTION.



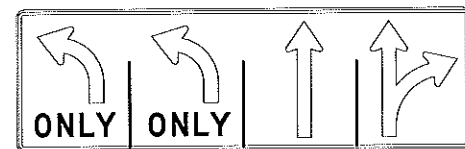
SIGN SUMMARY											
ID	TYPE	LEGEND	EXIST	REM/COVER	REL	REP	INST	HARDWARE ONLY	HARDWARE & SUPPORT	LOCATION	
A	R10-12	LEFT TURN YIELD ON GREEN (BALL)	1							P-1 ARM	
B	ST. NAME	BROOKHAVEN CLUB DRIVE	1							P-1 ARM	
C	R3-8 SPL #1	LANE CONFIGURATION SIGN		1						P-3 ARM	
D	R3-8b	LANE CONFIGURATION SIGN				1		1		P-3 ARM	
E	R10-12	LEFT TURN YIELD ON GREEN (BALL)		1						P-3 ARM	
F	ST NAME	MARSH LANE	1							P-3 ARM	
G	R10-12	LEFT TURN YIELD ON GREEN (BALL)	1							P-4 ARM	
H	ST NAME	BROOKHAVEN CLUB DRIVE	1							P-4 ARM	
I	R3-5R	RIGHT TURN ONLY	1							P-4 POLE	
J	R3-8 SPL #2	LANE CONFIGURATION SIGN		1						P-5 ARM	
K	R10-12	LEFT TURN YIELD ON GREEN (BALL)		1						P-5 ARM	
L	ST NAME	MARSH LANE	1							P-5 ARM	
M	R3-8 SPL #1	LANE CONFIGURATION SIGN		1						POST	
N	R3-8 SPL #1	LANE CONFIGURATION SIGN		1						POST	
O	R3-8b	LANE CONFIGURATION SIGN				1		1		POST	
P	R3-8b	LANE CONFIGURATION SIGN				1		1		POST	
Q	R9-3a	NO PEDESTRIAN CROSSING				1			1	P-2 POLE	
R	R9-3a	NO PEDESTRIAN CROSSING				1			1	P-3 POLE	

EXIST = EXISTING ; REM = REMOVE ; REL = RELOCATE ; REP = REPLACE ; INST = INSTALL  
SIGNS C, E, J, K, M & N SHALL BE REMOVED/COVERED DURING CONSTRUCTION. IF REMOVED, THESE SIGNS SHALL BE DELIVERED TO THE CITY OF FARMERS BRANCH FOR STORAGE. THESE SIGNS SHALL BE REINSTALLED/UNCOVERED BY THE CONTRACTOR AFTER CONSTRUCTION HAS BEEN COMPLETED.

SIGNS O, P, Q AND R AND SUPPORTS SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED ON THE EXISTING POLES/POSTS. CONTRACTOR SHALL BE PAID SUBSIDIARY TO "TEMPORARY TRAFFIC SIGNALS."



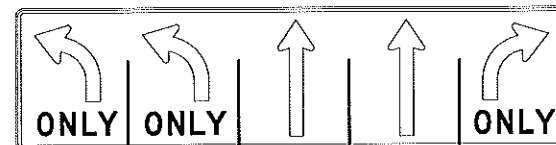
TMUTCD SIGN R10-12



TMUTCD SIGN R3-8 SPL #2



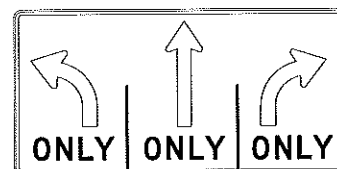
TMUTCD SIGN R3-5R



TMUTCD SIGN R3-8 SPL #1

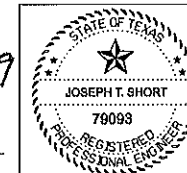


TMUTCD SIGN R9-3a  
24" X 24"

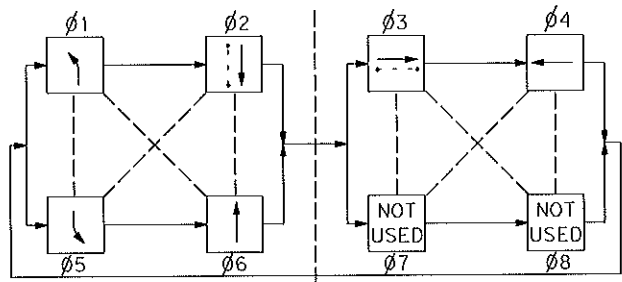


TMUTCD SIGN R3-8b  
48" X 30"

*Joseph T. Short* 4/28/09  
DATE  
JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450



NO.	REVISION	BY	DATE
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> <b>VITRUVIAN WAY AND PONTE AVENUE</b>			
<b>TEMPORARY TRAFFIC SIGNAL TABLES</b> <b>MARSH LN AT BROOKHAVEN CLUB DR - PHASE 2</b>			
PROJECT	DESIGN	DRAWN	DATE
5028-01	CJP	CJP	APR 28, 2009
FILE	SHEET		
PW# 2009-01	TS8		



Ø1 and Ø5 are protected/permissive left turns.  
CROSS STREET SHALL OPERATE AS A SPLIT PHASE.

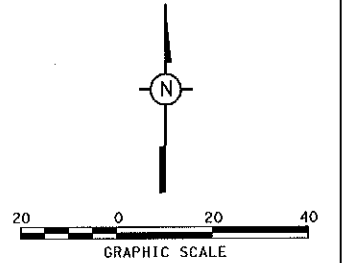
COMPATIBILITY LINE

LEGEND OF SYMBOLS			
	EXISTING SIGNAL POLE/ MAST ARM ASSEMBLY		EXISTING MAST ARM MOUNTED SIGN
	EXISTING SIGN IDENTIFICATION		EXISTING SIGNAL POLE/POST MOUNTED SIGN
	EXISTING CONTROLLER CABINET ASSEMBLY		R. O. W. RIGHT OF WAY LINES
	EXISTING PEDESTAL POLE ASSEMBLY		EXISTING CONDUIT RUN & NUMBERS
	EXISTING SIGNAL HEAD NUMBERS		EXISTING VIVDS DETECTION CAMERA
	EXISTING SIGNAL POLE NUMBERS		EXISTING VIVDS DETECTOR IDENTIFICATION
	EXISTING GROUND BOX		EXISTING OPTICOM DETECTOR
	Ø2 Ø5 PHASE NUMBERS		EXISTING ELECTRICAL SERVICE
	NEW MAST ARM MOUNTED SIGN		EXISTING SPREAD SPECTRUM RADIO ANTENNA
	NEW SIGN IDENTIFICATION		ADJUSTED VIVDS DETECTION CAMERA
	NEW SIGNAL HEAD IDENTIFICATION		ADJUSTED VIVDS DETECTOR IDENTIFICATION
	NEW SIGNAL HEAD		EXISTING PRESENCE LOOP DETECTOR
	VIVDS PRESENCE DETECTION ZONE		EXISTING SET-BACK LOOP DETECTOR
	LANE USE ARROW		

BROOKHAVEN CLUB DRIVE

VITRUVIAN WAY

MARSH LANE

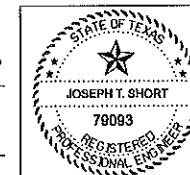


NOTES:

- FOR PAVEMENT MARKING DETAILS, SEE TRAFFIC CONTROL PLANS.
- PEDESTRIAN SIGNAL HEADS 4 AND 22 SHALL BE COVERED DURING PHASE 3 OF CONSTRUCTION. SIGNAL HEADS SHALL REMAIN COVERED THROUGHOUT CONSTRUCTION. THESE SIGNAL HEADS SHALL REMAIN COVERED THROUGHOUT CONSTRUCTION. NO PEDESTRIAN CROSSING SIGNS (TMUTCD SIGN R9-3a) SHALL BE INSTALLED ON POLES P-2 AND P-5 AND REMAIN THROUGHOUT CONSTRUCTION.
- VIVDS CAMERA V2 SHALL BE ADJUSTED ON POLE P-5 DURING PHASE 3 OF CONSTRUCTION TO ALLOW DETECTION OF WESTBOUND TRAFFIC.
- INSTALL SIGNAL HEAD 23 ON SIGNAL POLE P-4 FOR USE DURING PHASE 3 OF CONSTRUCTION.
- TRAFFIC SIGNAL CONTROLLER AND/OR WIRING SHALL CONTINUE TO OPERATE AS A SPLIT PHASE ON BROOKHAVEN CLUB DRIVE DURING PHASE 3 OF CONSTRUCTION.
- LANE USE ARROWS ARE FOR INFORMATIONAL PURPOSES ONLY.

JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450

*J. T. Short* 4/28/09  
DATE



TOWN OF ADDISON DALLAS COUNTY, TEXAS PAVING, DRAINAGE & UTILITY IMPROVEMENTS VITRUVIAN WAY AND PONTE AVENUE TEMPORARY TRAFFIC SIGNAL LAYOUT MARSH LN AT BROOKHAVEN CLUB DR - PHASE 3					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5028-01	C/P	C/P	APR 28, 2009	PW# 2009-01	TS9

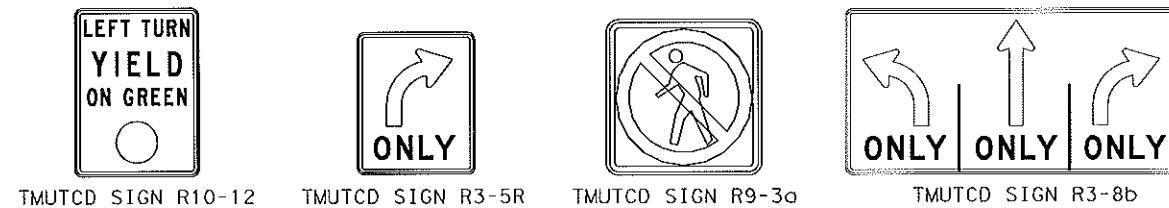
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

CABLE TERMINATION CHART		
CNDR. NO.	CONDUCTOR COLOR	CABLE 1 20 CNDR.
		FROM P-4 TO CNTRL.
1	BLACK	PED COMMON
2	WHITE	SIG COMMON
3	RED	SH 12, 13, 14 ∅2 R
4	GREEN	SH 12, 13, 14 ∅2 G
5	ORANGE	SH 12, 13, 14 ∅2 Y
6	BLUE	SH 12 ∅5 ←G
7	WHITE/BLACK	SH 12 ∅5 ←Y
8	RED/BLACK	SH 16 ∅2 DW
9	GREEN/BLACK	SH 16 ∅2 W
10	ORANGE/BLACK	SPARE
11	BLUE/BLACK	SPARE
12	BLACK/WHITE	SPARE
13	RED/WHITE	SH 15 ∅3 DW
14	GREEN/WHITE	SH 15 ∅3 W
15	BLUE/WHITE	SPARE
16	BLACK/RED	SPARE
17	WHITE/RED	SH 23 ∅4 R
18	ORANGE/RED	SH 23 ∅4 G
19	BLUE/RED	SH 23 ∅4 Y
20	RED/GREEN	SH 23 ∅4 ←G

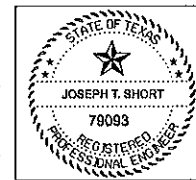
CONTRACTOR SHALL CONNECT SIGNAL HEAD 23 INDICATIONS TO EXISTING CONDUCTORS SHOWN IN THE TABLE ABOVE. SIGNAL HEAD 23 SHALL BE WIRED TO PHASE 4 AT THE SIGNAL CONTROLLER.

SIGN SUMMARY										
ID	TYPE	LEGEND	EXIST	REM/COVER	REL	REP	INST	HARDWARE ONLY	HARDWARE & SUPPORT	LOCATION
(A)	R10-12	LEFT TURN YIELD ON GREEN (BALL)	1							P-1 ARM
(B)	ST. NAME	BROOKHAVEN CLUB DRIVE	1							P-1 ARM
** (C)	R3-8 SPL #1	LANE CONFIGURATION SIGN		1						P-3 ARM
(D)	R3-8b	LANE CONFIGURATION SIGN	1							P-3 ARM
** (E)	R10-12	LEFT TURN YIELD ON GREEN (BALL)	1							P-3 ARM
(F)	ST NAME	MARSH LANE	1							P-3 ARM
(G)	R10-12	LEFT TURN YIELD ON GREEN (BALL)		1						P-4 ARM
(H)	ST NAME	BROOKHAVEN CLUB DRIVE	1							P-4 ARM
(I)	R3-5R	RIGHT TURN ONLY	1							P-4 POLE
** (J)	R3-8 SPL #2	LANE CONFIGURATION SIGN		1						P-5 ARM
** (K)	R10-12	LEFT TURN YIELD ON GREEN (BALL)		1						P-5 ARM
(L)	ST NAME	MARSH LANE	1							P-5 ARM
** (M)	R3-8 SPL #1	LANE CONFIGURATION SIGN		1						POST
** (N)	R3-8 SPL #1	LANE CONFIGURATION SIGN		1						POST
(O)	R3-8b	LANE CONFIGURATION SIGN	1							POST
(P)	R3-8b	LANE CONFIGURATION SIGN	1							POST
(Q)	R9-3a	NO PEDESTRIAN CROSSING	1							P-2 POLE
(R)	R9-3a	NO PEDESTRIAN CROSSING	1							P-3 POLE
(S)	R9-3a	NO PEDESTRIAN CROSSING					1		1	P-2 POLE
(T)	R9-3a	NO PEDESTRIAN CROSSING					1		1	P-5 POLE

EXIST = EXISTING ; REM = REMOVE ; REL = RELOCATE ; REP = REPLACE ; INST = INSTALL  
 \*\* SIGNS REMOVED/COVERED DURING PHASE 2 OF CONSTRUCTION. THESE SIGNS SHALL BE REINSTALLED/UNCOVERED BY THE CONTRACTOR AFTER CONSTRUCTION HAS BEEN COMPLETED.



*J. T. Short* 4/28/09  
 DATE  
 JOSEPH T. SHORT, P.E.  
 LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450

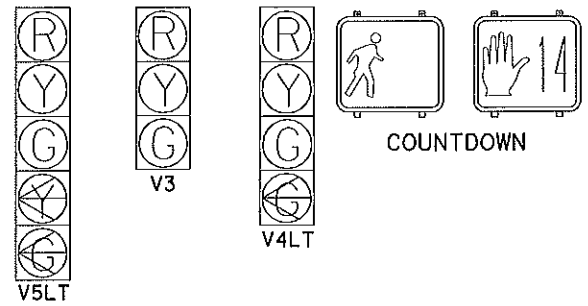


NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
PAVING, DRAINAGE & UTILITY IMPROVEMENTS VITRUVIAN WAY AND PONTE AVENUE			
TEMPORARY TRAFFIC SIGNAL TABLES MARSH LN AT BROOKHAVEN CLUB DR - PHASE 3			
PROJECT	DESIGN	DRAWN	DATE
5029-01	CJP	CJP	APR 28, 2009
FILE	SHEET		
PW# 2009-01	TS10		

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

SIGNAL HEADS											
SIGNAL HEAD NO.	SIGNAL HEAD TYPE	12" SIGNAL INDICATION				VEHICLE SIGNAL SECTIONS					PED SIGNAL SECTIONS
		BACKPLATE			LOUVER	RED BALL	YELLOW BALL	GREEN BALL	YELLOW ARROW	GREEN ARROW	
		3 SEC (EA)	4 SEC (EA)	5 SEC (EA)							
23	V4LT		1			1	1	1		1	
2, 3, 8, 9, 13, 14, 19, 20	*V3										
1, 6, 7, 12, 17, 18	*V5LT										
4, 5, 10, 11, 15, 16, 21, 22	*COUNTDOWN										
	TOTAL		1			1	1	1		1	

\*SIGNAL HEADS ARE EXISTING AND SHALL REMAIN IN PLACE  
 SIGNAL HEADS 4, 5, 10, AND 22 SHALL BE COVERED DURING PHASE 3 OF CONSTRUCTION.

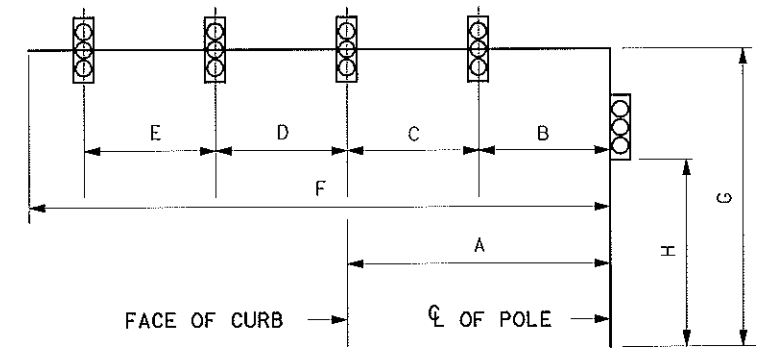


SIGNAL HEAD AND POLE PLACEMENT (FEET)											
POLE NUMBER	A	B	C	D	E	F	G	H	NO. OF HEADS	LUM-A	
P-1	7	13	11	12	---	36	20	---	3	---	
P-2	12.5	PEDESTAL POLE ASSEMBLY					10	---	---	---	---
P-3	10.5	12	11	11	14	48	20	---	4	---	
P-4	7	10	11	11	---	32	20	14	3+1	---	
P-5	9	19	10	9	10	48	20	---	4	---	

ALL SIGNAL POLES ARE EXISTING AND SHALL REMAIN IN PLACE.

WIRE INSIDE POLE (FEET)						
POLE NUMBER	5 CNDR CABLE (#14 AWG)	7 CNDR CABLE (#14 AWG)	VIVDS CABLE	LUMINAIRE CABLE 1C#8 XHHW	OPTICOM CABLE	SSR CABLE
P-4	14	---	---	---	---	---
TOTALS	14	---	---	---	---	---

ONLY NEW CABLE SHOWN IN THE TABLE ABOVE.



*J. T. Short* 4/28/09  
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NO.	REVISION	BY	DATE

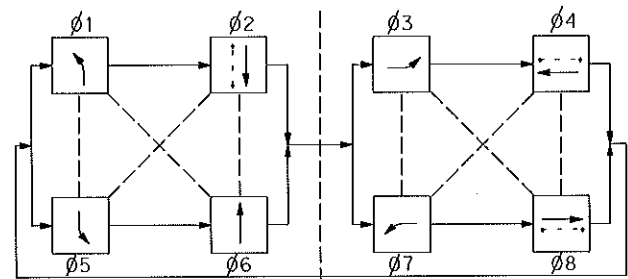
**TOWN OF ADDISON**  
 DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY AND PONTE AVENUE

TEMPORARY TRAFFIC SIGNAL TABLES  
 MARSH LN AT BROOKHAVEN CLUB DR - PHASE 3

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5028-01	CJP	CJP	APR 28, 2009	PW# 2009-01	TS11

PAVING, DRAINAGE & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



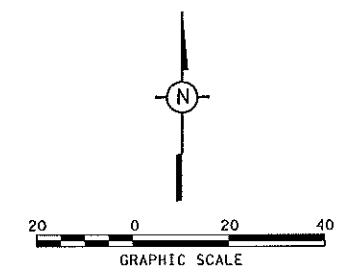
ø1, ø3, ø5 and ø7 are protected/permissive left turns.

LEGEND OF SYMBOLS			
	EXISTING SIGNAL POLE/ MAST ARM ASSEMBLY		EXISTING MAST ARM MOUNTED SIGN
			EXISTING SIGN IDENTIFICATION
			EXISTING SIGNAL POLE/POST MOUNTED SIGN
	EXISTING CONTROLLER CABINET ASSEMBLY		RIGHT OF WAY LINES
	RELOCATED PEDESTAL POLE ASSEMBLY		EXISTING CONDUIT RUN & NUMBERS
	EXISTING SIGNAL HEAD NUMBERS		EXISTING VIVDS DETECTION CAMERA
	EXISTING SIGNAL POLE NUMBERS		EXISTING VIVDS DETECTOR IDENTIFICATION
	EXISTING GROUND BOX		EXISTING OPTICOM DETECTOR
	ø2 PHASE NUMBERS		EXISTING ELECTRICAL SERVICE
	NEW MAST ARM MOUNTED SIGN		EXISTING SPREAD SPECTRUM RADIO ANTENNA
	NEW SIGN IDENTIFICATION		LANE USE ARROWS
	P-2 RELOCATED SIGNAL POLE NUMBERS		RELOCATED SIGNAL HEAD NUMBERS

BROOKHAVEN CLUB DRIVE

VITRUVIAN WAY

MARSH LANE

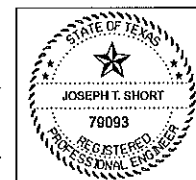


NOTES:

- FOR PAVEMENT MARKING DETAILS, SEE ROADWAY PLAN PAVEMENT MARKING SHEETS.
- LANE USE SIGN D ON MAST ARM P-3 AND POST MOUNTED SIGNS O AND P SHALL BE REMOVED BY THE CONTRACTOR. SIGNS C, M, AND N SHALL BE REINSTALLED/UNCOVERED IN THEIR PLACE. A NEW LANE CONFIGURATION SIGN J SHALL BE INSTALLED ON MAST ARM P-5.
- SIGNAL PHASING SHALL BE RETURNED TO PROTECTED/PERMISSIVE OPERATION.
- SIGNAL HEAD 23 (V4LT) WHICH WAS INSTALLED DURING PHASE 3 OF CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR.
- SIGNS E AND K SHALL BE REINSTALLED/UNCOVERED BY THE CONTRACTOR.
- CONTRACTOR SHALL RELOCATE EXISTING PEDESTAL POLE P-2 FROM EXISTING LOCATION TO NEW LOCATION SHOWN ON THE PLANS. PAYMENT SHALL BE SUBSIDIARY TO "INSTALLATION OF HIGHWAY TRAFFIC SIGNALS."
- EXISTING SIGNAL CABLE SERVICING PEDESTAL POLE P-2 SHALL BE REMOVED FROM EXISTING CONDUIT #2 AND REROUTED THROUGH NEW CONDUIT #2 (10' SCHD 40 PVC) TO THE NEW LOCATION OF THE PEDESTAL POLE. THE EXISTING FOUNDATION SHALL BE JACKHAMMERED TO A DEPTH OF 2 FEET BELOW GRADE AND BACKFILLED.

JOSEPH T. SHORT, P.E.  
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*Joseph T. Short*  
DATE 4/28/09



NO.	REVISION	BY	DATE
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY AND PONTE AVENUE			
<b>TRAFFIC SIGNAL LAYOUT</b> MARSH LANE AT BROOKHAVEN CLUB DRIVE			
PROJECT	DESIGN	DRAWN	DATE
5020-01	C/P	C/P	APR 28, 2009
FILE	SHEET		
PW# 2009-01	TS12		

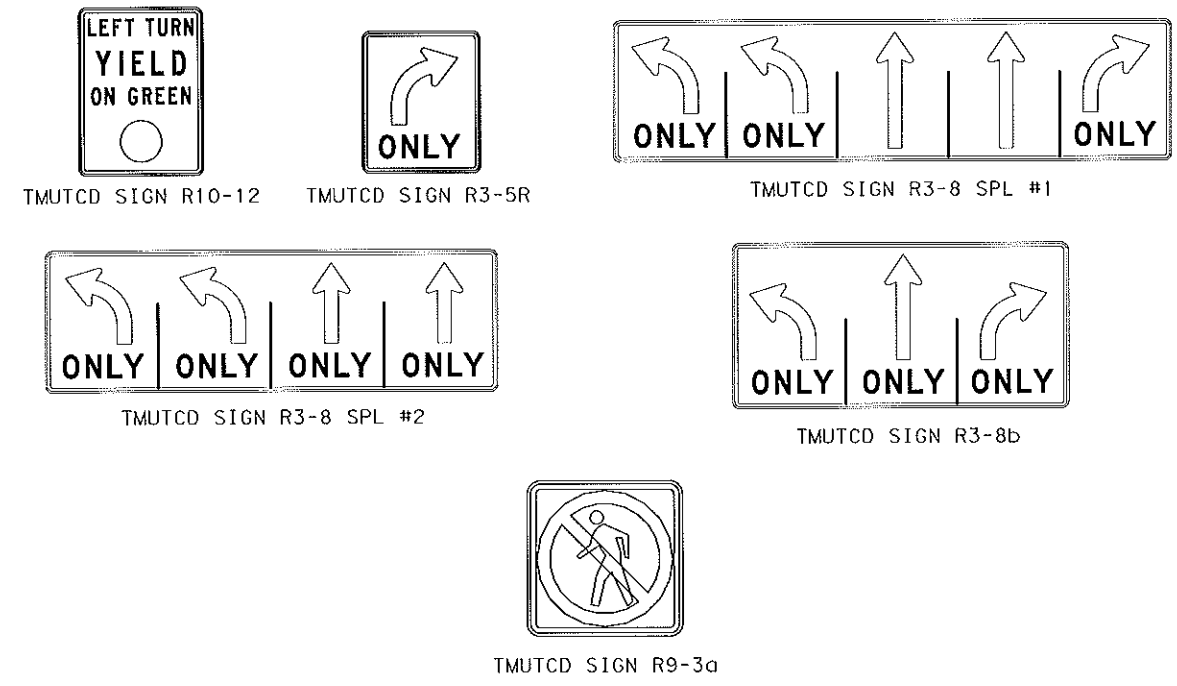
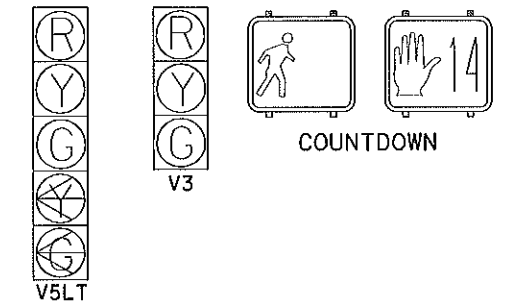
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

SIGNAL HEADS												
SIGNAL HEAD NO.	SIGNAL HEAD TYPE	12" SIGNAL INDICATION				LOUVER	VEHICLE SIGNAL SECTIONS					PED SIGNAL SECTIONS
		BACKPLATE			RED BALL		YELLOW BALL	GREEN BALL	YELLOW ARROW	GREEN ARROW		
		3 SEC (EA)	4 SEC (EA)	5 SEC (EA)								
2, 3, 8, 9, 13, 14, 19, 20	V3	8				8	8	8				
1, 6, 7, 12, 17, 18	V5LT			6		6	6	6	6	6		
4, 5, 10, 11, 15, 16, 21, 22	COUNTDOWN										8	
	TOTAL	8		6		14	14	14	6	6	8	

SIGNAL HEADS 4 AND 5 SHALL BE RELOCATED ALONG WITH PEDESTAL POLE P-2 TO THEIR NEW LOCATIONS SHOWN ON THE PLANS. ALL OTHER SIGNAL HEADS ARE EXISTING AND SHALL REMAIN IN PLACE.

SIGN SUMMARY										
ID	TYPE	LEGEND	EXIST	REM	REL	REP	INST/ UNCOVER	HARDWARE & SUPPORT	LOCATION	
A	R10-12	LEFT TURN YIELD ON GREEN (BALL)	1						P-1 ARM	
B	ST. NAME	BROOKHAVEN CLUB DRIVE	1						P-1 ARM	
C	R3-8 SPL #1	LANE CONFIGURATION SIGN					1	1	P-3 ARM	
D	R3-8b	LANE CONFIGURATION SIGN		1					P-3 ARM	
E	R10-12	LEFT TURN YIELD ON GREEN (BALL)					1	1	P-3 ARM	
F	ST NAME	MARSH LANE	1						P-3 ARM	
G	R10-12	LEFT TURN YIELD ON GREEN (BALL)	1						P-4 ARM	
H	ST NAME	BROOKHAVEN CLUB DRIVE	1						P-4 ARM	
I	R3-5R	RIGHT TURN ONLY	1						P-4 POLE	
J	R3-8 SPL #2	LANE CONFIGURATION SIGN					1	1	P-5 ARM	
K	R10-12	LEFT TURN YIELD ON GREEN (BALL)					1	1	P-5 ARM	
L	ST NAME	MARSH LANE	1						P-5 ARM	
M	R3-8 SPL #1	LANE CONFIGURATION SIGN					1	1	POST	
N	R3-8 SPL #1	LANE CONFIGURATION SIGN					1	1	POST	
O	R3-8b	LANE CONFIGURATION SIGN		1					POST	
P	R3-8b	LANE CONFIGURATION SIGN		1					POST	
Q	R9-3a	NO PEDESTRIAN CROSSING		1					P-2 POLE	
R	R9-3a	NO PEDESTRIAN CROSSING		1					P-3 POLE	
S	R9-3a	NO PEDESTRIAN CROSSING		1					P-2 POLE	
T	R9-3a	NO PEDESTRIAN CROSSING		1					P-5 POLE	

EXIST = EXISTING ; REM = REMOVE ; REL = RELOCATE ; REP = REPLACE ; INST = INSTALL  
ALL SIGNS REMOVED/COVERED DURING PHASE 2 OF CONSTRUCTION SHALL BE REINSTALLED/UNCOVERED.



*Joseph T. Short* 4/28/09  
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JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450



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TOWN OF ADDISON DALLAS COUNTY, TEXAS			
PAVING, DRAINAGE & UTILITY IMPROVEMENTS VITRUVIAN WAY AND PONTE AVENUE			
TRAFFIC SIGNAL TABLES MARSH LANE AT BROOKHAVEN CLUB DRIVE			
PROJECT	DESIGN	DRAWN	DATE
5029-01	CJP	CJP	APR 28, 2009
FILE	SHEET		
PW# 2009-01	TS13		

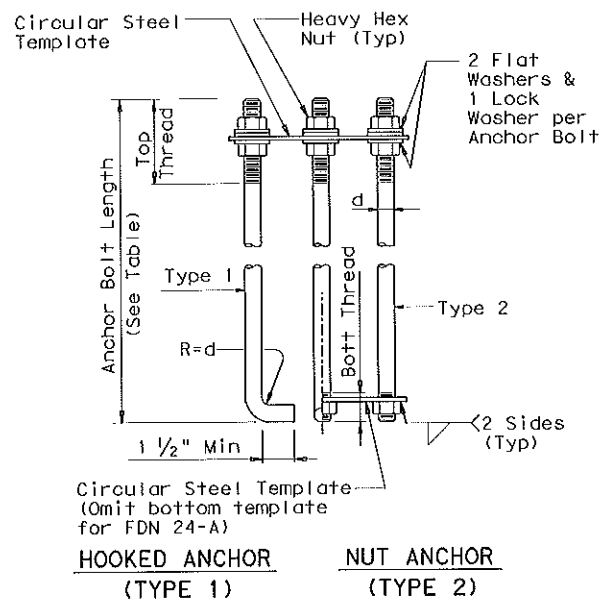
PAVING, DRAINAGE & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		DRILLED SHAFT LENGTH-ft (4), (5), (6)			ANCHOR BOLT DESIGN (1)				FOUNDATION DESIGN LOAD (2)		TYPICAL APPLICATION
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft			ANCHOR BOLT DIA	F <sub>y</sub> (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips	
				10	15	40							
24-A	24"	4-# 5	#2 at 12"	5.7	5.3	4.5	3/4"	36	12 3/4"	1	10	1	Pedestal pole, pedestal mounted controller.
30-A	30"	8-# 9	#3 at 6"	11.3	10.3	8.0	1 1/2"	55	17"	2	87	3	Mast arm assembly. (see Selection Table)
36-A	36"	10-# 9	#3 at 6"	13.2	12.0	9.4	1 3/4"	55	19"	2	131	5	Mast arm assembly. (see Selection Table) 30' strain pole with or without luminaire.
36-B	36"	12-# 9	#3 at 6"	15.2	13.6	10.4	2"	55	21"	2	190	7	Mast arm assembly. (see Selection Table) Strain pole taller than 30' & strain pole with mast arm
42-A	42"	14-# 9	#3 at 6"	17.4	15.6	11.9	2 1/4"	55	23"	2	271	9	Mast arm assembly. (see Selection Table)

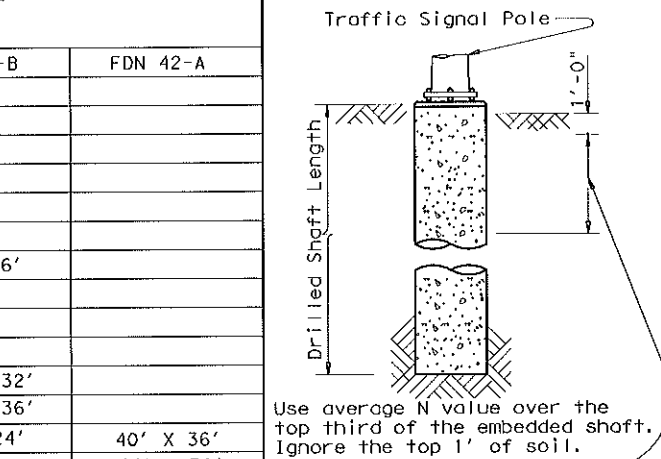
FOUNDATION SELECTION TABLE FOR STANDARD MAST ARM PLUS ILSN SUPPORT ASSEMBLIES (ft)					
WIND SPEED	MAX SINGLE ARM LENGTH	FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
		80 MPH DESIGN WIND SPEED		32' $\Delta$	48'
80 MPH DESIGN WIND SPEED	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	24' X 24'			
		28' X 28'			
		32' X 28'			
			32' X 32'		
100 MPH DESIGN WIND SPEED	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS		36' X 36'		
			40' X 36'		
			44' X 28'	44' X 36'	
			36'	44'	
100 MPH DESIGN WIND SPEED	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	24' X 24'			
		28' X 28'			
		32' X 24'			
			32' X 32'		
		36' X 36'			
		40' X 24'			40' X 36'
				40' X 24'	44' X 36'

- EXAMPLE:
- For 80mph design wind speed, foundation 30-A can support up to a 32' arm with another arm up to 28'
  - For 100mph design wind speed, foundation 36-A can support a single 36' mast arm.

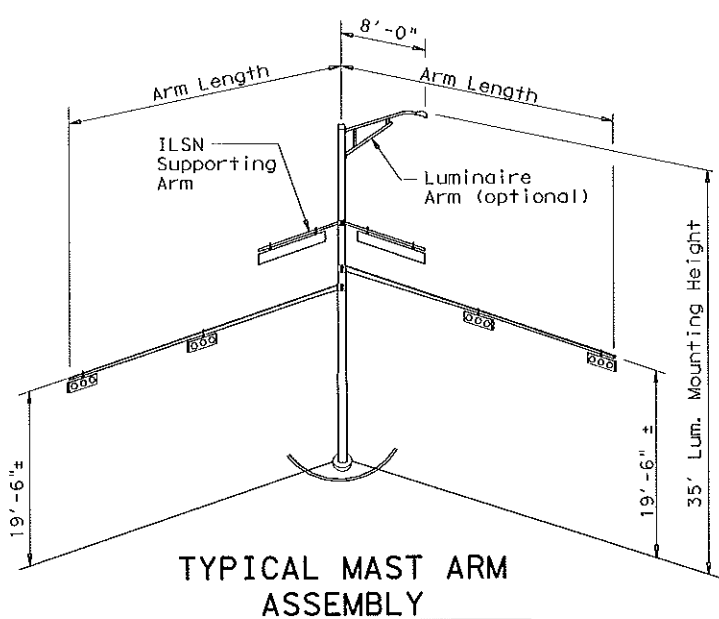


**HOOKED ANCHOR (TYPE 1) NUT ANCHOR (TYPE 2)**

**INSTALLATION PROCEDURE:**  
Threads of anchor bolts shall be coated with pipe joint compound prior to installation of upper nuts when erecting pole. After pole is plumbed and in permanent alignment, the exposed threads of pointed bolts shall be cleaned and an additional coating of zinc-rich paint applied to seal the bolt thread-nut joint.



**TYPICAL STRAIN POLE ASSEMBLY**



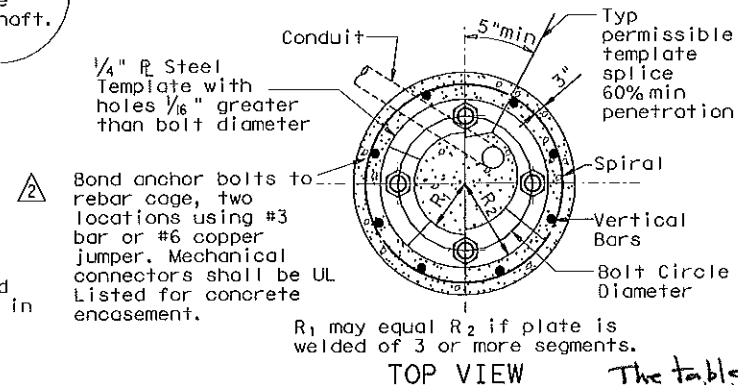
**TYPICAL MAST ARM ASSEMBLY**

**NOTES:**

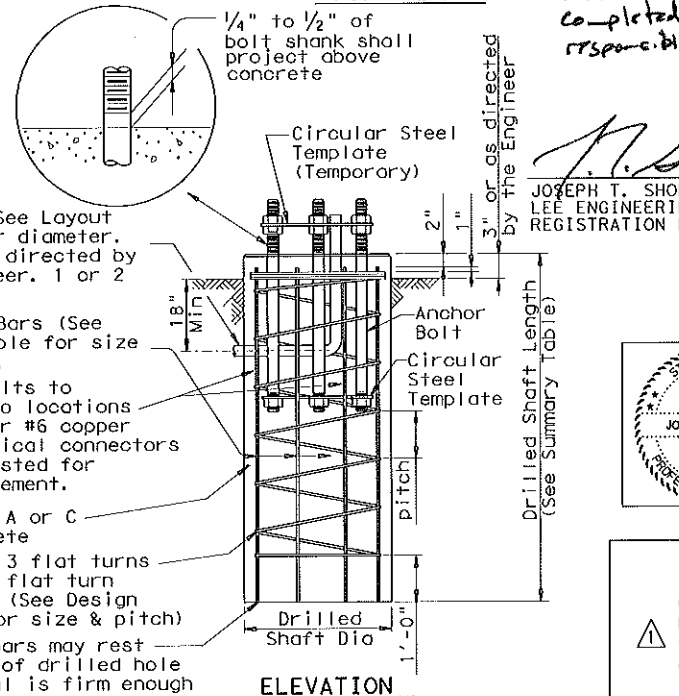
- Anchor bolt design develops the foundation capacity given under Foundation Design Loads.
- Foundation Design Loads are the allowable moments and shears at the base of the structure.
- Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.
- Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.
- If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.
- Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

ANCHOR BOLT & TEMPLATE SIZES						
BOLT DIA IN.	BOLT LENGTH	TOP THREAD	BOTT THREAD	BOLT CIRCLE	R <sub>2</sub>	R <sub>1</sub>
3/4"	1'-6"	3"	—	12 3/4"	7 1/8"	5 5/8"
1 1/2"	3'-4"	6"	2"	17"	10"	7"
1 3/4"	3'-10"	7"	2 1/4"	19"	11 1/4"	7 3/4"
2"	4'-3"	8"	2 1/2"	21"	12 1/2"	8 1/2"
2 1/4"	4'-9"	9"	3"	23"	13 3/4"	9 1/4"

(7) Min dimensions given, longer bolts are acceptable.



**TOP VIEW**



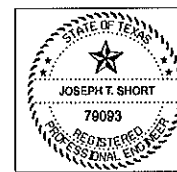
**FOUNDATION DETAILS**

FOUNDATION SUMMARY TABLE (3)									
LOCATION IDENTIFICATION	AVG. N BLOW /ft.	FDN TYPE	NO. EA	DRILLED SHAFT LENGTH (6) (FEET)					
				24-A	30-A	36-A	36-B	42-A	
VITRUVIAN WAY AT PONTE AVENUE									
P-1	10	36-A	1			13			
P-2	10	30-A	1		11				
P-3	10	36-A	1			13			
P-3	10	36-A	1			13			
VITRUVIAN WAY AT MARSH LANE									
P-2	10	24-A	1	6					
TOTAL DRILLED SHAFT LENGTHS				6	11	39			

**GENERAL NOTES.**

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and interim revisions thereto. Reinforcing steel shall conform to Item 440. Concrete shall be Class A or C. Threads for anchor bolts and nuts shall be rolled or cut threads of unified national coarse thread series except for A193B7 bolts which shall have 8 pitch thread series. Bolts and nuts shall have Class 2A and 2B fit tolerances. Galvanized nuts shall be tapped after galvanizing. Anchor bolts that are 1" in diameter or less shall conform to ASTM A36. Anchor bolts larger than 1" in diameter shall conform to A36M55 in accordance with the Item, "Anchor Bolts" or ASTM A193B7 or A687. Galvanize or coat with zinc-rich paint a minimum of the upper 14 inches of all anchor bolts unless otherwise noted. Exposed nuts shall be galvanized or coated with zinc-rich paint. Washers shall be galvanized. Templates and embedded nuts need not be galvanized.

*The table above was completed under my responsible supervision*  
4/28/09  
DATE  
JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C.,  
REGISTRATION NO. F-450



11/99 Revision

- Facilitate new terminal strip enclosure
- Changed from ground rod to UFER ground

STANDARD PLANS  
Texas Department of Transportation  
Traffic Operations Division

**TRAFFIC SIGNAL POLE FOUNDATION**

TS-FD-99

REVISED	DATE	BY	REASON	FEDERAL AID PROJECT	STATE	SHEET
5-96	DAL	6				TS14
11-99						
COUNTY	CONTROL	SECTION	JOB	HIGHWAY		
DALLAS						VITRUVIAN

Arm Length	ROUND POLES					POLYGONAL POLES					Foundation Type
	D <sub>B</sub>	D <sub>19</sub>	D <sub>24</sub>	D <sub>30</sub>	① thk	D <sub>B</sub>	D <sub>19</sub>	D <sub>24</sub>	D <sub>30</sub>	① thk	
ft.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
20	10.5	7.8	7.1	6.3	.179	11.5	8.5	7.7	6.8	.179	30-A
24	11.0	8.3	7.6	6.8	.179	12.0	9.0	8.2	7.3	.179	30-A
28	11.5	8.8	8.1	7.3	.179	12.5	9.5	8.7	7.8	.179	30-A
32	12.5	9.8	9.1	8.3	.179	12.0	9.0	8.2	7.3	.239	30-A
36	12.0	9.3	8.6	7.8	.239	12.5	9.5	8.7	7.8	.239	36-A
40	12.0	9.3	8.6	7.8	.239	13.5	10.5	9.7	8.8	.239	36-A
44	12.5	9.8	9.1	8.3	.239	14.0	11.0	10.2	9.3	.239	36-A
48	13.0	10.3	9.6	8.8	.239	15.0	12.0	11.2	10.3	.239	36-A

Arm Length	ROUND ARMS					POLYGONAL ARMS				
	L <sub>1</sub>	D <sub>1</sub>	D <sub>2</sub>	① thk	Rise	L <sub>1</sub>	D <sub>1</sub>	② D <sub>2</sub>	① thk	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	6.5	3.8	.179	1'-9"	19.1	7.0	3.5	.179	1'-8"
24	23.1	7.5	4.3	.179	1'-10"	23.1	7.5	3.5	.179	1'-9"
28	27.1	8.0	4.2	.179	1'-11"	27.1	8.0	3.5	.179	1'-10"
32	31.0	9.0	4.7	.179	2'-1"	31.0	9.0	3.5	.179	2'-0"
36	35.0	9.5	4.6	.179	2'-4"	35.0	10.0	3.5	.179	2'-1"
40	39.0	9.5	4.1	.239	2'-8"	39.0	9.5	3.5	.239	2'-3"
44	43.0	10.0	4.1	.239	2'-11"	43.0	10.0	3.5	.239	2'-6"
48	47.0	10.5	4.1	.239	3'-4"	47.0	11.0	3.5	.239	2'-9"

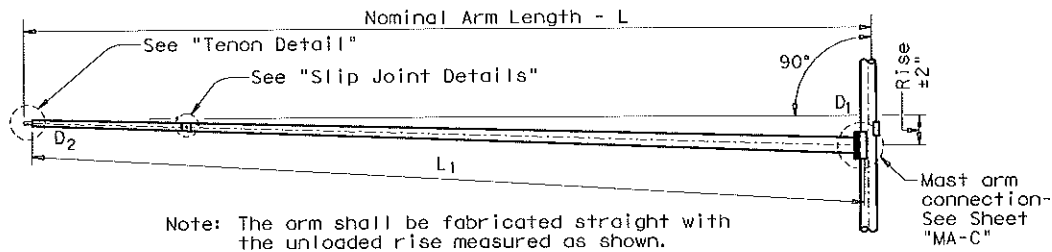
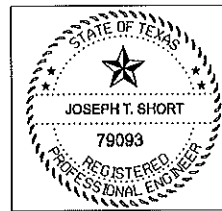
- D<sub>B</sub> = Pole Base O.D.
  - D<sub>19</sub> = Pole Top O.D. with no Luminaire and no ILSN
  - D<sub>24</sub> = Pole Top O.D. with ILSN w/out Luminaire
  - D<sub>30</sub> = Pole Top O.D. with Luminaire
  - D<sub>1</sub> = Arm Base O.D.
  - D<sub>2</sub> = Arm End O.D.
  - L<sub>1</sub> = Shaft Length
  - L = Nominal Arm Length
- ① Thickness shown are minimums, thicker materials may be used.
- ② D<sub>2</sub> may be increased by up to 1" for polygonal arms.

The table to the right was completed under my responsible supervision.

4/28/09  
DATE

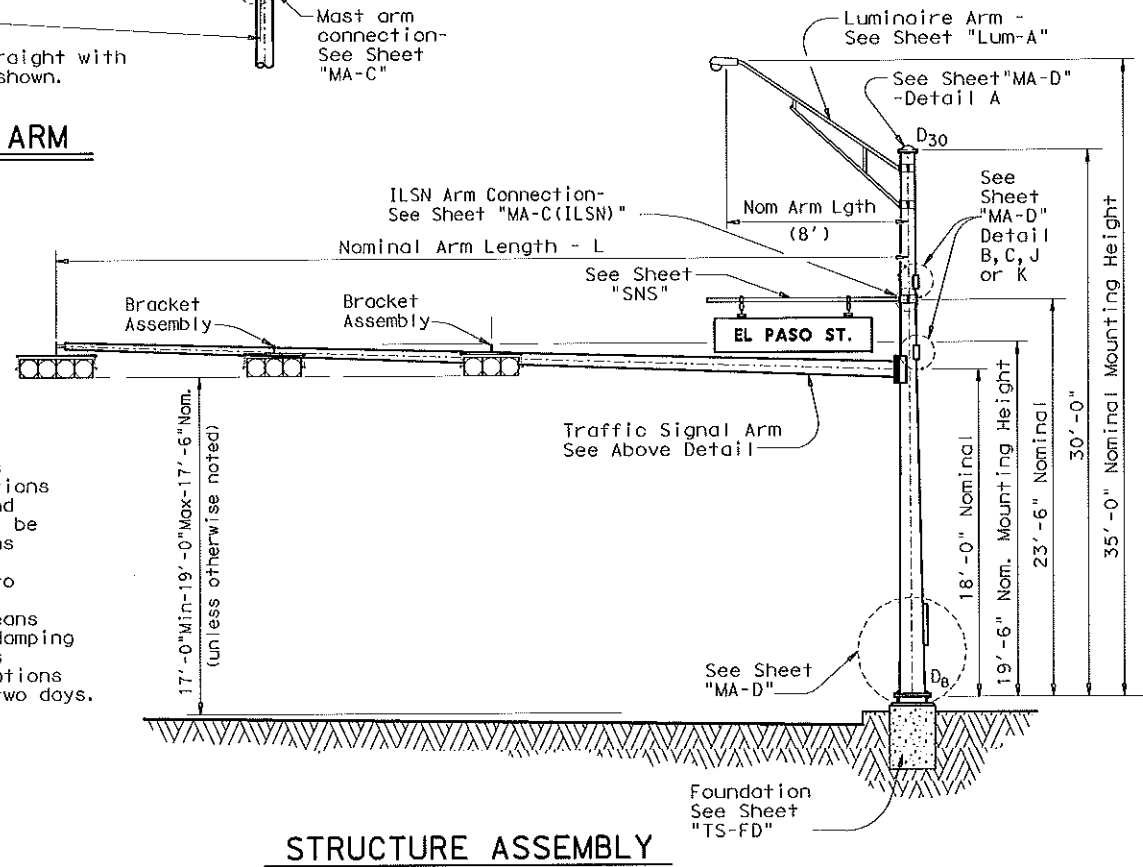
*J. T. Short*

JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450



Note: The arm shall be fabricated straight with the unloaded rise measured as shown.

**TRAFFIC SIGNAL ARM**  
(Fixed Mount)



**STRUCTURE ASSEMBLY**

**VIBRATION WARNING**

Mast Arms of approximately 40' or longer are subject to possible harmonic vertical vibrations in light wind conditions due to unusual combinations of signal numbers, weights or positions, arm-wind orientation, and arm-pole stiffness. Arms shall be visually inspected in 5 to 20 mph wind conditions after signal head installation and, if vertical movements with a total excursion (max positive to max negative) of more than approximately 8" are observed at arm tip, damping devices or other means shall be fitted to the arm(s). The necessary damping device(s) or other remedial measures shall be as recommended by the fabricator. Excessive vibrations shall not be allowed to continue for more than two days.

**SHIPPING PARTS LIST**

Ship each pole with the following attached: enlarged hand hole, pole cap, fixed-arm connection bolts and washers and any additional hardware listed in the table.

Nominal Arm Length	30' Poles With Luminaire		24' Poles With ILSN		19' Poles With No Luminaire and No ILSN	
	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20L-80		20S-80		20-80	
24	24L-80		24S-80		24-80	
28	28L-80		28S-80		28-80	
32	32L-80		32S-80		32-80	1
36	36L-80		36S-80		36-80	1
40	40L-80		40S-80		40-80	
44	44L-80		44S-80		44-80	2
48	48L-80		48S-80		48-80	

Traffic Signal Arms (1 per Pole) Ship each arm with the listed equipment attached

Nominal Arm Length	Type I Arm (1 Signal)		Type II Arm (2 Signals)		Type III Arm (3 Signals)	
	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-80		20II-80			
24	24I-80		24II-80			
28	28I-80		28II-80		28III-80	
32			32II-80	1	32III-80	
36			36II-80	1	36III-80	
40			40II-80		40III-80	
44			44II-80		44III-80	2
48			48II-80		48III-80	

Luminaire Arms (1 per 30' pole)

Nominal Arm Length	Quantity
8' Arm	
10' Arm	

④ Supply Option "A" unless otherwise noted

ILSN Arm (Max. 2 per pole) Ship with clamps, bolts and washers

Nominal Arm Length	Quantity
7' Arm	
9' Arm	

Anchor Bolt Assemblies (1 per pole)

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
3/4"	1'-6"	1
1 1/2"	3'-4"	1
1 3/4"	3'-10"	3

Each anchor bolt assembly consists of the following: Top and Bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers, 4 lock washers and 4 nut anchor devices (Type 2) per Standard Drawing "TS-FD".

Templates may be removed for shipment.



**TRAFFIC SIGNAL SUPPORT STRUCTURES**  
**SINGLE MAST ARM ASSEMBLY**  
**(80 MPH WIND ZONE)**  
**SMA-80(1)-99 (DAL)**

**MODIFICATIONS**

- Ⓐ REMOVED BRACKET ASSEMBLY OPTIONS A AND B
- Ⓑ REMOVED CGB CONNECTORS
- Ⓒ REMOVED TENON DETAIL
- Ⓓ REQUIRE MEASUREMENT OF POLE HEIGHT
- Ⓔ MIN. AND MAX. SIGNAL HEAD HEIGHT DISTANCE

11/99 Revision  
Changed to Facilitate new terminal strip enclosure

FILE: SMA-80.DGN	DN: MS	CK: JSY	DW: MMF	CK: JSY
© TXDOT 2001	DIST: 18	FEB REG: 6	STATE PROJECT NO:	SHEET
5-96	REVISIONS	18	6	TS15
11-99		DALLAS	CONTROL SECT	JOB HIGHWAY
				VITRUV.

Stainless steel bands and cast bracket as in "Astro-Brac" with 1/2" Dia Threaded Coupling.

**BRACKET ASSEMBLY  
OPTION C**

**GENERAL NOTES:**

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed equals 80 mph plus a 1.3 gust factor.

Poles are designed to support one 8'-0" luminaire arm, one 9'-0" internally lighted street name sign and one traffic signal arm with a length as tabulated. The specified luminaire load applied at the end of the luminaire arm equals 75 lbs vertical dead load plus the horizontal wind load on an effective projected area of 1.5 sq ft. The specified internally lighted street name sign load applied 4.5 ft from the centerline of the pole equals 85 lbs vertical dead load plus horizontal wind load on an effective projected area of 11.5 sq ft. The specified signal load applied at the end of the traffic signal arm equals 180 lbs vertical dead load plus the horizontal wind load on an effective projected area of 32.4 sq ft (actual area times drag coefficient).

See Standard Sheet "MA-0" for pole details, "MA-C" for traffic signal arm connection details, "MA-C (ILSN)" for internally lighted street name sign arm connection details, "LUM-A" for luminaire arm and connection details, "SNS" for internally lighted street name sign details, and "TS-F0" for anchor bolt and foundation details. See "MA-C" for material specifications.

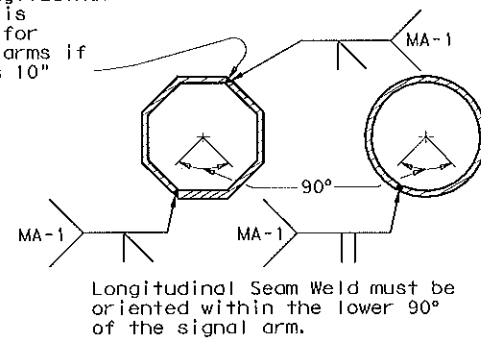
Fabrication shall be in accordance with the Specifications and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Miscellaneous welds which do not call for preapproved weld procedures are nevertheless subject to rejection for poor workmanship. Materials, fabrication tolerances, and shipping practices shall meet the requirements of this sheet and the Specifications.

Unless otherwise noted, all parts shall be galvanized in accordance with the Specifications.

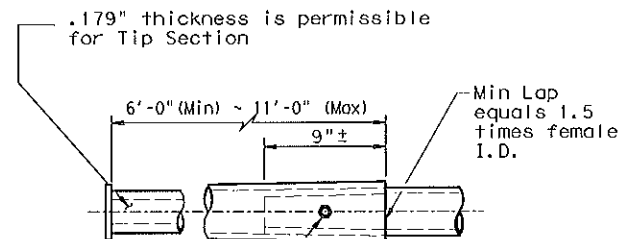
Special design require submission of shop drawings in accordance with the item "Steel Structures".

△ The pole heights are for bidding purposes only. Prior to fabrication, the Contractor in cooperation with the Engineer shall make field measurements to determine the actual pole height necessary to ensure a verticle clearance of 17'-6" min., 19' max.

Second longitudinal Seam Weld is permitted for polygonal arms if D<sub>1</sub> exceeds 10"



**ARM WELD DETAIL**



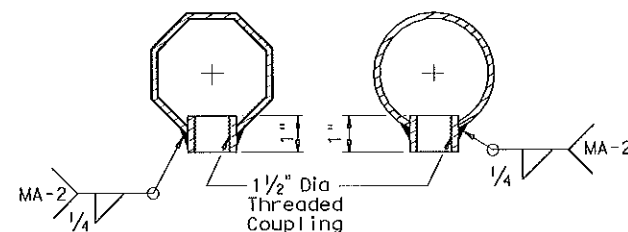
Note: A slip joint is permissible for arms 40' and greater in length. The slip joint shall be made in the shop, but may be match marked and shipped disassembled.

4 - 3/4" Dia holes and 1 - 5/8" Dia galv A307 bolt. Tack weld nut to thread projection after making joint. Repair damaged galvanizing in accordance with the specifications.

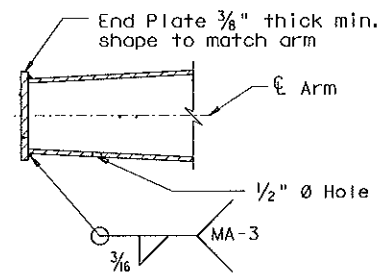
**SLIP JOINT DETAIL**

**NOTE:**

Pole manufacturer shall drill 1/2" hole in bottom of mast arm at end plate. (for hot-dip galvanizing)



**COUPLING DETAILS**



**PLATE WELD DETAIL**



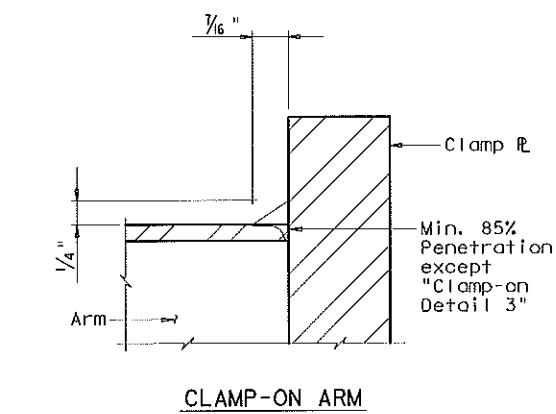
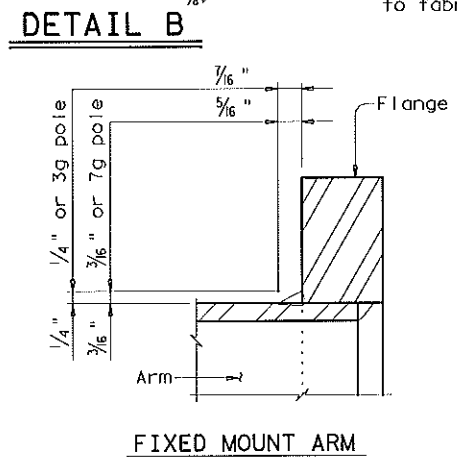
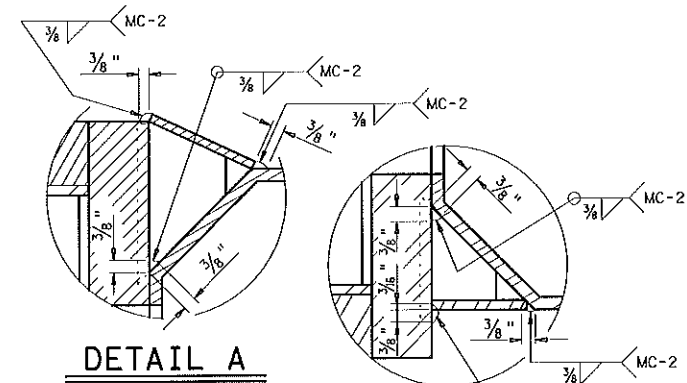
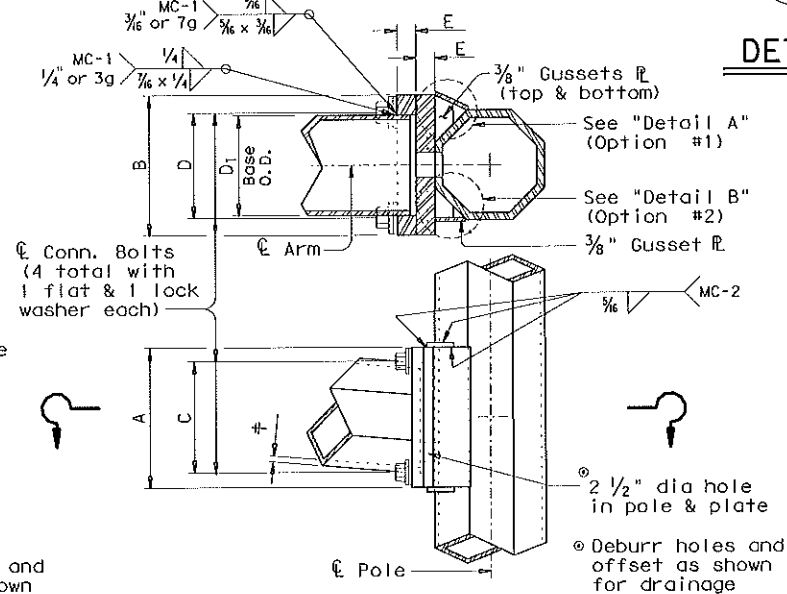
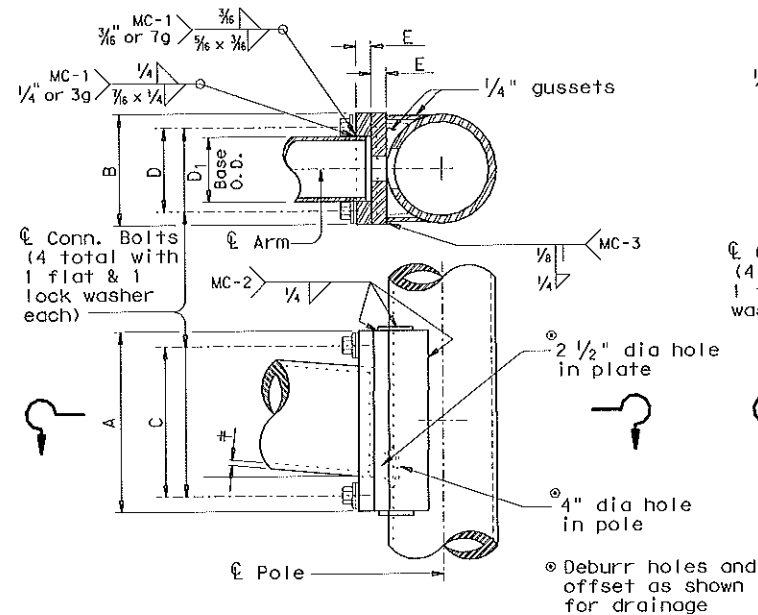
**TRAFFIC SIGNAL  
SUPPORT STRUCTURES  
SINGLE MAST ARM ASSEMBLY  
(80 MPH WIND ZONE)  
SMA-80(2)-96 (DAL)**

FILE: SMA-80.DGN	DN: MS	CK: JSY	DR: VMF	CR: JSY
© IxDOT 2001	DISTRICT	FED REG	STATE PROJECT	SHEET
REVISIONS	18	6		TS16
6-96	COUNTY	CONTROL SECT	JOB	HIGHWAY
	DALLAS			VITRUVIAN

ARM SIZE		A	B	C	D	E	CONN BOLT DIA
D <sub>1</sub>	±	in.	in.	in.	in.	in.	in.
6.5	.179	12	9	9	6	1	1
7.5	.179	13	9	10	6	1	1
8.0	.179	14	10	11	7	1 1/4	1 1/4
9.0	.179	16	11	13	8	1 1/4	1 1/4
9.5	.179	17	12	14	9	1 1/4	1 1/4
9.5	.239	18	12	15	9	1 1/4	1 1/4
10.0	.239	18	12	15	9	1 1/4	1 1/4
10.5	.239	18	13	15	10	1 1/2	1 1/2
11.0	.239	18	13	15	10	1 1/2	1 1/2

ARM SIZE		A	B	C	D	E	CONN BOLT DIA
D <sub>1</sub>	±	in.	in.	in.	in.	in.	in.
7.0	.179	11	11	8	8	1 1/4	1 1/4
7.5	.179	11	11	8	8	1 1/4	1 1/4
8.0	.179	11	11	8	8	1 1/4	1 1/4
9.0	.179	13	13	10	10	1 1/4	1 1/4
10.0	.179	13	13	10	10	1 1/4	1 1/4
9.5	.239	13	13	10	10	1 1/4	1 1/4
10.0	.239	14	14	11	11	1 1/2	1 1/2
11.0	.239	14	14	11	11	1 1/2	1 1/2
11.5	.239	14	14	11	11	1 1/2	1 1/2

MATERIALS	
Round Shafts or Polygonal Shafts	ASTM A595 GR A, ASTM A570 GR 50, ASTM A607 GR 50, ASTM A572 GR 50 or A36M50
Plates (1)	ASTM A36 OR A572 GR 50 or A595(2) or A36M50
Connection Bolts	ASTM A325 except where noted
Pin Bolts	ASTM A325
Pipe	ASTM A53 GR A or B, or A501
Misc. Hardware	Galvanized steel or stainless steel or as noted



**ARM BASE WELD DETAILS**

ARM SIZE		A	F	CONN. BOLTS	PIN BOLTS
D <sub>1</sub>	±	in.	in.	No. Dia. ea. in.	No. Dia. ea. in.
6.5	.179	12	8	4 * 3/8	2 5/8
7.5	.179	14	8	4	2 5/8
8.0	.179	14	8	4	2 5/8
9.0	.179	16	10	4	2 5/8
9.5	.179	18	12	4	3 5/8
9.5	.239	18	12	4	3 5/8
10.0	.239	18	12	4	3 5/8

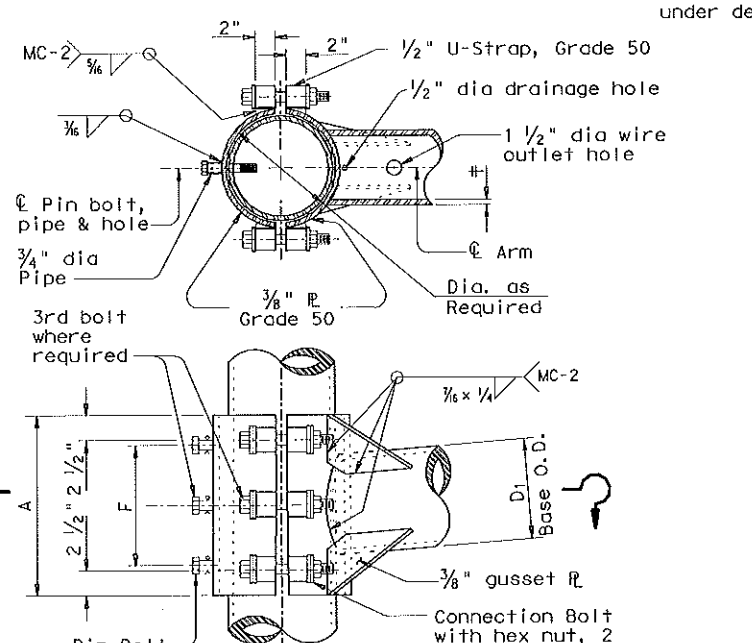
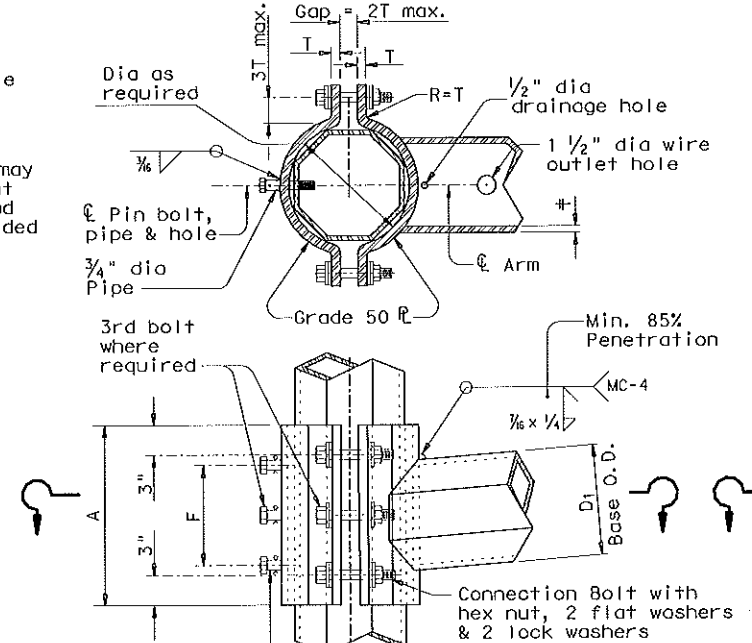
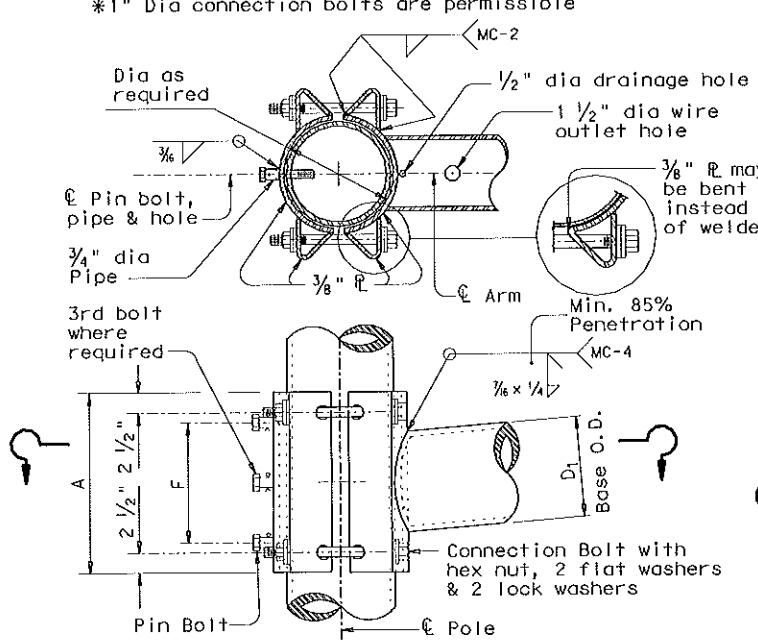
ARM SIZE		A	F	T	CONN. BOLTS	PIN BOLTS
D <sub>1</sub>	±	in.	in.	in.	No. Dia. ea. in.	No. Dia. ea. in.
7.0	.179	12	8	3/4	4 3/4	2 5/8
7.5	.179	14	8	3/4	4 3/4	2 5/8
8.0	.179	14	8	3/4	4 3/4	2 5/8
9.0	.179	16	10	7/8	4	2 5/8
10.0	.179	18	10	7/8	4	2 5/8
9.5	.239	18	10	1	6	3 5/8
10.0	.239	18	10	1	6	3 5/8

ARM SIZE		A	F	CONN. BOLTS	PIN BOLTS
D <sub>1</sub>	±	in.	in.	No. Dia. ea. in.	No. Dia. ea. in.
6.5	.179	12	8	4	2 5/8
7.5	.179	14	8	4	2 5/8
8.0	.179	14	8	4	2 5/8
9.0	.179	16	10	4	2 5/8
9.5	.179	18	12	6	3 5/8
9.5	.239	18	12	6	3 5/8
10.0	.239	18	12	6	3 5/8

**GENERAL NOTES:**  
 Clamp-on details are used for the second arm on dual mast arm assemblies. A Maximum 1 1/2" wide vertical slotted hole may be cut in the front clamp plate to facilitate drainage during galvanizing. The slot shall be centered behind the arm and shall be no longer than the arm diameter minus 1"

Fixed mount details are used for single mast arm assemblies and for the first arm on dual mast arm assemblies.  
 Where duplicate parts occur on a detail, welds shown for one part shall apply to all similar parts on the detail.  
 Pin bolts are required to prevent rotation of clamp-on arms under design wind forces.

**NOTE:**  
 Pin bolts shall be A325 with threads excluded from the shear plane. Pin bolt and 3/4" dia pipe shall have 3/16" dia holes for a 1/8" dia galvanized cotter pin. Back clamp plate shall be furnished with a 3/4" dia hole for each pin bolt. An 1/8" dia hole for each pin bolt shall be field drilled through the pole after arm orientations have been approved by the Engineer.



Texas Department of Transportation  
 Traffic Operations Division

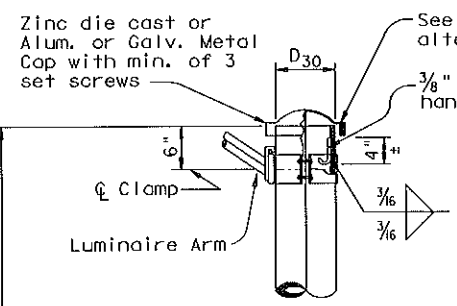
**STANDARD ASSEMBLY FOR TRAFFIC SIGNAL SUPPORT STRUCTURES**

**MAST ARM CONNECTIONS**

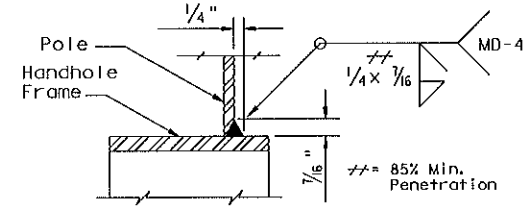
MA-C-96

FILE#	MA-C.DGN	DN# J/S	CK# JSY	DR# JNF	CK# JSY
ORIG DATE#	AUGUST, 1995	DIST	FED REQ	STATE AID PROJECT	SHEET
5-96	REVISIONS	18	6		TS17
		COUNTY	CONTROL	SECT	JOB
		DALLAS			HIGHWAY

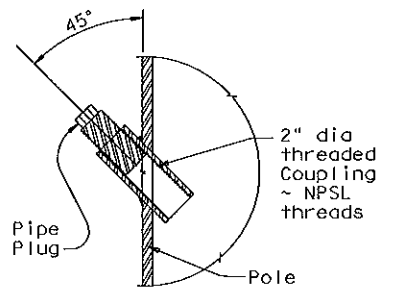
126A



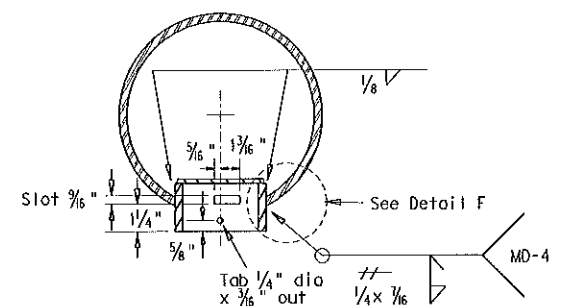
**DETAIL A**  
(for pole with luminaire)



**DETAIL E**

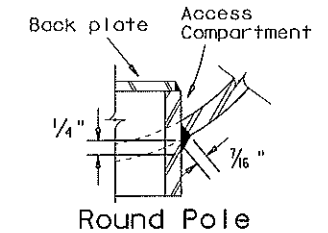


**COUPLING DETAIL**

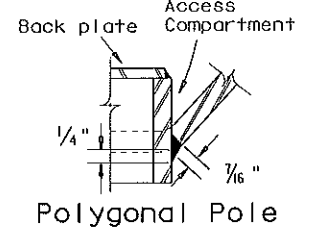


**SECTION C-C**

Opening for access compartment shall be no more than 1/16 inch wider than the access compartment itself.

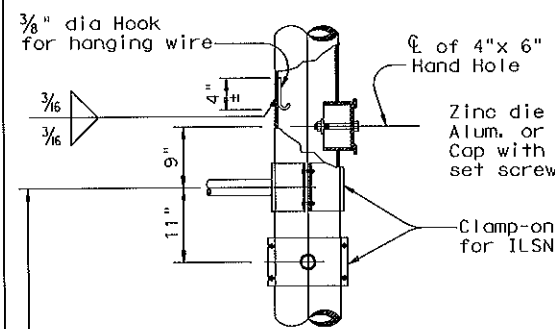


**Round Pole**

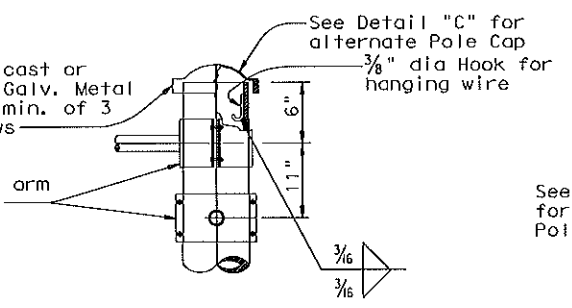


**Polygonal Pole**

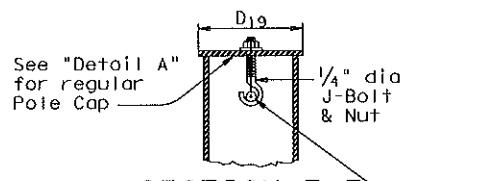
**DETAIL F**



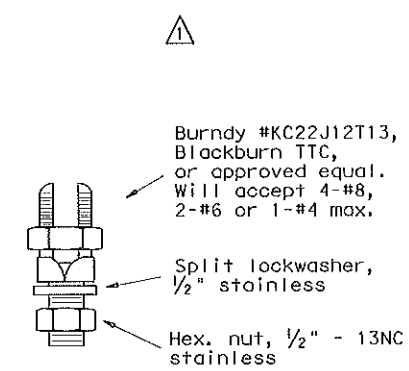
**DETAIL J**  
(If ILSN applied)



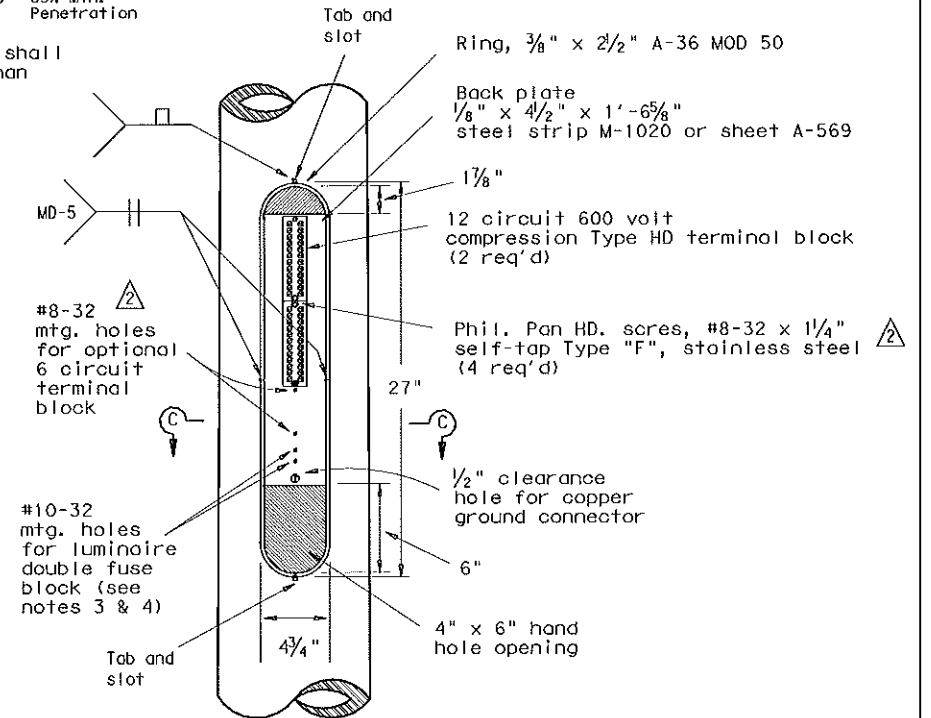
**DETAIL K**



**SECTION E-E**

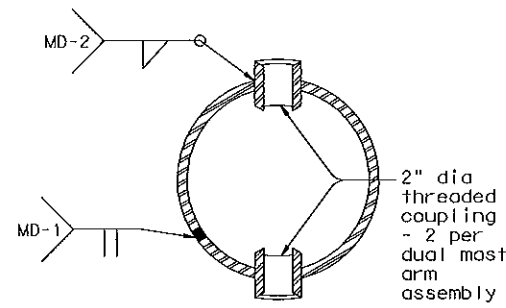


**COPPER GROUND CONNECTOR**

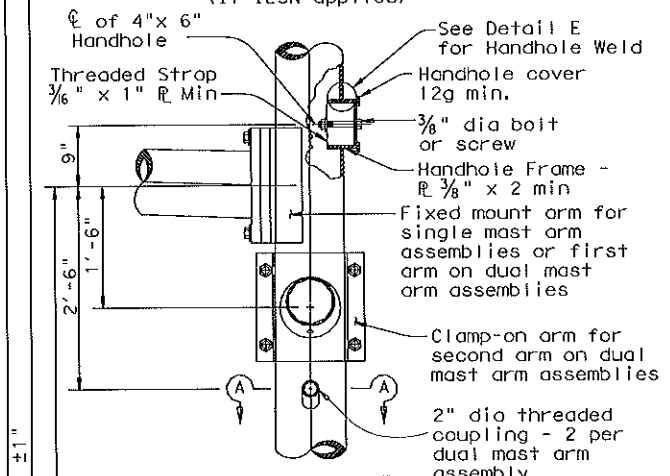


**ACCESS COMPARTMENT**

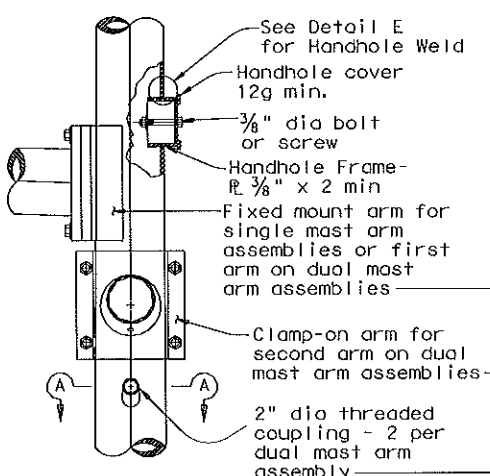
- The cover shall be one piece formed from ABS plastic, shall be a pearl gray color, and shall be suitable for exposure to harsh sunlight and extreme weather. Cover shall latch with two screw latches and shall fit tightly to the enclosure ring to create a rainproof seal. Latch screws shall be 1/4-20 stainless flat socket head screws with tamper proof feature.
- The pole manufacturer shall provide with each pole a separate kit consisting of: one cover with two latching assemblies, two terminal strips (Marathon #985GP12CU or approved equal), four #8-32 x 1/4" self tapping type "F" stainless steel pan head screws, and one ground connector (Blackburn TTC, Burndy KC22J12T13, or Ilco SSS-5). The traffic signal contractor shall install the kit items in the field.
- The screw hole spacing on the enclosure back plate shall be for two Marathon #985GP12 terminal strips, one Marathon #985GP06CU terminal strip, and one Bussmann #BM6032B fuse block.
- Install one Bussmann #BM6032B, Littelfuse #L60030M-2C, or Ferraz-Shawmut #30352 fuse block for poles where luminaires are to be installed.



**SECTION A-A**

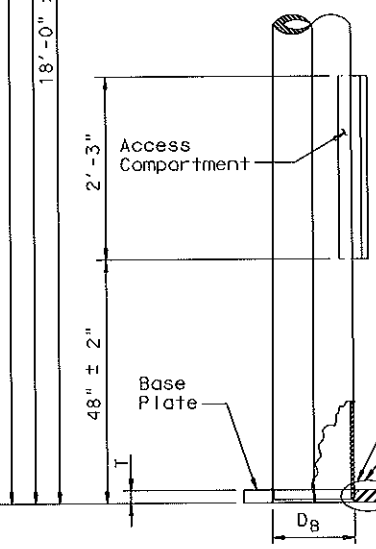


**DETAIL B**  
(for 30' pole with luminaire and ILSN sign)

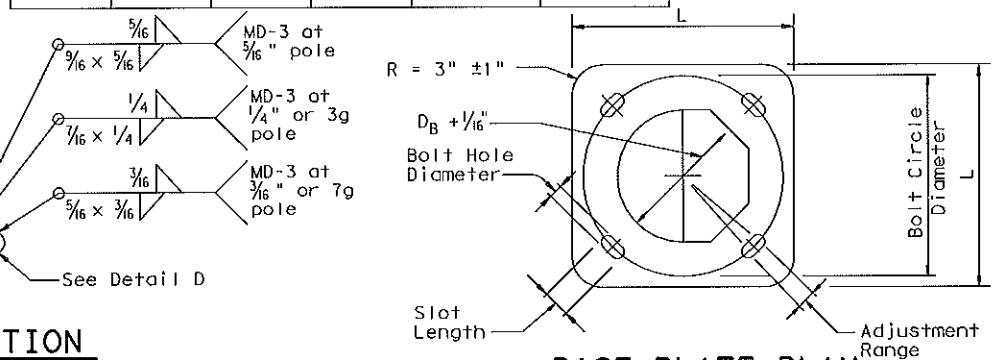


**DETAIL C**  
(for 19' pole with no ILSN sign and no luminaire)

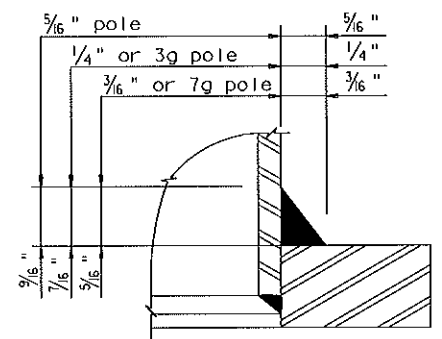
Anchor Bolt Diameter	Bolt Hole Diameter	Slot Length	Bolt Circle Diameter	Base R. Dim. L x T	Adjust. Range
1 1/2"	1 3/4"	3 1/2"	17"	18" x 1 1/2"	13.4°
1 3/4"	2"	4"	19"	20" x 1 3/4"	13.5°
2"	2 1/4"	4 1/2"	21"	22" x 2"	13.6°
2 1/4"	2 1/2"	5"	23"	24" x 2 1/4"	13.7°



**POLE ELEVATION**



**BASE PLATE PLAN**



**DETAIL D**

STANDARD PLANS  
Texas Department of Transportation  
Traffic Operations Division

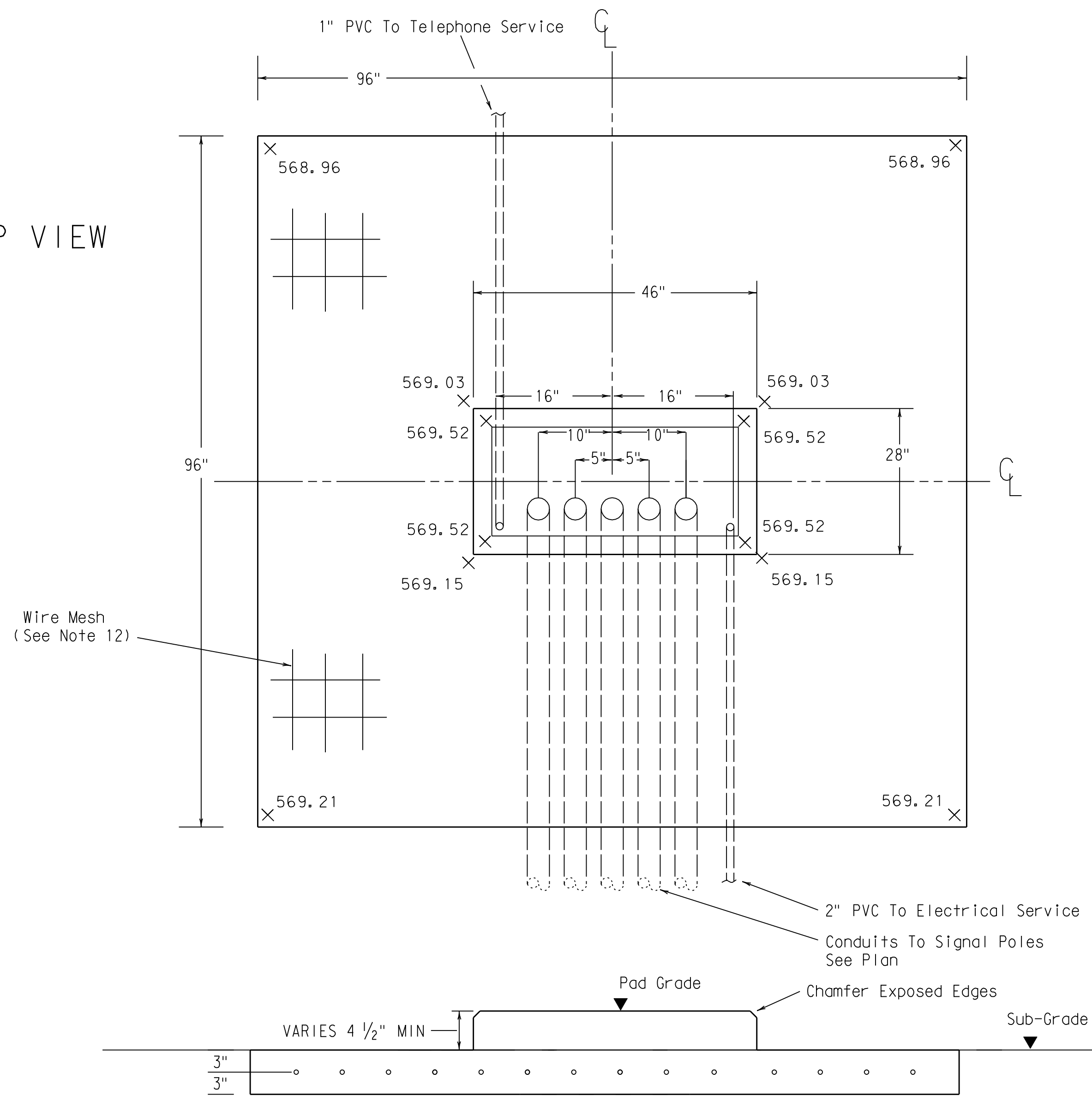
**TRAFFIC SIGNAL SUPPORT STRUCTURES MAST ARM POLE DETAILS**

MA-D-07 (DAL)

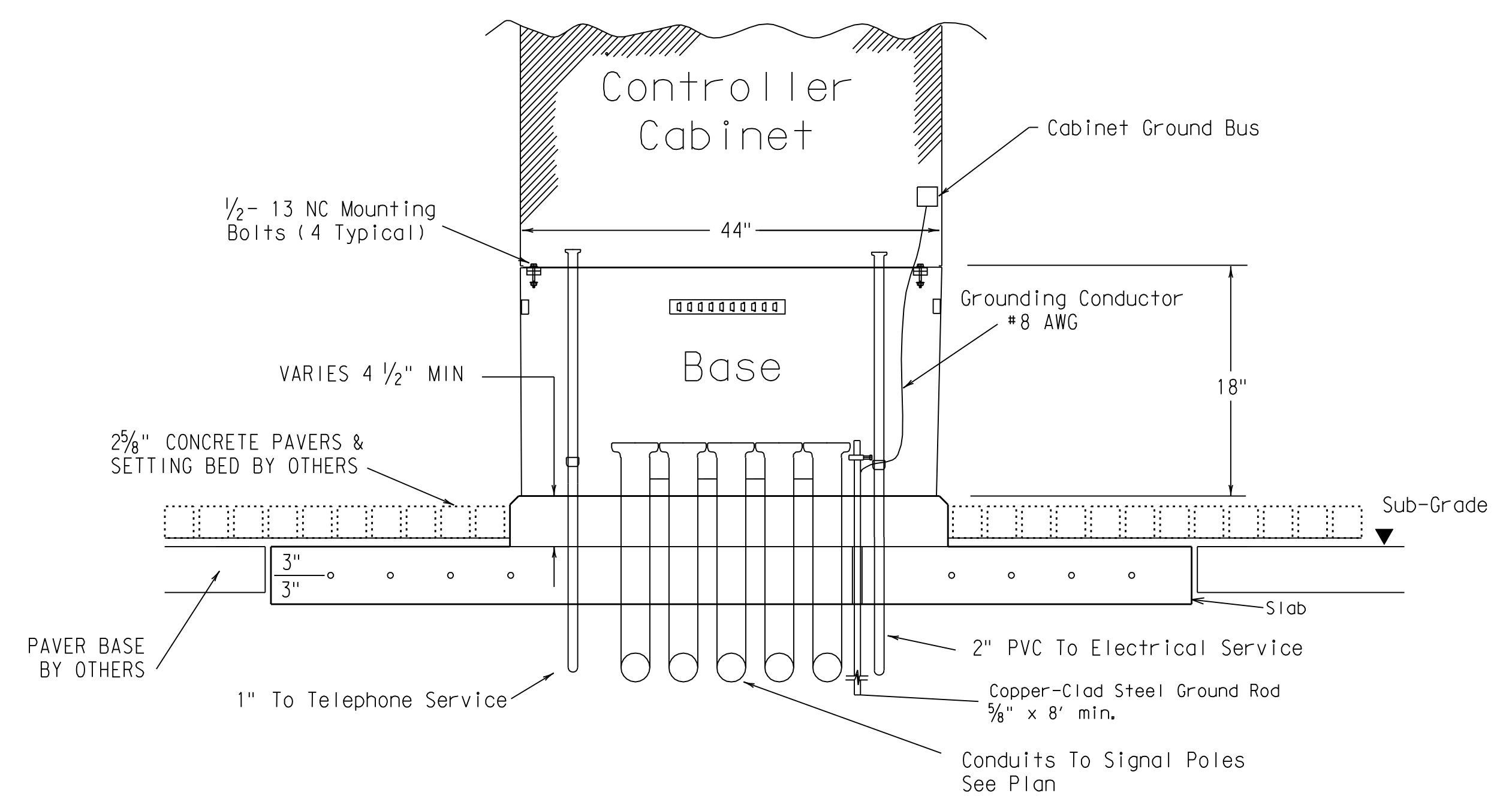
- 10/03 Revision Revised notes, and remove detail.
- 2/07 Revision Revised dimension of terminal-block screw.

REVISED	DATE	BY	CHK'D	APP'D	SCALE
8-99	10-00	10-03	2-07		
STATE DISTRICT		FEDERAL REGION	FEDERAL AID PROJECT		SHEET
DAL		6			TS18
COUNTY	CENTRAL	SECTION	JOB	HIGHWAY	
DALLAS				VITRUVIAN	

TOP VIEW



SIDE VIEW



TRAFFIC SIGNAL CONTROLLER BASE:

1. Provide a traffic signal controller base (cabinet base) manufactured of polymer concrete material consisting of calcareous and siliceous stone, glass fibers and thermoset polyester resin. The polymer concrete cabinet base must be reinforced on the inside of the cabinet base with fiberglass matting. Provide one of the following bases: Armorcast Part # A6001848X24, Quazite Model # PG3048Z709, or other as approved by TxDOT Traffic Operation Division.
2. The polymer concrete material must have a minimum compressive strength of 10,300 pounds per square inch (psi), minimum flexural strength of 3600 psi, and minimum shear strength of 3600 psi.
3. The polymer concrete cabinet base must conform to the dimensions shown and must accommodate a standard TxDOT basemount cabinet.
4. Supply the cabinet base with four 1/2"-13 UNC stainless steel inserts for attachment of the cabinet to the base. Inserts must withstand a minimum torque of 50 ft-lb and a minimum straight pull out strength of 750 lbs.
5. Provide the cabinet base with 4 cable racks mounted one on each side of the base 2" to 7" from the top edge of the base. Unless approved otherwise, cable racks must be 1-1/2 x 3/8 x 3/8 inch steel channel with eight T-slots spaced at 1-1/2 inches. The cable racks must easily accommodate the insertion of tie wraps to attach field wiring to the racks to serve as strain relief. Secure cable racks to the base using 1/2"-13 UNC stainless steel screws and inserts.
6. The cabinet base, when secured to the concrete slab with controller cabinet attached, must withstand a minimum wind load of 125 mph or a 850 lb force applied at 49" above the bottom of the base without causing the base or cabinet to come out of their anchored position or cause any permanent deformation. The manufacturer must supply certification by an independent testing laboratory or sealed by a Texas Licensed Professional Engineer. Provide the cabinet base with hardware for attachment to a concrete slab.
7. The traffic signal base must be permanently marked either by impress or by permanent ink with the manufacturer's model number and name or logo.
8. Seal the base to the concrete with a silicone caulk bead and fastened to the slab per manufacturer's instructions.

CONCRETE SLAB:

9. Traffic signal controller pad must be a portland cement concrete slab poured in place, must conform to the dimensions shown, and must be level.

10. Bond a #8 AWG copper ground wire and an 8 ft ground rod bonded to the reinforcing mesh by a suitable UL Listed clamp and terminated to the cabinet grounding bus for the purpose of providing a local ground for the electrical grounding conductor. The electrical grounding conductor specified in Item 680-3.A.4 is required and must be terminated to the cabinet ground bus.
11. Install a PVC sleeve to prevent the ground rod from direct embedment in the slab.
12. Provide welded wire mesh 6X6-W2.9 X W2.9 for reinforcement. Provide joints and splices in the mesh with a minimum 6-inch overlap. Center the mesh between top and bottom and provide a minimum 3 inch cover on the edges.
13. Provide Class B concrete minimum for the slab in accordance with Item 421. Construct the slab in accordance with Item 531.

CONDUITS:

14. Stub up and run 3-inch conduits through the slab to the various traffic signal poles and ground boxes as shown on the layouts. Install the number of conduits as shown on layouts plus two additional 3 inch conduits for future use. Terminate the conduits with a bushing between 2 and 4-inches above the slab.
15. Extend conduits for future use at least 18-inches from the edge of the slab, terminate underground with a coupling, and cap and seal so that the seal can be removed without damaging the coupling. This must also apply to unused telephone conduit.
16. Stub up two separate conduits through the slab from the electrical and telephone services. Run the conduit for the electrical feed directly to the electrical service enclosure. Run the conduit for the telephone line directly to the telephone service, usually located on the same pole as the electrical service. Telephone must not under any circumstance share a conduit with any other function.
17. Terminate electric and telephone conduits above the slab with a coupling. After the base is installed, extend the conduits above the top of the base and secure to the base using a steel one-hole strap or similar suitable substitute.

CONTROLLER CABINET:

18. Anchor the controller cabinet to the base using four stainless steel 1/2-13 NC bolts.
19. The silicone caulk bead specified in Item 680.3.B must be RTV 133.

PAYMENT:

20. Bid TS-CF as subsidiary to Item 680.

NO.	REVISION	BY	DATE

**Addison** TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY & PONTE AVENUE

TRAFFIC SIGNAL CONTROLLER  
CABINET PAD -- TS-CF-04 (VP)

**icon** Consulting Engineers, Inc.  
Civil Engineers - Designers - Planners  
250 W. Southlake Blvd., Suite 117  
Southlake, TX 76092 (817) 552-8210

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	ICE	ICE	MAY 7 2009	PW# 2009-01	TS19

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



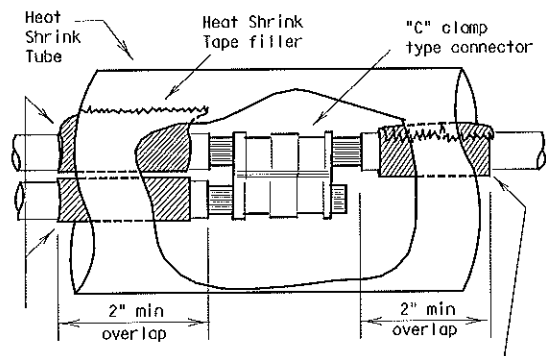
I. ELECTRICAL CONDUCTORS

A. MATERIALS

1. Insulated conductors shall be NEC Type XHHW. Insulated conductors shall be color coded in accordance with the NEC, articles 200, 250, and 310; i.e. Insulation of grounded conductors (neutrals) shall be white. Grounding conductors (ground wires) shall be bare or insulation shall be green. Insulation of ungrounded conductors (hots) shall be any color except green, white, or gray. Identification of conductors #6 American Wire Gauge (AWG) and smaller shall be by continuous jacket color. Color coding of electrical conductors #4 AWG and larger shall be either by continuous color jacket or by colored tape. Colored tape marker shall consist of a half-lap of tape covering a 6-inch length of conductor.
2. Where two or more circuits are present in one conduit or enclosure, the conductors of each circuit shall be identified by a permanent non-metallic tag at each accessible location. The tag shall be fastened to the conductors by two plastic straps. Each tag shall indicate circuit number, letter, or other identification shown in the plans.
3. Grounding electrode conductor #6 AWG for bonding to ground rod at electrical service, shall be solid. Connection of conductor to ground rod shall be made using UL Listed connectors designed for such purposes.
4. Heat Shrink Tape filler shall be used to seal the ends of heat shrink tubing around two or more conductors that are insulated with heat shrink tubing. Tape material shall have a minimum dielectric strength of 225 volts per mil and shall be cross-linked butyl rubber. Tape shall be supplied in rolls and shall have a backing (release paper) to prevent the tape from sticking to itself.
5. Heat shrink tubing shall be heavy wall, UL listed for 600 volts or greater and shall have factory applied internal sealant.
6. GelCaps shall be UL listed for 600-volt applications. GelCap shall have see-through elastomer molded cover. Cover shall be filled with high dielectric insulating gel silicone sealant to provide waterseal. Cover shall be held in place by snap-lock, molded clamp made of UV stable polypropylene.
7. Splicing materials, insulating materials, breakaway disconnects, GelCaps and fuse holders will not be paid for directly but shall be subsidiary to various bid items.

B. CONSTRUCTION METHODS

1. After conductors have been installed in conduit, a pull test shall be made on conductors. When any length of conductor cannot be freely pulled, the Contractor shall make any needed alterations or repairs at no expense to the State.
2. The Contractor shall perform insulation resistance tests in accordance with Item 620, "Electrical Conductors." The Contractor shall coordinate with the Engineer to witness the tests.
3. A sufficient length of conductor for making up connections shall be left in ground boxes (2 feet minimum, 3 feet maximum, to point of splice, 3 feet minimum, 4 feet maximum, when conductor is pulled through with no splice), enclosures, weatherheads and pole bases (1 foot minimum, 1.5 feet maximum).
4. Splices shall be made only in junction boxes, ground boxes, pole bases, or electrical enclosures and shall be made with listed compression or screw type pressure connectors, terminal blocks, bolted lugs, or split bolt connectors. Splices shall be insulated with heavy wall heat shrink tubing or GelCaps and shall be made so as to provide a watertight splice. Heat shrink sleeve shall overlap conductor insulation a minimum of 2 inches on both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, the Contractor shall increase the diameter of the conductors insulation using heat shrink filler tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Tape shall be visible after completion of all splices. Where filler tape is used but not visible, the Engineer shall approve each individual splice by conducting a physical inspection of each splice. When it appears the tubing has been burned, or overheated the tubing shall be considered to be defective and shall be replaced.
5. GelCaps when used in place of heat shrink method of splicing, shall be sized and installed according to manufacturer's specifications. (Raychem GelCap and GelCap SL or equal.)
6. Wire nuts may be used for #8 AWG or smaller conductors in above-ground junction boxes, but not in pole bases or ground boxes. Wire nuts shall be positioned upright to prevent the accumulation of water. Wire nuts used at these locations shall have factory applied waterproof sealant.
7. Conductors in illumination poles shall be supported by a J-hook in the top of the pole.
8. All conductors bid under Item 620 "Electrical Conductors" shall have breakaway electrical disconnects installed anytime conductors pass through a break-away support device.
9. For terminating the conductors, insulation-jacketing material shall be removed in such a manner as to not nick any of the individual strands of the conductor. When individual conductor strands are removed, the conductor shall be considered to be damaged.
10. When a conductor or cable has been damaged, or fails to pass an insulation resistance test, the conductor shall be replaced.
11. Duct tape, black electrical tape, or wire nuts shall not be used in the repair of a damaged conductor.
12. For terminations, no more than one wire may be installed under a single pressure connector, unless the device is listed for more than one wire.
13. Conductors connected to break-away in line fuse holders must be installed in accordance with the specific manufacturer's installation instructions. Where threaded connections are made, they shall be properly torqued. Where crimp type connections are made, crimps shall be made using properly sized crimping pliers. Proper conductor terminations are critical to the safe operation of break-away devices.
14. Waterproofing boots shall be properly trimmed to fit snugly around the conductor so as to provide a water proof connection. No more than one wire may enter a single opening in any one boot. Water proofing boots must provide the correct number of openings. Where only one wire is to be connected to a boot, the boot may not be a two wire type.



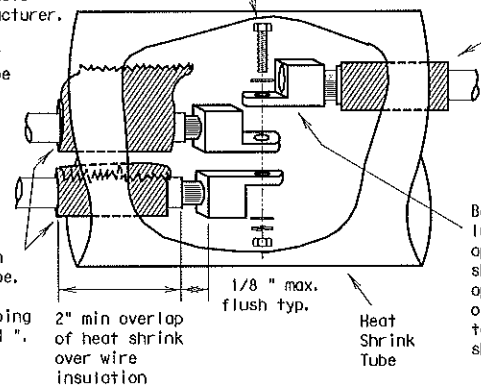
Seal between conductors with heat shrink tape. Tape to extend past end of tubing by 1/8" to 1/4".

Increase insulation diameter with heat shrink tape if necessary. Tape to extend past end of tubing by 1/8" to 1/4".

SPLICE OPTION 1

C-CLAMP

Stainless steel or brass machine screw, nut, 2 flat washers, lock washer or self locking nut. Machine screw to be a min. of 10-24, 3/16 or the same size as the mounting hole provided by the manufacturer. Secure wrench tight. Movement of lugs after final assembly shall be considered to be a defective connection.



Seal between conductors with heat shrink tape. Tape to extend past end of tubing by 1/8" to 1/4".

Increase insulation diameter with heat shrink tape if necessary. Tape to extend past end of tubing by 1/8" to 1/4".

2" min overlap of heat shrink over wire insulation

Heat Shrink Tube

1/8" max. flush typ.

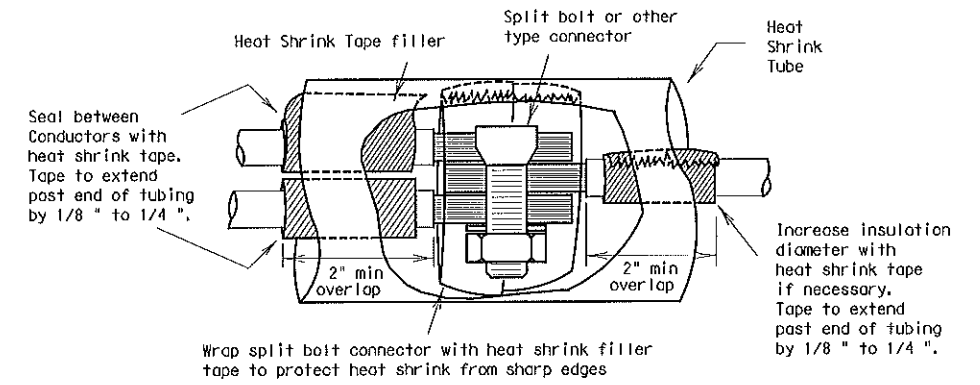
Bolt together lugs and prior to applying heat shrink tubing, apply two layers of heat shrink tape to cover sharp edges.

SPLICE OPTION 2

BOLTED WIRE LUGS

SPLICE OPTION 3

SPLIT BOLT



Seal between conductors with heat shrink tape. Tape to extend past end of tubing by 1/8" to 1/4".

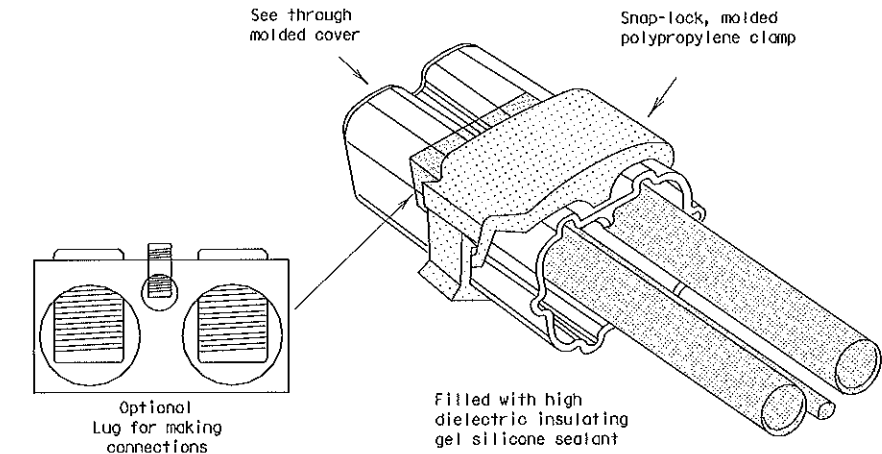
Wrap split bolt connector with heat shrink filler tape to protect heat shrink from sharp edges

Increase insulation diameter with heat shrink tape if necessary. Tape to extend past end of tubing by 1/8" to 1/4".

SPLICE OPTION 4

GELCAP

GelCap shall be sized and installed according to manufacturer's specifications



Optional Lug for making connections

Filled with high dielectric insulating gel silicone sealant

See through molded cover

Snap-lock, molded polypropylene clamp

15. All conduits that contain circuit wiring of 50 volts or more shall contain an equipment grounding conductor (EGC). Conduit for traffic signals shall have an EGC, with a minimum size of #8 AWG stranded. Unless otherwise shown on the plans, the EGC for all other conduits shall be the same AWG size as the largest current carrying conductor contained in that conduit. The EGC shall be paid for item 620-Electrical Conductors.

C. TEMPORARY WIRING

1. Temporary conductors and electrical equipment to provide power for utilization equipment, shall be installed in accordance with the NEC article 305. All temporary wiring materials and methods shall comply with the standard sheets. All power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade, supplied from a utility power source, shall be provided with a ground fault circuit interrupter.
2. Residual current protective devices (RCD) may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.
3. Where wire nuts are approved for temporary wiring, they shall be of the self-sealing type.
4. All conductor splices must be contained within a listed enclosure, ground box or the splices will be more than ten feet above grade vertically and more than five feet horizontally from any metal structure. Where temporary conductors are installed in any area that is likely to be subjected to vehicle traffic, or mobile construction equipment, the vertical clearance to ground shall be at least 18 feet when measured at the lowest point. Where power conductors are to be supported by a span wire, the span wire shall be properly grounded.
5. Existing conduit containing service conductors uncovered during the construction process shall be repaired in a timely manner in accordance with the NEC. Existing non-metallic conduit exposed during construction shall not be left exposed above grade, or with less than eighteen inches of cover, without protective methods approved by the Engineer.

STANDARD PLANS  
TEXAS DEPARTMENT OF TRANSPORTATION  
Traffic Operations Division

ELECTRICAL DETAILS-  
CONDUCTORS

ED(2)-03

© TxDOT January 1992	DR- KB	CK- JW	DF- DN	CG- GC	NEG NO. 1
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT		
10-93	18	6			
4-98			COUNTY	CONTROL	SECTION
12-00	DALLAS				
3-03					VIETRIAN



11. GROUND RODS

A. MATERIALS

- All ground rods installed at electrical services, including supplemental lightning protection ground rods specified by the plans in other locations such as pole bases, shall be copper clad and UL listed. Rods shall be a minimum diameter of 5/8 inch. The length shall be a minimum of 8 feet. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets.
- Ground rod clamps shall be listed to be in direct contact with the soil. Where concrete encasement is required, the clamp shall be listed for concrete encasement.

B. CONSTRUCTION METHODS

- Ground rods installed in locations such as pole bases, to provide supplemental lightning protection need not be totally in contact with the soil. Where called for in the plans, rods may be encased in soil or concrete or any combination of soil and concrete. When concrete encased, the connection of the conductor to the rod shall be readily accessible for inspection or repairs. When driven into the soil the upper end shall be between 2 to 4 inches below finished grade. Ground rods shall not be placed in the same drilled hole as a timber pole.
- Ground rods shall be installed such that the end imprinted with the rod's part number is installed as being the upper end.
- Non-conductive coatings such as concrete splatter shall be removed from the rod at the clamp location.
- Routing of lightning protection ground rod wires shall be run as short and straight as possible. Where bends are required they shall have a minimum radius of four inches.
- Unless specifically called for by the plans, conduits used for ground rod wires shall be non-metallic. Where metal conduits are specified, a grounding bushing and properly sized bonding jumper shall be provided and properly installed on each end.
- Where rocky soil or a solid rock bottom is encountered when driving a ground rod and the horizontal trench placement method is the only viable solution, written authorization from the Engineer must be obtained.

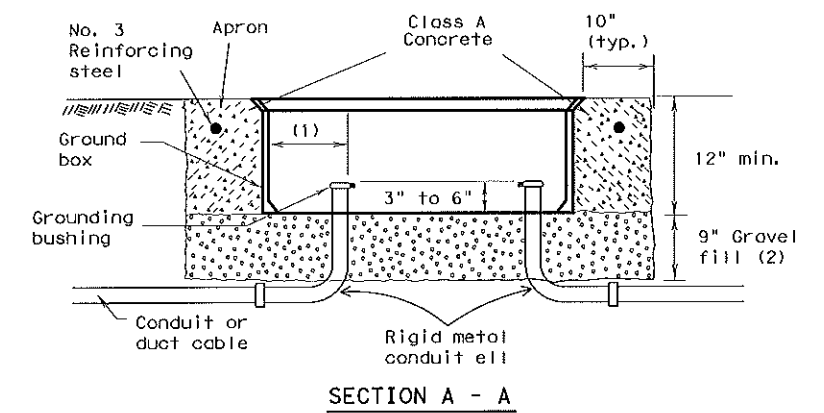
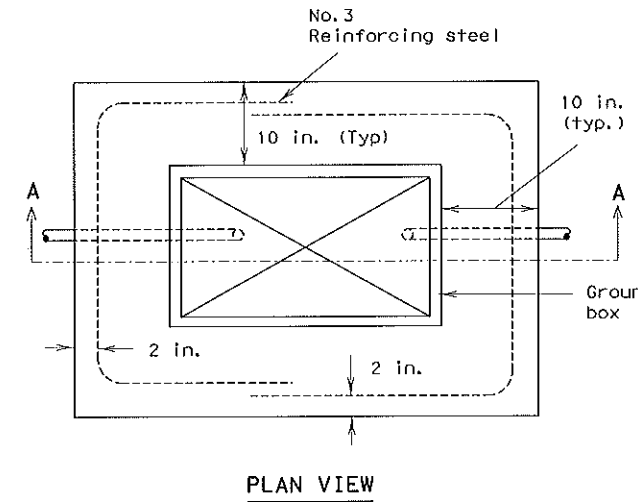
111. GROUND BOX

A. MATERIALS

- Ground boxes 16x30x24 inches (WxLxD) or smaller shall be polymer concrete of the type required by the descriptive code shown elsewhere. Larger ground boxes shall be as shown elsewhere in the plans.
- All ground boxes and covers shall be permanently marked either by impress or by permanent ink, with manufacturer's model number and manufacturer's name or logo.
- Covers shall be bolted down, and bolt holes in the box shall be arranged to drain dirt.
- Ground box Types A, B, C, D & E shall meet the following requirements:
  - Ground boxes and covers be manufactured from polymer concrete reinforced with continuous strands of woven or stitched borosilicate fiberglass cloth. The polymer concrete shall be made from catalyzed polyester resin, sand and aggregate, and shall have a minimum compressive strength of 11,000 psi. Polymer concrete containing chopped fiberglass or fiberglass reinforced plastic is not acceptable.
  - Minimum inside dimensions shall be as follows (width x length x depth):
    - Type A shall be 11.5 inches x 21 inches x 10 inches, (122311)
    - Type B shall be 11.5 inches x 21 inches x 20 inches, (122322)
    - Type C shall be 15.25 inches x 28.25 inches x 10 inches, (162911)
    - Type D shall be 15.25 inches x 28.25 inches x 20 inches, (162922)
    - Type E shall be 11.5 inches x 21 inches x 16 inches, (122317)
  - Bottom edge of box or extension shall be footed with a minimum 1/4 inch flange.
  - Ground boxes shall withstand 600 lbs. per sq. ft. applied over the entire sidewall with less than 1/4 inch deflection per foot length of box. Ground boxes and covers shall withstand a test loading of 20,000 lbs. over a 10 inch by 10 inch area centered on the cover with less than 1/2 inch deflection. Ground boxes and covers shall meet Western Underground Standards 3.6. Manufacturer shall supply certification by an independent laboratory or sealed by a Texas-Licensed Professional Engineer.
  - Covers shall be 2 inch (nominal) thick polymer concrete. All hardware shall be stainless steel. Cover shall be secured with two 1/2 inch stainless steel bolts. Bolts shall be self-retaining and shall withstand a minimum of 70 ft-lbs. torque and shall have a minimum 750 lbs. straight pull out strength. Nuts shall be floating and shall provide a minimum of 1/2 inch movement from the center of the nut. Covers shall be skid resistant, minimum 0.5 coefficient of friction. Covers shall be interchangeable between manufacturers and shall conform to the dimensions shown herein. Unless otherwise approved by the Engineer, cover shall be legibly imprinted with the following words in minimum 1 inch letters:
    - Ground Boxes containing wiring for traffic signals shall be labeled, Danger High Voltage Traffic Signal.
    - Ground boxes containing wiring for illumination systems shall be labeled, Danger High Voltage Illumination.
    - Ground boxes containing wiring for traffic management systems shall be labeled, Danger High Voltage Traffic Management.
    - Ground boxes containing wiring for sign illumination systems shall be labeled, Danger High Voltage Sign Illumination.
    - Ground boxes containing wiring for traffic signals that also contain illumination, powered by the signal electrical service, shall be labeled, Danger High Voltage Traffic Signal.

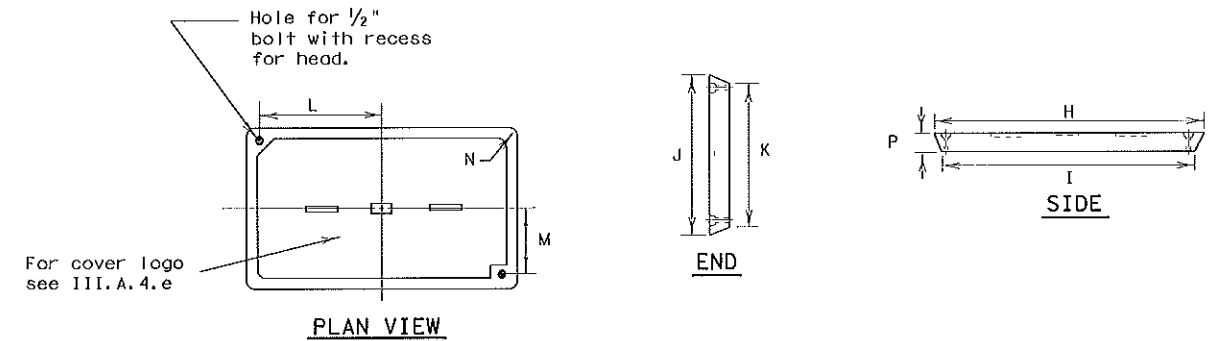
B. CONSTRUCTION METHODS

- Ground boxes shall be set on a 9 inch (minimum) bed of aggregate from 3/4 " up to 2" in size. Aggregate shall be in place prior to setting box and conduits shall be capped. Any gravel or dirt in conduit shall be removed.
- When required by item descriptive code, construction of an apron encasing a ground box including concrete and reinforcing steel shall not be paid for directly but shall be subsidiary to the ground box. Reinforcing steel may be field bent. Concrete for aprons shall be considered miscellaneous concrete for testing purposes. Aprons shall be cast in place.
- Conduit holes may be cut in the walls of type B & D boxes at least 18 inches beneath the cover.
- If, within the limits of this project, the Contractor must utilize an existing ground box equipped with a metal cover, the Contractor shall bond the cover to the grounding conductor with a 3 foot long flexible stranded jumper the same size as the grounding conductor. Connection of bonding jumper to metal ground cover shall not be paid for directly but shall be subsidiary to various bid items. The box(es) must be clearly shown on the plans with plan notes fully describing the work required.
- If there are other ground boxes with metal covers within the project limits but not involved in the contract, the Engineer may direct the Contractor to ground the covers, designating and identifying the specific boxes in writing. This work will be paid for separately.
- Termination to metal ground box covers shall be made using a tank ground type lug.



APRON FOR GROUND BOXES  
(Where required)

- Final position of end of conduit shall not exceed one-half the distance to the side of box opposite the conduit entry.
- Place gravel "under" the box, not "in" the box. Gravel should not encroach on the interior volume of the box.
- Install bushing on the upper end of all ells.
- Where a ground rod is present in the ground box, connect it to any and all equipment grounding conductors using a listed connector.
- Maintain sufficient space between all conduits so as to allow for proper installation of bushings.
- All conduits shall be installed in a neat and workmanlike manner.
- All conduits installed in the ground box shall be sealed after completion of conductor installation and any required pull tests. Silicone shall not be used as sealant.



GROUND BOX COVER

GROUND BOX COVER DIMENSIONS								
BOX	DIMENSIONS (INCHES)							
SIZE	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 5/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2

STANDARD PLANS  
TEXAS DEPARTMENT OF TRANSPORTATION  
Traffic Operations Division

ELECTRICAL DETAILS-  
GROUND BOXES

ED(3)-03

5/03 Revision	© TxDOT January 1992	DESIGN: KB	EXT: JW	CHK: DN	APP: GC	REV. NO.:	
Revised notes.	REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT			SHEET
	4-98	18	6				TS22
	12-00			COUNTY	CONTROL	SECTION	JOB
	3-03			DALLAS			VITRUVIAN
	5-03						

**ELECTRICAL SERVICES NOTES**

All work, materials, services, and incidentals, whether or not specifically shown on the plans, which may be necessary for a complete and proper electrical service installation as specified in the plans to obtain electrical power shall be paid for, performed, furnished and installed by the Contractor. The Contractor shall contact the Utility for metering and shall comply with all Utility requirements.

Primary line extensions, connection charges, meter charges, and other charges by the Utility company to provide power to the location shown, when required, shall be paid for under force account work. The costs associated with these charges shall be approved by the Engineer prior to engaging the Utility company to do the work. The Contractor shall consult with the appropriate Utility to determine costs and requirements, and shall coordinate the Utility's work as approved by the Engineer. The Contractor shall be reimbursed only the amount billed by the Utility. No additional amount for supervision of the Utility's work will be paid.

Materials shall be new and unused, materials and installation shall comply with the applicable provisions of the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards and shall be Underwriters Laboratories (UL) Listed. Electrical Service conduits, conductors, disconnects, contactors, circuit breaker panel sizes, and branch circuit breakers, shall be as shown in the Electrical Service Data elsewhere in the plans. Faulty fabrication or poor workmanship in any material, equipment, or installation shall be justification for rejection.

The Contractor shall submit for approval no less than six (6) copies of catalog cut sheets on electrical service materials. Submittals shall be legible and shall be marked to indicate which product on a cut-sheet is to be supplied. Where manufacturers provide warranties and guarantees as a customary trade practice, Contractor shall furnish to the State such warranties or guarantees.

The Contractor shall provide locks keyed with Master #2195 for all lockable electrical enclosures. Keys and locks become property of the State. Unless otherwise approved by the Engineer, enclosures shall not be energized until locks are provided and all bolts are installed. Circuit directories, where provided, shall be filled out. All breakers and components in shop built panels and enclosures shall be labeled with duo-colored plastic labels. Letters shall be a minimum 3/8" in height.

Enclosures with external disconnects that de-energize all equipment inside the enclosure, need not have dead front trim, except that incoming line terminations shall be protected from incidental contact.

When galvanized is specified for nuts, screws, bolts or miscellaneous hardware, stainless steel may be used. All wiring and components shall be rated for 75 degrees C. Minimum size for service entrance conductors shall be #6 XHHW.

I. Safety Switch. A safety switch, placed ahead of the meter, shall only be used when specified by the Utility and when shown on the Electrical Service Data. The switch shall be UL Listed, heavy duty type, 600 volt, un fused, with a UL type 3R enclosure and equipped with a solid neutral (s/n) assembly. The switch shall be padlockable in the "on" position.

II. Service Type. Electrical service types A, C, D, and T shall be as schematically detailed on ED(4) or ED(5). Other service types shall be as detailed elsewhere on the plans.

III. Branch Circuit Breakers. Circuit breakers shall be thermal magnetic and have a minimum interrupting capacity of 10,000 amps and a voltage rating compatible with their use. Circuit breakers shall be sized as shown in the electrical service data. Circuit breakers in panelboards and load centers shall be full size and designed exclusively for the panelboard or load center in use. Tandem and half-width breakers shall not be used. All circuit breakers shall be permanently and clearly marked identifying the circuit or device supplied. Circuit breakers shall be UL Listed to UL489.

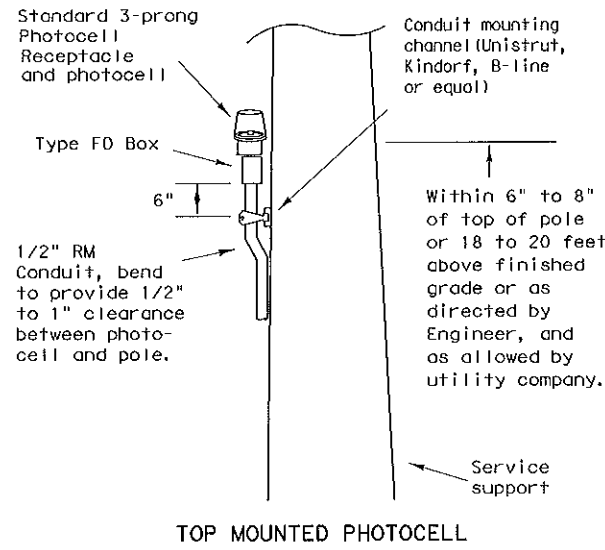
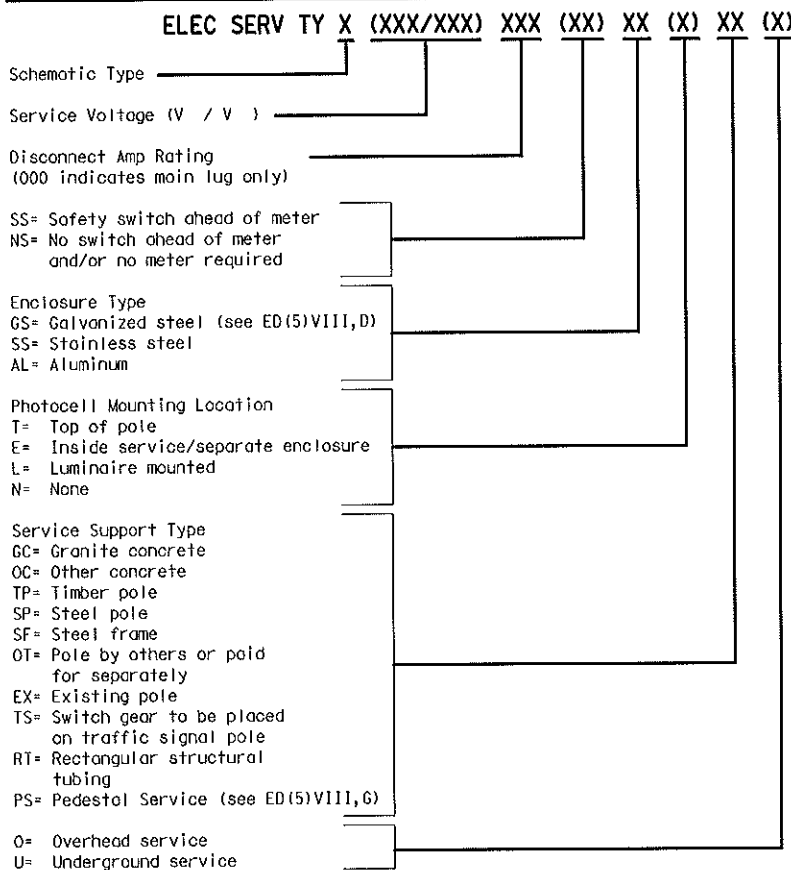
IV. Circuit Breaker Panelboard. Panelboards shall be UL Listed. Panelboards shall have copper busses, a minimum of 6 one-pole spaces or as required in the electrical service data, and when required will be rated for service equipment. Enclosure shall meet or exceed UL type 3R classification. Panelboards shall have a threaded hub conduit entry for conduit entering the top of the enclosure. Circuit breakers shall be bolt-in type only.

V. Circuit Breaker Load Center. Load centers shall be UL Listed. Load centers for type T services may have copper or aluminum busses, all other load centers will be copper bus only. Load center will have a minimum of 4 one-pole spaces, and shall be rated for service equipment. Enclosure shall meet UL type 3R classification. Load centers shall have a threaded hub conduit entry for conduit entering the top of the enclosure. Circuit breakers shall be plug-in type only. Load centers for type T services shall accommodate a maximum of 6 one-pole breakers.

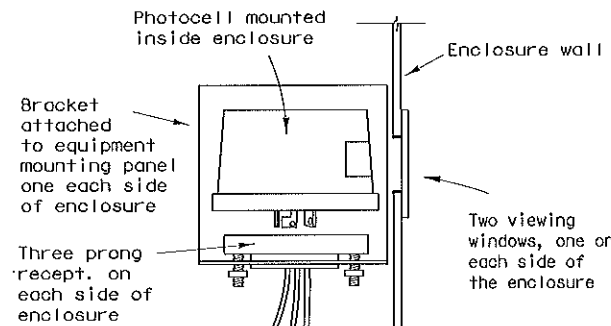
VI. Separate or Auxiliary Enclosure. Separate enclosures for HOA, photocell and lighting contactors for types D & T Services shall be a UL Listed assembly with outer door. Interior shall have dead front trim. HOA switch operator shall extend through the dead front trim. Photocell shall be mounted inside the enclosure as described in paragraph XIII when required by descriptive code. Separate enclosures shall meet the construction requirements of paragraph VIII, E, except that separate enclosure shall not have external operating handle, need not have a data pocket and door may latch at only one point. All equipment may be located in one enclosure instead of two, when approved by the Engineer.

VII. Where a Type D or T service is provided, laminated "as built" drawings are required as shown on ED(5) VIII E; shall be delivered before completion of the work, to the Engineer in lieu of placement within these smaller enclosures. Conduit may not enter the back wall of a service enclosure penetrating the equipment mounting panel. Provide grounding bushings on all metal conduits, terminate bonding jumper to grounding bus. Grounding bushing is not required when the end of the metal conduit is fitted with a conduit sealing hub or threaded boss such as a meter base.

**EXPLANATION OF ELECTRICAL SERVICE DESCRIPTIVE CODE**

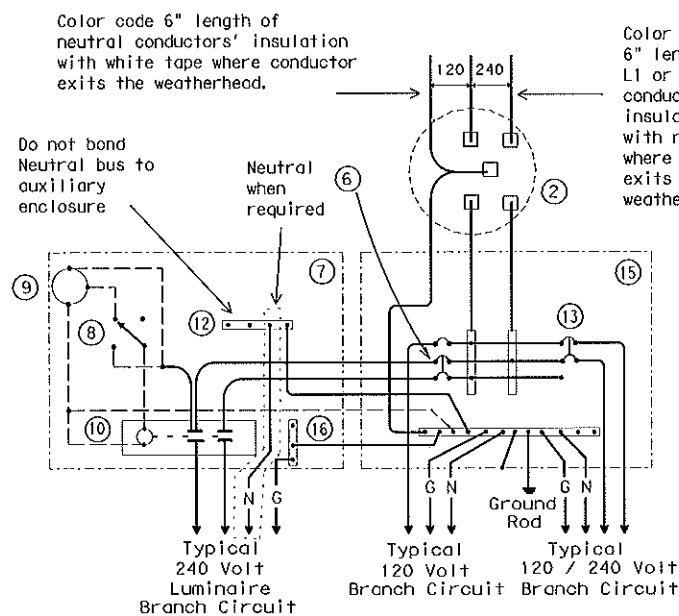


Conduit support spacing 3 feet from enclosure; 5 feet max.



**ENCLOSURE MOUNTED PHOTOCELL**

For photocell specifications see ED(5), XIII.



**SCHEMATIC TYPE T**  
**120/240 VOLTS - THREE WIRE**

Install photocell and lighting contactor when shown on Electrical Service Data.

**SCHEMATIC LEGEND**

- 1 - omitted
  - 2 - Meter (when required)
  - 3 - Service Assembly Enclosure
  - 4 - Main Disconnect Breaker (Not Used)
  - 5 - Omit
  - 6 - Circuit Breaker, 15 Amp typical for control circuit wiring
  - 7 - Auxiliary Enclosure
  - 8 - Control Station ("H-O-A" Switch)
  - 9 - Photo Electric Control (enclosure-mounted shown)
  - 10 - Lighting Contactor
  - 11 - Power Distribution Terminal Blocks (Not Used)
  - 12 - Neutral Bus required when 120 v. lights are controlled by lighting contactor
  - 13 - Branch Circuit Breaker (See Electrical Service Data)
  - 14 - Circuit Breaker Panelboard (Not Used)
  - 15 - Load Center
  - 16 - Ground Bus
- Power Wiring  
- - - Control Wiring  
— N — Neutral Conductor (when required to serve 120 v. loads only)  
— G — Equipment grounding conductor-always required

Cut top of pole to enhance run off when required by serving utility

Point of attachment to be below weatherhead

Provide FD j-box, and 1/2" to 1" clearance from pole to photocell

Pole brand must be 5 feet or less above grade.

Bushing or Bell

6" typ. Embedment

Upper end of ground rod to be 2" to 4" below finished grade

**TIMBER POLE NOTES**

1. Conduit and electrical conductors attached to the electrical service pole and underground within 12 inches of service pole shall not be paid for directly but shall be subsidiary to the service pole.
2. Pole top mounted photocell, install on north side of pole or in service enclosure as required. See Electrical Service Data.
3. Attach meter and service equipment with stainless steel or galvanized channel (Unistrut, Kindorf, or equal). Gain pole as required to provide flat surfaces for each strut. Paint ends of galvanized channel with zinc rich paint. Gain depth 5/8" max. Gain height 1 7/8" max. Strut to be 1" max. deep, and 1 5/8" wide max. Secure each strut section to timber pole with two galvanized or SS lag bolts, 1/4" diameter min. by 1 1/2" length min. Place flat cut galvanized or SS washer on each lag bolt. Gain pole in a neat and workmanlike manner.
4. Embedment depth shall be as required in Item 627 Treated Timber Poles.
5. Poles trimmed for excess length shall be trimmed from the top end only.

- 1 - Class 5 pole, height as required
- 2 - Service drop from utility company (attached below weatherhead)
- 3 - Service conduit and service entrance conductors(RMC) (See Electrical Service Data)
- 4 - Safety switch (when required)
- 5 - Meter (when required)
- 6 - Service enclosure
- 7 - No. 6 bare grounding electrode conductor in 1/2" PVC to ground rod - extend 1/2" PVC 6" underground.
- 8 - 5/8" x 8' Copper clad ground rod - drive ground rod completely underground unless otherwise approved by the Engineer.
- 9 - RM conduit - same size as branch circuit conduit.
- 10 - Photocell and conduit - if top mounted. (See Electrical Service Data)
- 11 - When required by the serving utility provide bare #6 awg copper conductor. Run wire from pole top to butt wrap or copper butt plate. Protect conductor to a height of 8 ft above finish grade.

**LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)**

- (If applicable)
- Liquidtight flexible metal conduit, may be used when meter and service enclosure are mounted 90 to 180 degrees to each other. Size shall be same as service entrance conduit.
  - LFMC shall not exceed 3 ft. and shall be securely supported within one ft. of each end. No strap required for LFMC shorter than 12"
  - Each end of LFMC must have a grounding bushing or be terminated with a grounding fitting.
  - A neutral conductor must be installed within the LFMC.
  - Bend in liquidtight flexible metal conduit shall not exceed 180 degrees.
  - A pull test is required on all installed conductors, at least six inches of free conductor movement shall be demonstrated to the satisfaction of the Engineer.

**SERVICE SUPPORT TYPE TP (O)**

(timber pole, overhead service, typical arrangement)

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TEXAS DEPARTMENT OF TRANSPORTATION  
Traffic Operations Division

**ELECTRICAL DETAILS-  
SERVICE SCHEMATICS AND  
SUPPORT-TYPE TP (OVERHEAD)**

ED(4)-03

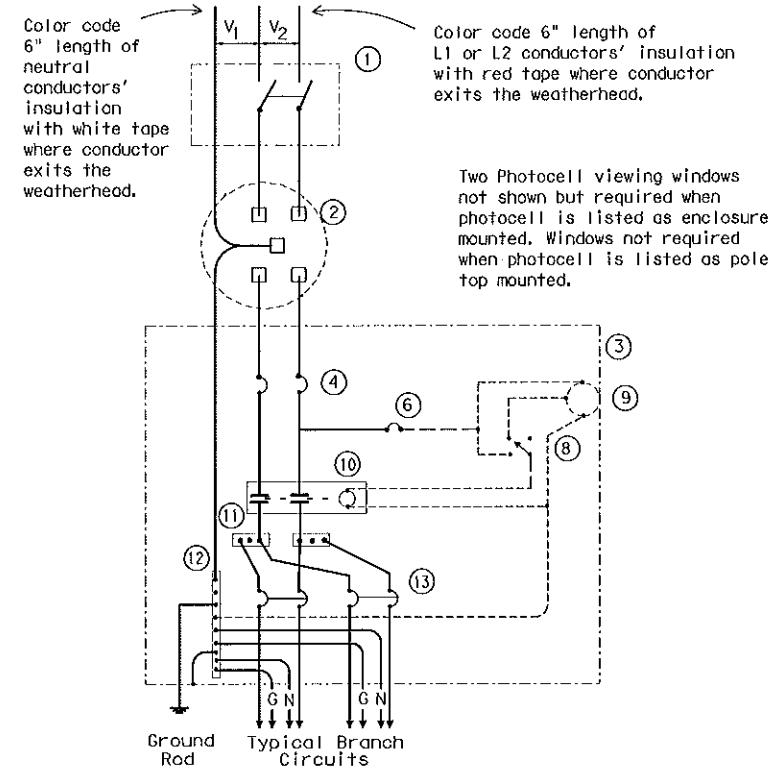
© TxDOT April 1998	REVISED	DATE	BY	CHKD	APP'D	PROJECT	SHEET
12-00	18	6				FEDERAL AID PROJECT	TS23
3-03						COUNTY	SECTION
						DALLAS	VITRUVIAN

SERVICE ENCLOSURE NOTES

- VIII. Service Assembly Enclosures. All service assemblies and enclosures shall be UL Listed for the intended purpose.
- Shop built or shop assembled service assemblies (all types except Type T and Type D without lighting contactor or enclosure mounted photo cell) and all auxiliary equipment enclosures mounted with service equipment and paid for as part of Item 628, "Electrical Services", shall be built or assembled by a UL Listed Industrial Control Panel shop and shall have a unique serial numbered UL Label with the words "LISTED ENCLOSED INDUSTRIAL CONTROL PANEL". The same or an additional label shall have the name, location, and phone number of the shop, the UL file number of the shop, the shop order or drawing number, date of manufacture or assembly, and the line voltage. The service assembly enclosure shall also be labeled "SUITABLE ONLY FOR USE AS SERVICE EQUIPMENT".
  - Conduit entries into the top of enclosures shall have threaded hub. Conduit entries through the equipment mounting back plate will not be allowed.
  - All service enclosure front doors shall be permanently labeled "DANGER HIGH VOLTAGE". Label shall be a self sticking type, intended for outdoor installation. Lettering style, layout and colors of red, black and white shall be as required by OSHA. Label letters shall be 1 to 1 1/2 inches high or as high as the enclosure door width will permit for smaller services. Separate or auxiliary lighting enclosures need not be OSHA labeled when mounted in the same viewing plane as the service enclosure front door. Where only one type of load is served by the service, the service door shall be marked using duo-colored plastic labels or self adhesive vinyl weather resistant labels, minimum of 1 inch high, applied in a neat and workmanlike manner. On the label will be the service number shown on the plans as well as identifying the load served specifically (i.e. lighting, landscaping, signals, traffic management or other wording as directed by the Engineer). Safety switches need not be OSHA labeled unless specifically required by the serving utility.
  - Type GS enclosures will only be allowed for service Types D and T without an enclosure mounted photocell and/or lighting contactor and the Type C panelboard. This spec will allow an "off the shelf" product meeting these specifications to be used. Type GS enclosures shall be made from pre-galvanized steel sheeting, hot dipped galvanized steel, or powder coat painted steel unless shown differently on the plans. Steel enclosures shall be painted inside and outside; galvanized enclosures may be painted. Unless otherwise approved by the Engineer, painted enclosures shall be gray, beige, white or light green. Panelboard/loadcenter enclosures shall meet UL type 3R requirements, shall have a dead front trim, and an outer padlockable door preventing unauthorized persons from operating contained equipment. Galvanized steel is no longer allowed for Types A, C, or custom-built D or T enclosures. If GS is shown in the descriptive code for any of these, an AL shall be provided.
  - Type AL enclosures for service Types A and C shall meet UL type 3R requirements and shall also meet additional requirements of this paragraph. The enclosure shall have both a main disconnect remote operator handle and a door latch handle. Die-cast handles are not acceptable. The main disconnect remote operator shall be flange-mounted, shall interlock the door when in the "on" position, and shall be padlockable in both the "on" or "off" positions. Door latch shall latch at two or more points, operate by a handle separate from disconnect switch and be capable of being locked. Door closure clamps will not be allowed. Lock must be keyed to Master #2195. All the enclosures shall have either a continuous stainless steel piano hinge with stainless steel pin or enclosures less than 30 inches may have two heavy duty hinges, those over 30 inches must have three. Heavy duty two and three point hinges shall have a 0.185 inch minimum diameter electro-zinc plated steel pin or a stainless steel pin. Two point hinged doors shall be rated for 56 lbs of loading. Three point hinged doors shall be rated for 70 lbs of loading. The door shall have an attached data pocket constructed of either thermoplastic or metal. Pocket shall be 12" x 12", unless that size will not fit in enclosure. The pocket shall then be as large as possible, as approved by the Engineer, and mechanically attached with stainless steel nuts and bolts, or stainless steel or aluminum rivets. Enclosure shall include an equipment mounting panel installed inside the enclosure on collar studs or topped bosses, and constructed of a minimum 12 gauge galvanized steel. Equipment mounting panels shall not be painted. Enclosure shall have factory installed external mounting feet. Enclosure door shall be capable of opening at least 130 degrees, with arm or other approved means to hold the door open. Only the enclosure exterior will be primed and painted. Paint color shall be beige or gray and shall be powder coat paint as shown below. Condensation drainage shall be provided in the bottom of the enclosure before leaving the factory. The Contractor shall prepare and submit a schematic drawing unique to an individual service. The approved drawing shall be laminated and placed in the document pocket of the service at the time of shipment to the job site. All applicable wiring diagrams and plan sheet layouts for all equipment and branch breaker circuits supplied by that service shall also be laminated and placed in the document pocket prior to shipping. Type AL enclosures for Type D and T services with enclosure mounted photocell and/or lighting contactor shall have the loadcenter interior mounted in an enclosure with properly adapted dead front trim. Types D and T shall not have a loadcenter exterior "can" mounted inside another enclosure meeting these specifications. (Do not put one enclosure inside another enclosure). Types D and T with enclosure mounted photocell and/or lighting contactor shall meet the additional requirements of this paragraph except that remote-operating handle will not be provided.
  - Type SS enclosures for Type A and C shall meet all the requirements above for their respective type AL. Type SS enclosures for D and T shall meet all the requirements above for their respective type AL. Stainless Steel shall not be painted.
  - PS enclosure shall be as detailed and specified on ED(8). Galvanized steel will not be allowed for any pedestal service. If GS is shown in the descriptive code an AL will be provided.
- Powder Coat Paint. Powder coating shall be either a polyester thermosetting resin, a zinc rich primer with a TGIC (triglycidyl isocyanurate) powder overcoating, or a zinc-rich epoxy powder, applied by either electrostatic spray or fluidized bed immersion, high temperature oven cured, high density, low gloss, 4 mil thick (minimum), coating. Adhesion shall meet the 5A or 5B classifications of ASTM D3359. Finish shall be uniform in appearance and free of scratches.
  - Main Disconnect. Main disconnect device shall be a circuit breaker, as specified in the Electrical Service Data, shall be two or three pole, and rated for the voltage and amperage specified. Circuit breaker shall be an UL Listed thermal-magnetic circuit breaker controlled by flange-mounted remote operator in the service assembly enclosure when required. Circuit breakers shall have a minimum interrupting rating of 10,000 Amps. When the utility company provides a transformer larger than 50 KVA, Contractor shall verify that the available fault current is less than the circuit breaker amps interrupting capacity (AIC) rating and shall provide documentation from the Utility to the Engineer. Documentation shall be submitted at the same time as other electrical submittals. Circuit breaker shall be UL Listed to UL489. No backed breakers will be allowed for use as a main disconnect.
  - Control Circuit. Control circuit protection shall be 15 amp circuit breaker.
  - Control Station ("H-O-A" Switch). Control station shall be a maintained-contact, three position selector switch in an UL type enclosure. Switch shall be rated 600 volts and shall be fitted with "Hand-Off-Auto" legend.
  - Photo Electric Control. Photo electric control shall consist of a photocell, internal lightning arrester, and relay or bimetallic switch mounted inside a weatherproof enclosure with standard 3-prong twist lock photocell plug and receptacle. The enclosure shall be made of poly-acrylic with clear acrylic window. Enclosure chassis shall be molded thermosetting plastic. The photocell shall have a polyethylene gasket, and shall have a hermetically sealed cadmium sulfide cell. The arrester shall have an enclosed type expulsion arrester rated 2.0 kV sparkover with 5,000 amps follow-through. Relay or switch shall be time delay type with normally closed contacts. Photo electric control shall be rated a minimum of 1800 VA, voltage as required. Enclosure mounted photocells shall be the same as above except that the photocell shall be mounted inside the enclosure. The enclosure shall have two acrylic panned windows, or other material approved by the Engineer, one on each side of the enclosure. Each window shall be rectangular approximately one inch by two inches, round 2 inch diameter, or as otherwise approved by the Engineer. Bracket and photocell's receptacle will be mounted inside enclosure next to each window. Except for window side, 2" of clearance is required on all sides of photocell for ease of replacement. The photocell's receptacle is held in place by two mounting screws on a bracket and located next to each window of the enclosure. The 3-prong twist lock photocell shall be mounted in a position to receive light from the window closest to the photocell. The photocell shall be mounted in a position to receive light from one window. Top of pole mounted photocells shall be mounted as shown on ED(4). The Contractor shall be responsible for proper operation of the photo-electric control. The Contractor shall move and/or adjust or shield the photocell from stray or ambient nighttime light or shall make any other adjustments required for proper operation. The photocell shall face North when practicable. Unless otherwise shown on the plans, the photocell shall turn on the illumination system at 1.0 +/- 0.5 footcandle and turn off the illumination system at two footcandles higher than turn on.
  - Lighting Contactor. Lighting contactor shall be a UL Listed NEMA rated lighting contactor, two-pole or multipole as required, electrically held type designed to control high pressure sodium lighting loads, with silver alloy double break contacts rated at 240 volts, 480 volts or 600 volts as required. Lighting contactor shall not be the DIN rail mounted type.
  - Power Distribution Terminal Blocks. Power distribution terminal blocks shall be rated for 600 volts and shall be used for line side connections to branch circuit breakers where more than one circuit breaker is required. Lugs on blocks shall be properly sized for conductors being used. Only one conductor should be placed under each lug.
  - Neutral/Ground Bus. Neutral/ground bus shall be a factory made bus permanently bonded to the enclosure with properly sized lugs for grounding and neutral conductors.

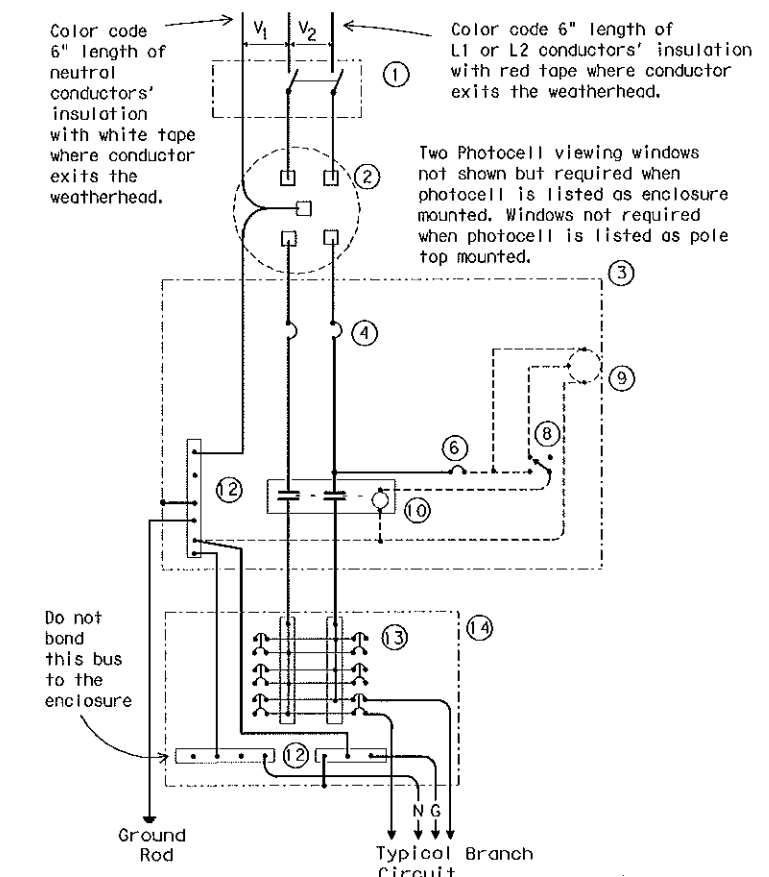
SCHMATIC LEGEND

- |   |   |
|---|---|
| 1 - Safety Switch (when required)                         | 12 - Neutral/Ground Bus   |
| 2 - Meter (when required)                                 | 13 - Branch Circuit Breaker (See Electrical Service Data)   |
| 3 - Service Assembly Enclosure                            | 14 - Circuit Breaker Panelboard (See Electrical Service Data)   |
| 4 - Main Disconnect Breaker (See Electrical Service Data) | (If Type C is shown as AL or SS on descriptive code, this is the service assembly enclosure only. Panelboard enclosure is GS unless otherwise noted.) |
| 5 - Omit  | 15 - Load Center  |
| 6 - Circuit Breaker, 15Amp                                |   |
| 7 - Auxiliary Enclosure                                   |   |
| 8 - Control Station ("H-O-A" Switch)                      | ----- Power Wiring  |
| 9 - Photo Electric Control (enclosure-mounted shown)      | ----- Control Wiring  |
| 10 - Lighting Contactor                                   | — N — Neutral Conductor (when required) serve 120 v. loads only)  |
| 11 - Power Distribution Terminal Blocks                   | — G — Equipment grounding conductor-always required   |



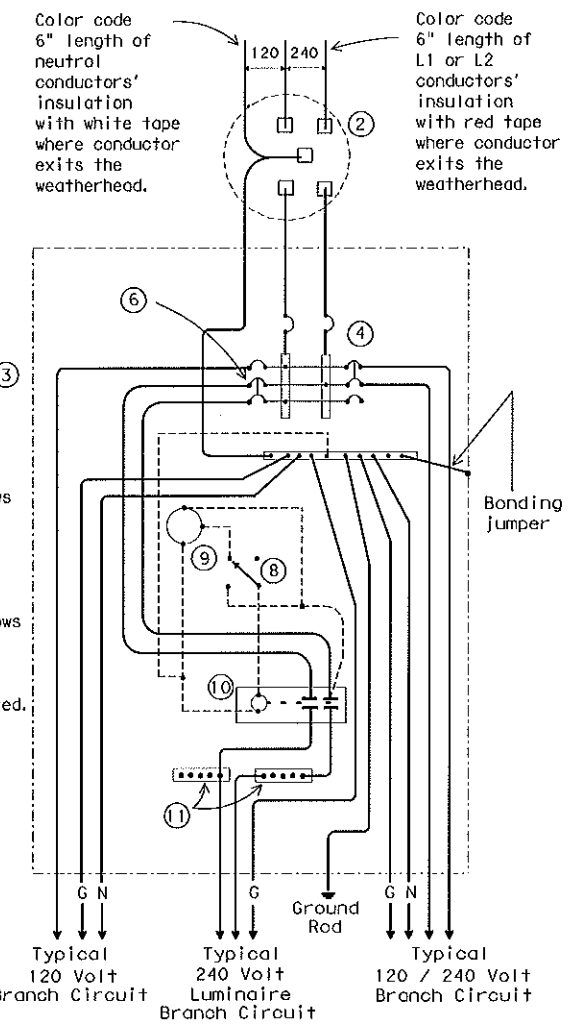
SCHEMATIC TYPE A  
THREE WIRE

Maximum feeder circuit size (High Mast Poles):  
100 amps for two pole 480V, 125 amps for one or two pole 120V or 240V. Maximum branch circuit size: 50 amps.



SCHEMATIC TYPE C  
THREE WIRE

Maximum feeder circuit size (High Mast Poles):  
100 amps for two pole 480V, 125 amps for one or two pole 120V or 240V. Maximum branch circuit size: 50 amps.



SCHEMATIC TYPE D  
120/240 VOLTS - THREE WIRE

Install photocell and lighting contactor when shown on Electrical Service Data. See Type D service notes.

TYPE D SERVICE NOTES

Photocell and lighting contactor shall be located either in the same UL type 3R enclosure with load center or, if approved by Engineer, in separate enclosure. There shall be a window on each side of enclosure to allow operation of photocell. Both photocell contactor and breaker area shall have dead front trim. Enclosure, except for RT and PS supports, shall not exceed 36 inches in height or 16 inches in width unless approved by the Engineer. Ty D load center with lighting controls or Ty D separate lighting control enclosure shall have power distribution blocks for a minimum of 4, #8 conductors per phase.

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## ELECTRICAL DETAILS- SERVICE ENCLOSURE & NOTES

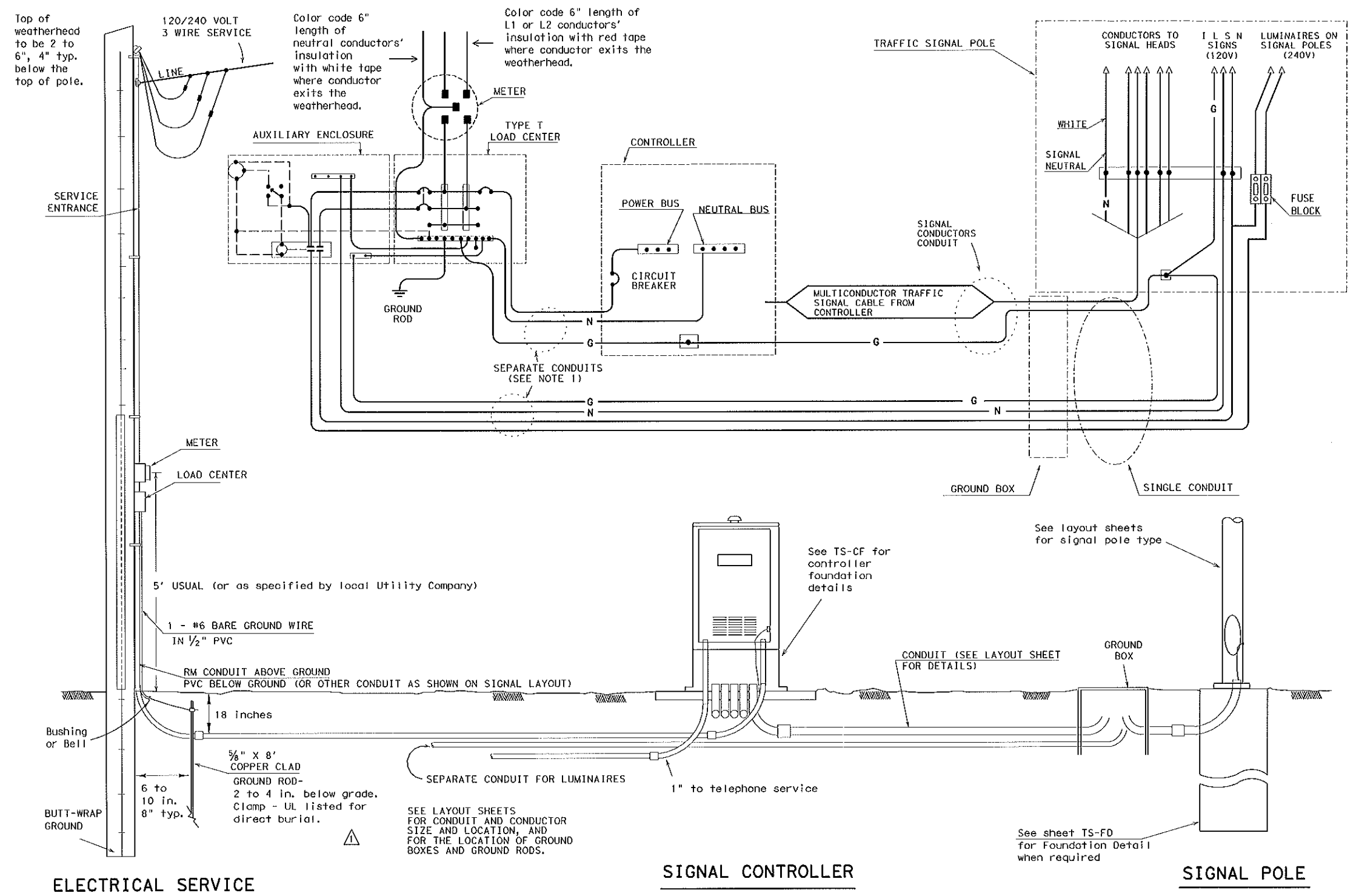
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© TxDOT April 1998	Dist: KB	Des: JW	Des: DN	Des: GC	Des: ML
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT		
12-00	18	6	SHEET		
3-03	COUNTY		CONTRACT	SECTION	JOB
DALLAS					HS244
					VITRUVIAN

71E

**NOTES:**

1. Luminaire conductors shall not be looped through controller cabinet.
2. Electrical system to include an equipment grounding conductor noted here as "G". All exposed metal parts are to be bonded to grounding conductor.
3. Photocell, when required, shall be mounted at top of pole or in enclosure as shown on ED(4) and ED(5) and as required by descriptive code.
4. Roadway lighting fixtures, when required, shall be in accordance with the material and construction methods of the Item, "Roadway Illumination Assemblies" except for the test period for proper operation of the luminaires. Installed roadway lighting luminaires and internally lighted street name signs shall be tested for proper operation as a part of the associated traffic signal system.
5. Internally lighted street name signs (ILSN), when required, shall be in accordance with the Item "Internally Lighted Street Name Signs". Because of the electrical isolation of ILSN hinges, a #12 green grounding conductor shall be run to the ILSN fixture.
6. Install ground rod at alternate location when directed by the Engineer. Maintain a minimum of 8 ft in contact with the earth.
7. Liquidtight flexible metal conduit (LFMC), may be used when meter and service enclosure are mounted 90 to 180 degrees to each other. LFMC shall be same size as service entrance conduit. LFMC shall not exceed 3 ft. and shall be securely supported within one foot of each end. No strap required for a LFMC shorter than 12". Each end of LFMC must have a grounding bushing or be terminated with a grounding fitting. A neutral conductor must be installed within the LFMC. Bend in liquidtight flexible metal conduit shall not exceed 180 degrees.
8. Minimum embedment depth as per Item 627 Treated Timber Poles.
9. Pole to be set plumb.
10. Back fill thoroughly tamped in 6 in. lifts. Place 6 inches additional backfill above grade around pole base to allow for settling, as per Item 627.
11. Excess pole length shall be trimmed from the top at a slope to aid water run off.
12. Gain pole two places for each meter, service, separate or auxiliary enclosure. See ED(4) for details.
13. All illumination and power conductors to be pull tested and megged. Do not meg traffic signal cable.
14. Enclosures are to be locked, and ground box covers are to be bolted before power is applied to the circuit.
15. Conduits entering top of enclosures to be fitted with conduit sealing hub or threaded boss, such as meter hub. Off-set nipple, when required, shall not be zinc-die-pressure cast. All metal conduits not connected to conduit sealing hub, or threaded boss must have a grounding bushing. Terminate bonding jumper to ground bus. All conduits entering enclosures shall be sealed. Silicone shall not be allowed.



**ELECTRICAL SERVICE**

(TYPE T TIMBER POLE SHOWN AS EXAMPLE, SEE ELECTRICAL DETAILS, LAYOUT SHEETS, AND ELECTRICAL SERVICE DATA SHEET FOR SERVICE REQUIRED AND FOR DETAILS.)

**SIGNAL CONTROLLER**

**SIGNAL POLE**

Unless shown elsewhere in the plans, electrical service data for Types D and T shall be as follows.

ELECTRICAL SERVICE DATA									
ELECTRICAL SERVICE DESCRIPTION (SEE ED(4))	SERVICE CONDUIT SIZE (RMC)	SERVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN DISCONNECT CKT. BRK. POLE/AMP	TWO-POLE CONTACTOR AMPS ***	PANELBD./LOADCENTER AMP RATING (MIN)	CIRCUIT NO.	BRANCH CKT. BRK. POLE/AMPS	KVA LOAD
TY D (120/240)070(NS)AL(E)**(*)	1/4	3/#4	N/A	2P/70	30	100	T.S. Lighting	1P/50 2P/15	<7.1
TY T (120/240)000(NS)GS(E)**(*)	1/4	3/#4	N/A	None	30	70	T.S. Lighting	1P/50 2P/15	<7.1

\*\*\* Eliminate photocell, contactor and separate enclosure if lighting, or internally lighted signs are not required by plans  
 \*\* See descriptive code in estimate for service support type.  
 \* See descriptive code in estimate for overhead or underground service.

STANDARD PLANS  
 TEXAS DEPARTMENT OF TRANSPORTATION  
 Traffic Operations Division

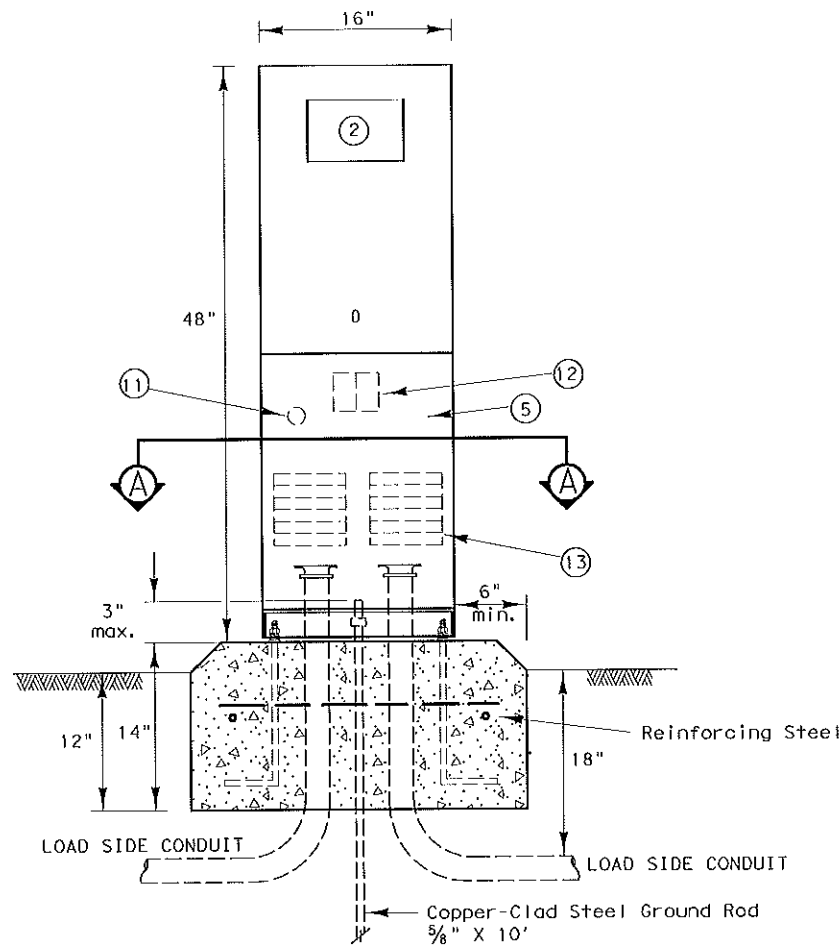
**ELECTRICAL DETAILS-TYPICAL TRAFFIC SIGNAL SYSTEM DETAILS**

ED(7)-03

5/03 Revision  
 Revised notes.

REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
4-98	18	6		TS25
12-00			COUNTY	SECTION
3-03			DALLAS	VITRUVIAN
5-03				

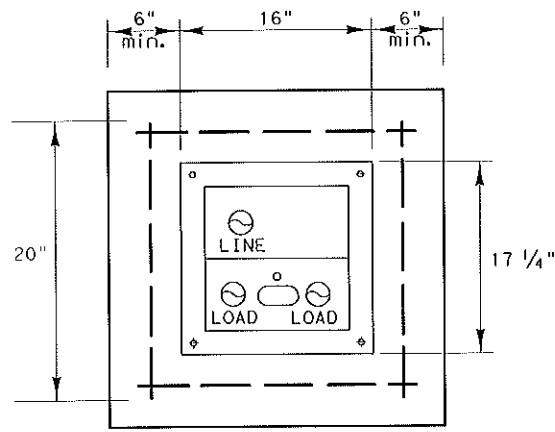
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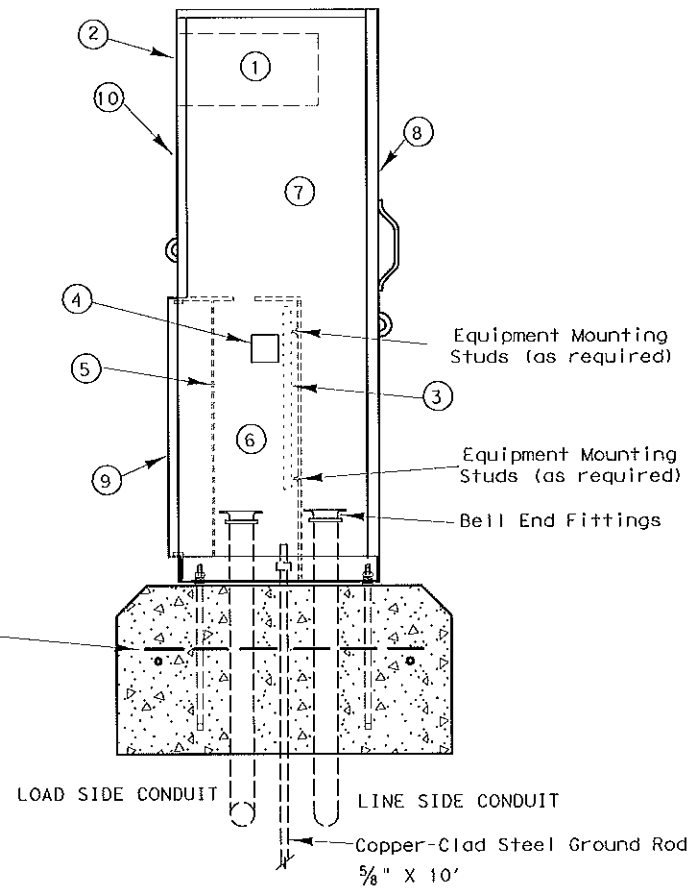
Note: Ells in foundation are rigid metal, size called for on the plans. Extension conduits from these ellis may be PVC, provided ends of rigid metal conduits are more than 2 in. below top of concrete foundation. Where extension conduits are metal, grounding bushing must be installed and a bonding jumper properly terminated.

**FRONT VIEW**

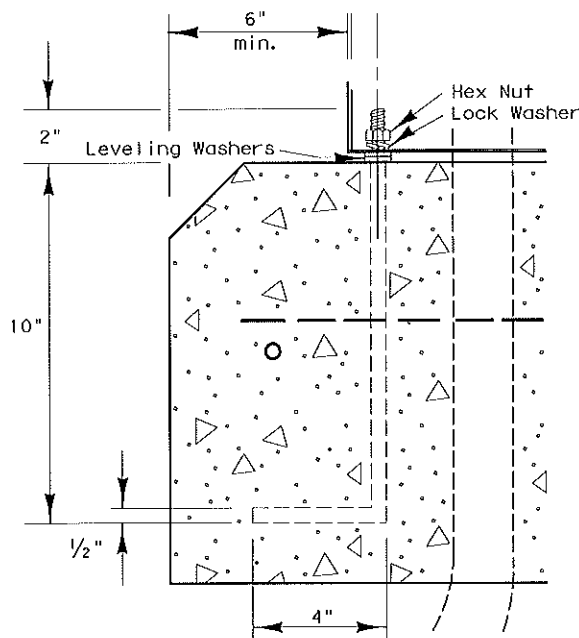
Ty C shown, Ty A similar except that Ty A shall have individual circuit breakers mounted on a equipment mounting panel. CB Handles shall protrude through hinged deadfront trim.



**SECTION A-A**



**SIDE VIEW**



**ANCHOR BOLT DETAIL**

**GENERAL NOTES**

- The pedestal service shall be UL type 3R, and shall be constructed of a minimum of 12 gauge stainless steel or aluminum as required by descriptive code. Stainless steel shall not be painted. For aluminum, the finish shall be an electrostatic applied polyurethane baked on powder, light green in color, or color as shown elsewhere and as approved by the Engineer. The front of the interior dead front trim shall be permanently labeled, "Danger High Voltage" with OSHA style label. The exterior of the pedestal service door shall be permanently labeled with a placard as to its use (i.e. Roadway Lighting, Traffic Signals, etc.). Placard shall be neat and professional in appearance. Lettering shall be 1" minimum height.
- Utility Access Door shall have stainless steel piano hinge and provisions for padlocking.
- Pedestal door shall have stainless steel piano hinge and stainless steel latch with provisions for padlocking.
- Meter Access shall be hinged and capable of padlocking.
- All mounting hardware and installation details of services shall be in accordance with utility company specifications. The Contractor is responsible for contacting the local utility company and obtaining their approval of pedestal details prior to making submittal to the Department and prior to constructing the electrical pedestal service. Any changes required by the utility company shall be noted on the submittals.
- Meter Socket shall be a minimum of 100 amp rating and shall comply with the local utility requirements.
- Photoelectric Control shall meet the requirements as shown on ED(5). Shield to control stray light is allowable. The Contractor shall be responsible for proper operation of the photo-electric control. The Contractor shall move and/or adjust or shield the photocell from stray or ambient nighttime light or shall make any other adjustments required for proper operation. The photocell shall face North when practicable. Unless otherwise shown on the plans, the photocell shall turn on the illumination system at 1.0 (+/-) 0.5 foot-candle and turn off the illumination system at two footcandles higher than turn on.
- The Control Station (H-O-A Switch) shall be as shown on ED(5) except that H-O-A Switch operating handle shall protrude through hinged deadfront trim and NEMA 1 enclosure will not be required.
- Concrete for pedestal service foundation shall be class A or C and shall be in accordance with Item 420, "CONCRETE STRUCTURES", except that concrete will not be paid for directly but shall be considered subsidiary to Item 62B, "ELECTRICAL SERVICES".
- Reinforcing steel shall be #4 rebar in accordance with Item 440, "REINFORCING STEEL".
- Anchor bolts shall be A36M55 in accordance with Item 449, "ANCHOR BOLTS". Anchor bolts shall be 1/2 inch x 12 inches x 4 inches (dia. x length x hook length).
- All conduit and conductors attached to the pedestal service and within 12 inches of the pedestal service will not be paid for directly, but shall be subsidiary to the pedestal service. All service conduit and conductors from the utility company transformer to a point 12 inches from the pedestal service shall be paid for separately. Service conduit shall be the size and type as shown in the Electrical Service Data.
- Dimensions may vary to accommodate required equipment, utility company requirements, or manufacturer's standard equipment dimensions. The Contractor shall submit to the Engineer for approval, six (6) copies of brochures and/or drawings of the pedestal service to be supplied, including actual dimensions, and a paint color sample.
- A separate enclosure as shown on ED(4) or ED(5) for photocell shall not be used for pedestal services. Photocell shall be installed as shown here.
- The pedestal door shall have a mechanically attached data pocket on the inside. Pocket shall be either metal or thermoplastic and shall measure at least 12 inches by 12 inches. The Contractor shall prepare and submit a schematic drawing unique to an individual service. The approved drawing shall be laminated and placed in the document pocket of the service at the time of shipment to the job site. All applicable wiring diagrams and plan sheet layouts for all equipment and branch breaker circuits supplied by that service shall also be laminated and placed in the document pocket prior to shipping.
- Ground rod clamp to be UL listed for direct burial. All non-conductive coating to be removed from ground rod at clamp location. Ground rod wire to be #6 AWG solid copper. Metal conduit ellis to have grounding bushing and bonding jumpers correctly installed.
- All conduits entering enclosures from underground must be sealed. Silicone shall not be allowed.
- All conductors shall be megged and pull tested. Traffic signal cable not to be megged after connection, as electronics will be damaged.
- Top of concrete foundation to be finished in a neat and workman like manner. If leveling washers are used, no more than 1/8 in. height shall be used at any one corner. Maximum dip or rise in foundation is not to exceed 1/8 in per foot. When properly installed, top of service enclosure shall read level front to back and side to side within 1/4 in. Racking or movement of the service enclosure shall be repaired by the contractor at no cost to the state.
- Liquidtight flexible metal conduit shall not be allowed on PS type services.

**LEGEND**

- METER SOCKET, (when required)
- METER SOCKET WINDOW, (when required)
- EQUIPMENT MOUNTING PANEL
- PHOTO ELECTRIC CONTROL WINDOW, (when required)
- HINGED DEADFRONT TRIM
- LOAD SIDE CONDUIT AREA
- LINE SIDE CONDUIT AREA
- UTILITY ACCESS DOOR, with handle
- PEDESTAL DOOR
- HINGED METER ACCESS
- CONTROL STATION (H-O-A Switch)
- MAIN DISCONNECT
- BRANCH CIRCUIT BREAKERS

5/03 Revision  
 Revised notes.

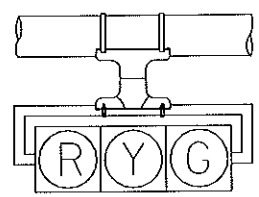
**STANDARD PLANS**  
**TEXAS DEPARTMENT OF TRANSPORTATION**  
*Traffic Operations Division*

**ELECTRICAL DETAILS**  
**ELECTRICAL SERVICE SUPPORT**  
**PEDESTAL SERVICE TYPE PS**

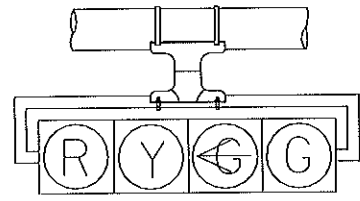
**ED(8)-03**

© TxDOT April 1998		DN: KB	CC: JW	CD: DN	CC: GC	REG NO.:
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT			SHEET
12-00	18	6				TS26
3-03			COUNTY	CONTROL	SECTION	JOB
5-03			DALLAS			VITRUVIAN

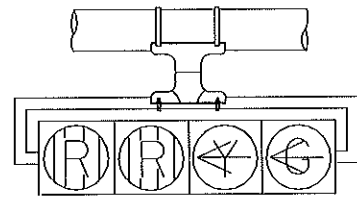
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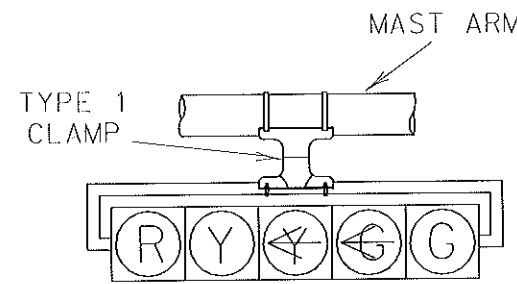
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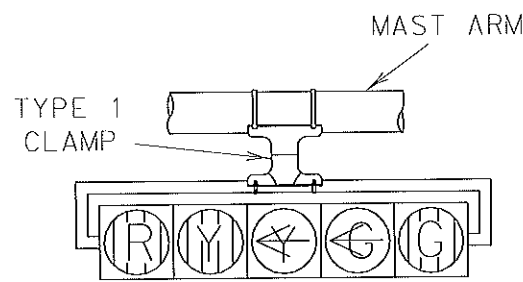
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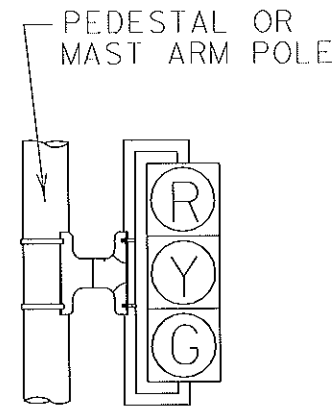
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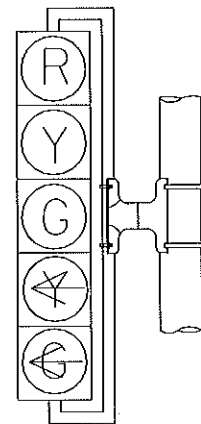
H5LT



H5LLT

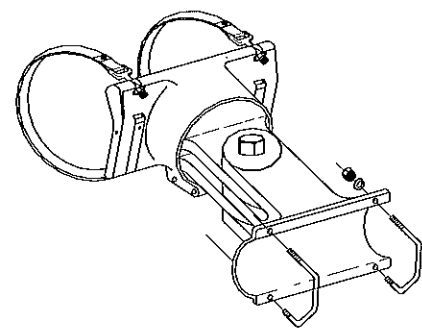


V3



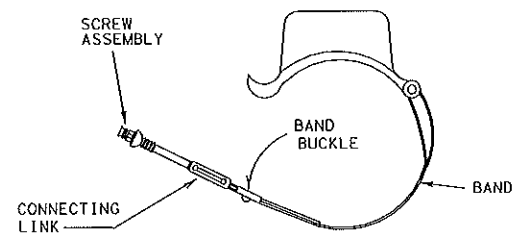
V5LT

NOTE:  
VERTICAL LOUVERS SHALL BE INSTALLED ON HORIZONTAL MOUNTED SIGNALS, HORIZONTAL LOUVERS SHALL BE INSTALLED ON VERTICAL MOUNTED SIGNAL WHEN NEEDED.



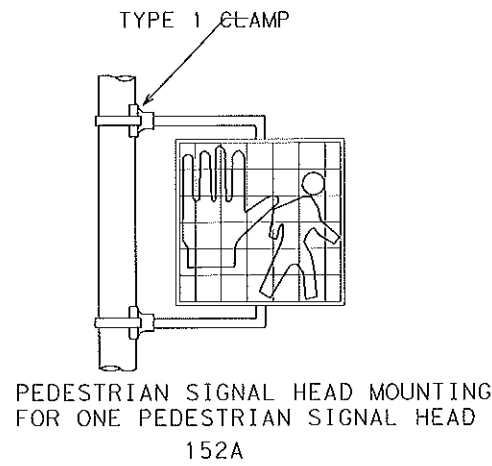
TYPE 2 CLAMP KIT

SHALL BE INSTALLED WHEN ROTATION ABOUT THE HORIZONTAL AND VERTICAL AXES ARE NEEDED.

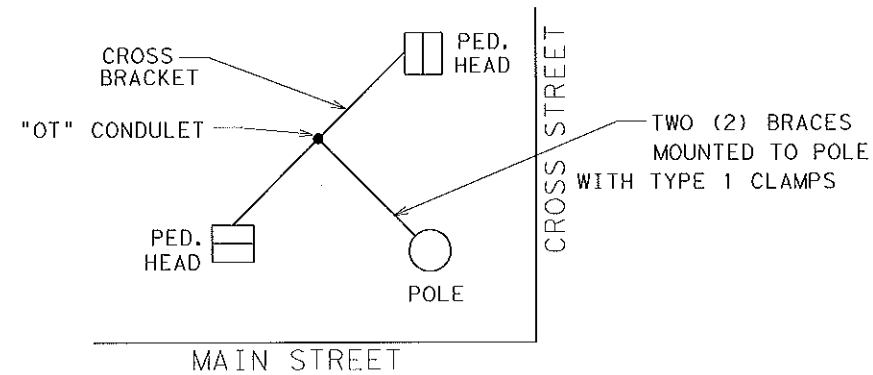


TYPE 1 CLAMP

NOTE:  
CLAM SHELL MOUNTING HARDWARE MAY BE USED INSTEAD OF MOUNTING HARDWARE SHOWN ABOVE, AS APPROVED BY THE ENGINEER. ICC P/N 4805 OR OR MCCAIN QUICKMOUNT OR APPROVED EQUAL.

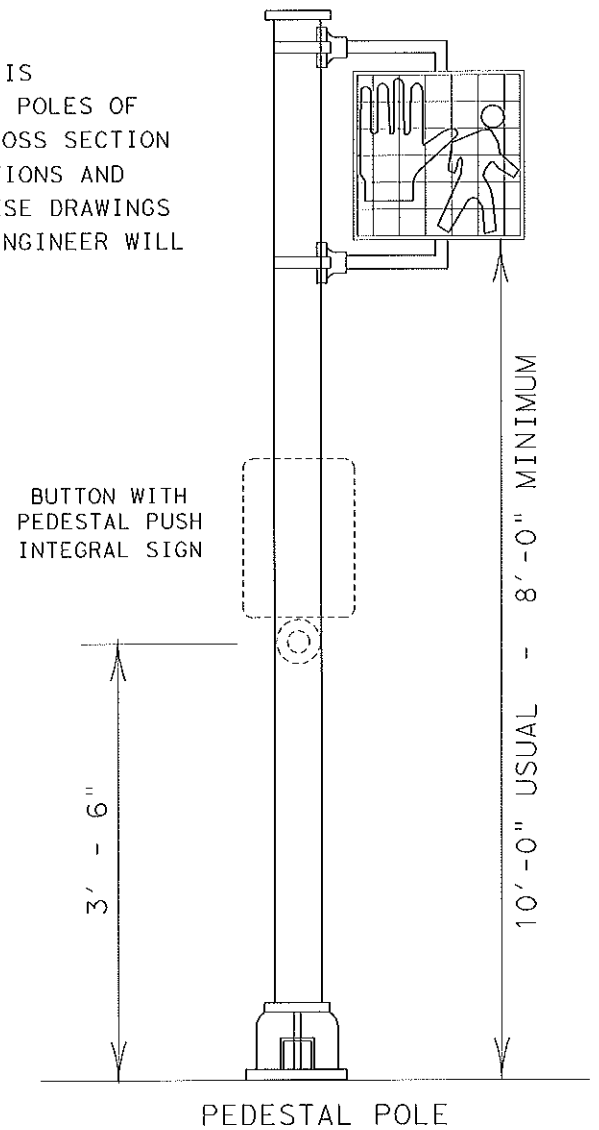


PEDESTRIAN SIGNAL HEAD MOUNTING FOR ONE PEDESTRIAN SIGNAL HEAD 152A



PEDESTRIAN SIGNAL HEAD MOUNTING FOR TWO PEDESTRIAN SIGNAL HEADS 143C

NOTE:  
THE POLE ON THIS DRAWING IS SHOWN AS AN EXAMPLE ONLY. POLES OF SIMILAR DESIGN FOR ANY CROSS SECTION WHICH MEET THE SPECIFICATIONS AND REQUIREMENTS SHOWN ON THESE DRAWINGS AND ARE APPROVED BY THE ENGINEER WILL BE DEEMED ACCEPTABLE.

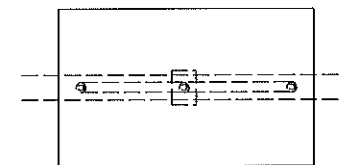


PEDESTAL POLE

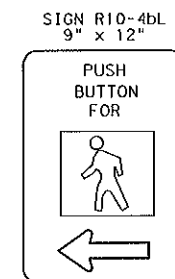


TYPE 1 CLAMP

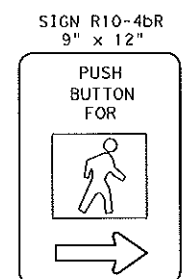
- \* ONE (1) CLAMP SHALL BE USED ON SIGNS LESS THAN OR EQUAL TO 10 FT IN LENGTH.
- \* TWO (2) CLAMPS SHALL BE USED ON SIGNS GREATER THAN 10 FT IN LENGTH.



SIGN OR DAMPENING DEVICE ATTACHMENT FOR MAST ARMS



PEDESTRIAN PUSHBUTTON SIGN DETAILS



PEDESTRIAN PUSHBUTTON SIGN DETAILS

NOTES:

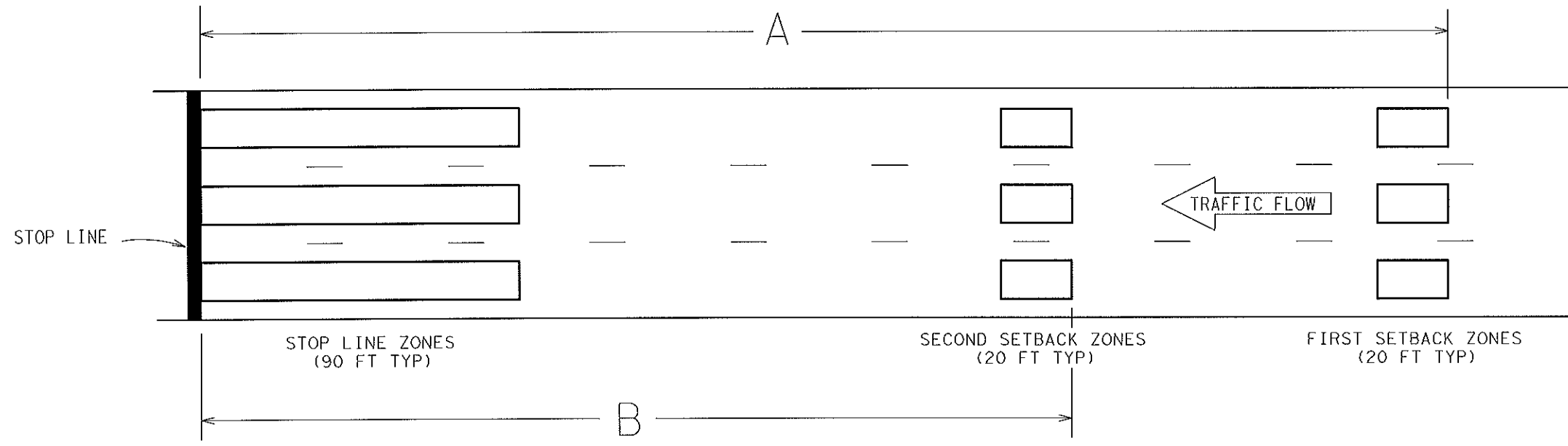
1. VEHICLE AND PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH TYPE 1 CLAMP AND APPROPRIATE TUBING.
2. ALL POLE MOUNTED VEHICLE AND PEDESTRIAN HEADS SHALL BE INSTALLED ON THE AWAY-FROM-TRAFFIC SIDE OF THE PEDESTAL OR MAST ARM POLE.
3. ALL DAMPING DEVICES SHALL BE 18" TO 24" WIDE BY 4 FT IN LENGTH.
4. ALL WIRING FOR PEDESTRIAN SIGNALS SHALL BE TOTALLY ENCLOSED WITHIN THE SIGNAL MOUNTING HAREWARE.
5. ALL PEDESTRIAN SIGNAL HEADS AND PUSH BUTTON SIGNS SHALL DISPLAY THE SYMBOLIZED MESSAGES SHOWN ABOVE.

ALTERNATIVE MOUNTING METHOD revised 12-92  
\* REVISED 3-7-97

TRAFFIC SIGNAL AND PEDESTRIAN HEAD IDENTIFICATION

© TXDOT  
DALLAS DISTRICT STANDARD

FED. RD. DIV. NO.	STATE PROJECT NO.	SHEET NO.
6		TS27
STATE	STATE DIST.	COUNTY
TEXAS	DALLAS	DALLAS
CONTR.	SECT.	JOB
		HIGHWAY NO.
VITRUVIAN		



APPROACH SPEED LIMIT (MPH)	DISTANCE <sup>2</sup> BETWEEN CAMERA AND STOP LINE (FT)	DISTANCE <sup>1</sup> A (FT)	CAMERA HEIGHT (FT)									
			24	28	32	36	40	24	28	32	36	40
			DISTANCE B (FT)					EXTENSION ON 2ND DET. ZONE (SEC.)				
60	80	470	280	295	305	310	315	0.0	0.0	0.0	0.5	0.5
	150	470	270	285	295	300	310	0.0	0.0	0.0	0.0	0.5
55	80	430	255	265	275	280	285	0.0	0.0	0.0	0.5	0.5
	150	430	245	255	265	275	280	0.0	0.0	0.0	0.0	0.5
50	80	390	235	245	250	255	260	0.0	0.0	0.5	0.5	0.5
	150	390	220	230	240	245	250	0.0	0.0	0.0	0.0	0.5
45	80	350	210	215	220	225	230	0.0	0.0	0.5	0.5	0.5
	150	350	190	200	210	215	220	0.0	0.0	0.0	0.0	0.5

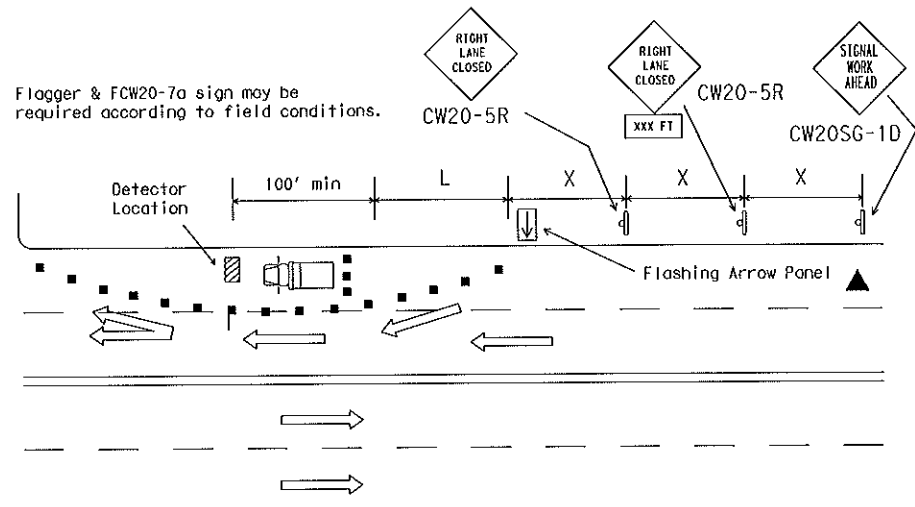
1. Distances shown are based on a 20' detection zone and a 1.0 second passage time setting.  
 2. Distance between the camera and the stop line, as measured parallel to the direction of travel.

DALLAS DISTRICT STANDARD



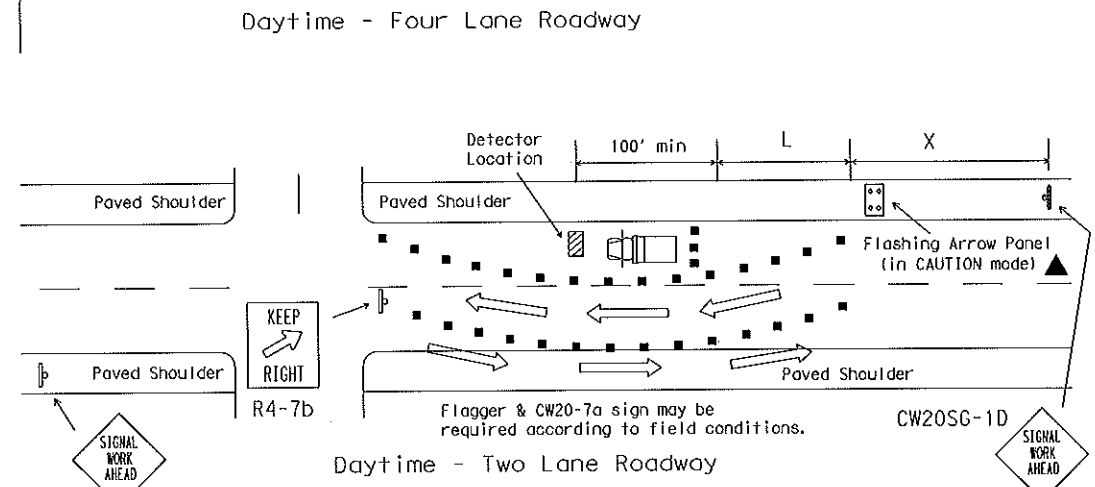
VIDEO DETECTION ZONE PLACEMENT  
 VDZ-04 (DAL)

© TxDOT September 2004	EN-THW	CO-CDB	DR-BES	CO-TRF-AUS.
REVISIONS	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
	6			VITRUV.
	STATE	DISTRICT	COUNTY	SHEET NO.
	TEXAS	DALLAS	DALLAS	
	CONTROL	SECTION	JOB	TS28

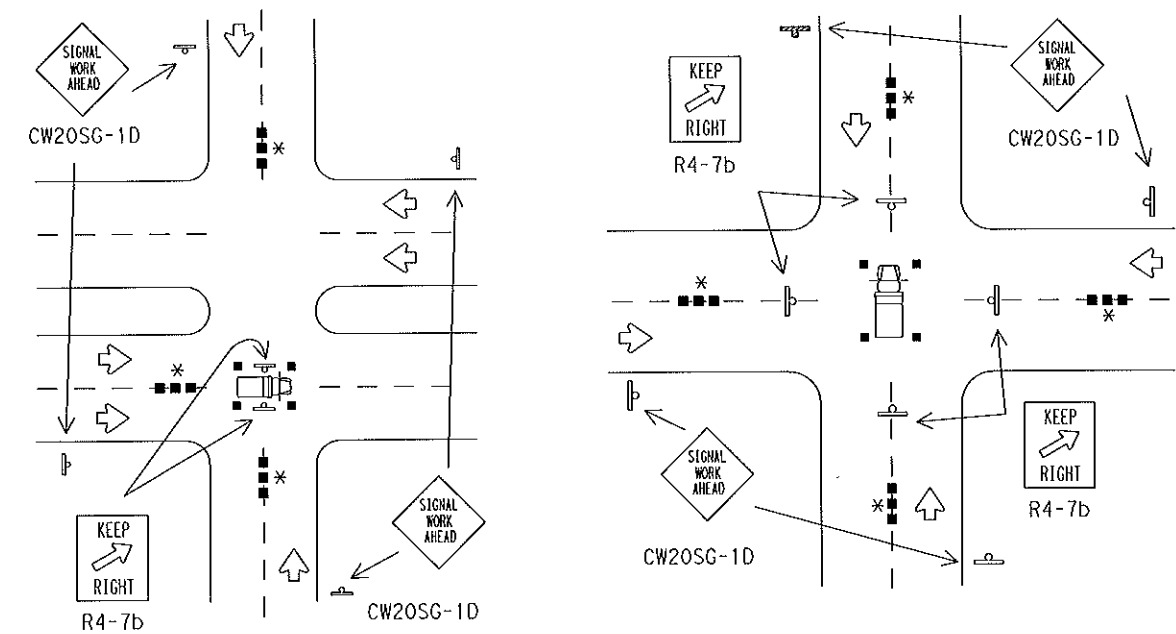


Posted Speed	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Device		Minimum Sign Spacing X Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60' - 75'	120'
35		205'	225'	245'	35'	70' - 90'	160'
40		265'	295'	320'	40'	80' - 100'	240'
45		450'	495'	540'	45'	90' - 110'	320'
50	$L = WS$	500'	550'	600'	50'	100' - 125'	400'
55		550'	605'	660'	55'	110' - 140'	500'
60		600'	660'	720'	60'	120' - 150'	600'
65		650'	715'	780'	65'	130' - 165'	700'
70		700'	770'	840'	70'	140' - 175'	800'
75		750'	825'	900'	75'	150' - 185'	900'

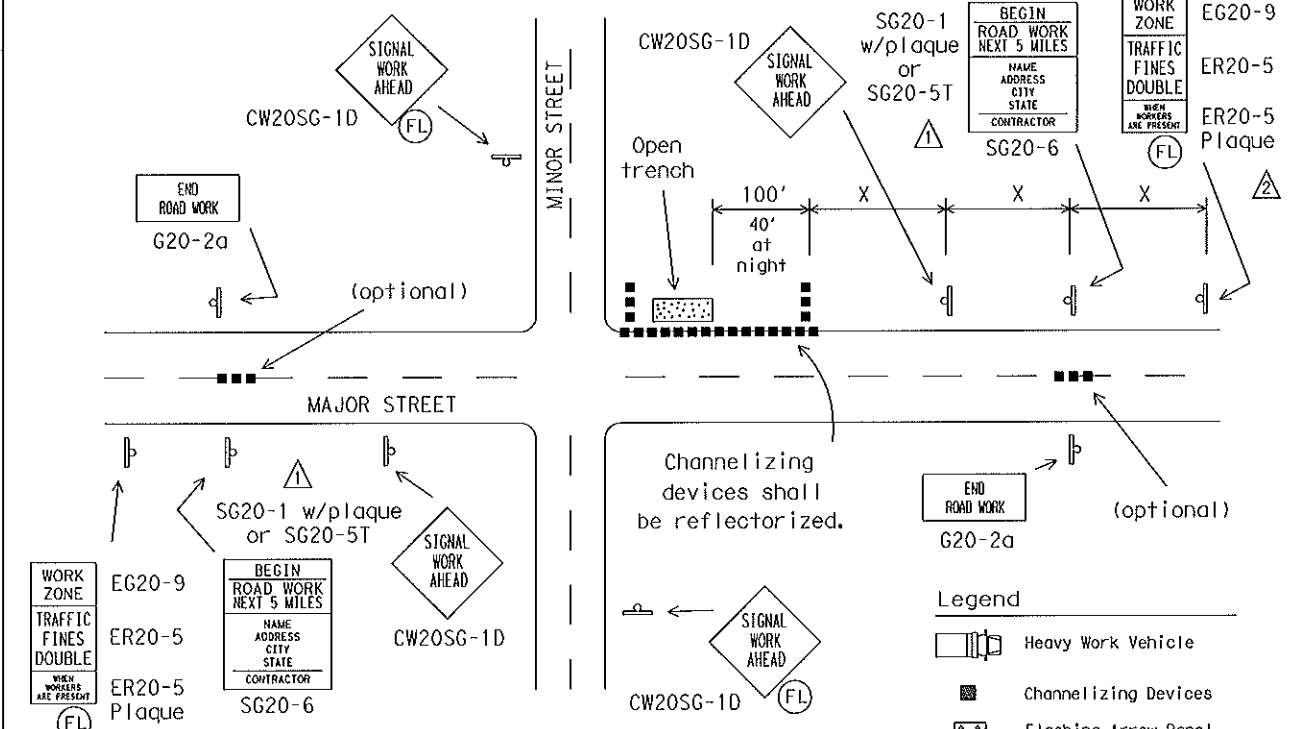
\*\*Taper lengths have been rounded off.  
L=Length of Taper (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)



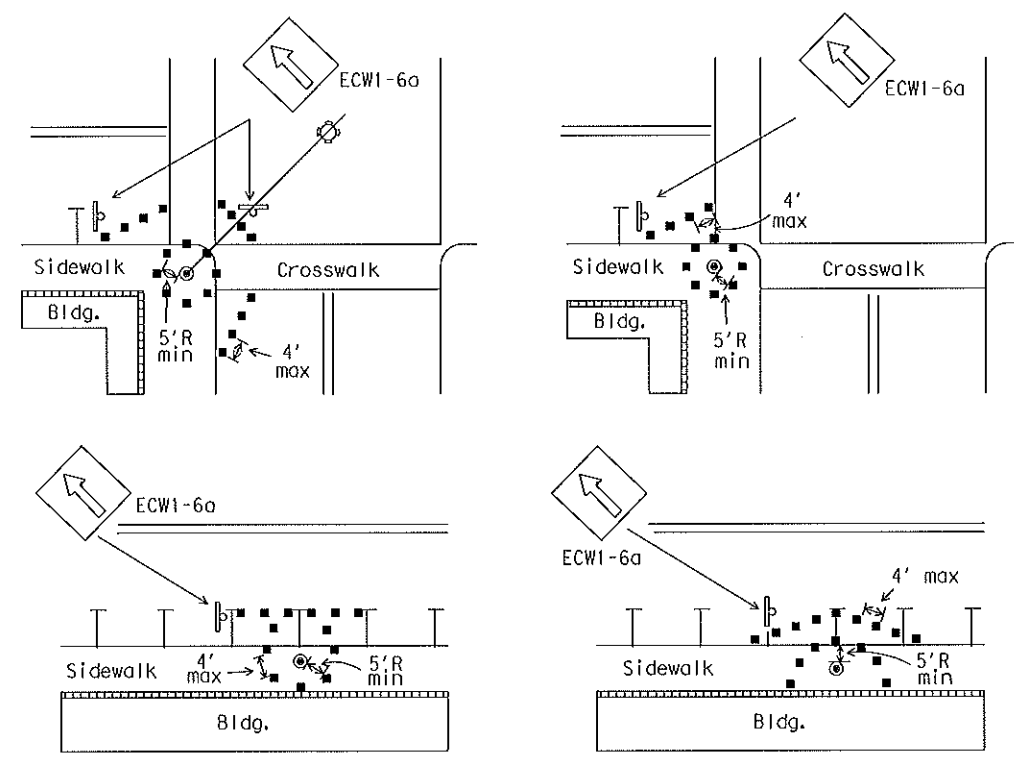
TYPICAL DETECTOR INSTALLATION  
OR OTHER WORK OPERATIONS THAT ARE SHORT TERM OR SHORT DURATION  
Nighttime Channelizing Devices shall be reflectorized.



TYPICAL HANGING SIGNAL INSTALLATIONS  
OR OTHER WORK OPERATIONS THAT ARE SHORT TERM OR SHORT DURATION  
\* Advance warning channelizing devices are optional.



TYPICAL ADVANCE SIGNING  
FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS  
Observe Warning Signs State Law (R20-3) shall be required.  
See BC(2).  
Location will be as directed by the Engineer.



Channelizing devices should not be placed closer than 5 foot radius (minimum) to signal poles.  
Parking may be eliminated by placing channelizing devices in spaces.  
If pedestrian walkways are blocked, refer to the Texas Manual on Uniform Traffic Control Devices (TMUTCD) Part 6.

TYPICAL RESTRICTED PEDESTRIAN MOVEMENTS  
FOR ALL WORK OPERATIONS REGARDLESS OF WORK DURATION

- The arrow panel may be omitted when stated elsewhere in the plans.
- Typical channelizing device is the 28" cone.
- Plastic drums or vertical panels may be used if approved by the Engineer.
- For several closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits.
- See details elsewhere in the plans for advance signing requirements.
- Advance signs shall be in place when signal construction operations are in progress.
- The contractor shall remove advance signs when no construction operations are underway.
- Obstructions or hazards of the work area shall be clearly marked and delineated at all times.
- All holes, trenches or other hazardous areas shall be adequately protected by lights or other protective devices.
- Trenches shall be covered or surrounded with orange plastic construction fence as directed by the Engineer.
- Flagger and FCW20-7a sign may be required according to field conditions.
- Vehicles parked in roadway shall be equipped with two strobes.
- High level flags at corners of vehicle may also be used.
- Work operations that require work vehicle in traveled way 20 minutes or less may use cones, high level flags and strobes as advance warning devices.
- Cones should only be placed around vehicle.
- Flaggers may be used on high speed rural intersections.

STANDARD PLANS  
Texas Department of Transportation  
Traffic Operations Division

TRAFFIC SIGNAL  
INSTALLATION  
TYPICAL DETAILS

WZ(BTS-1)-03

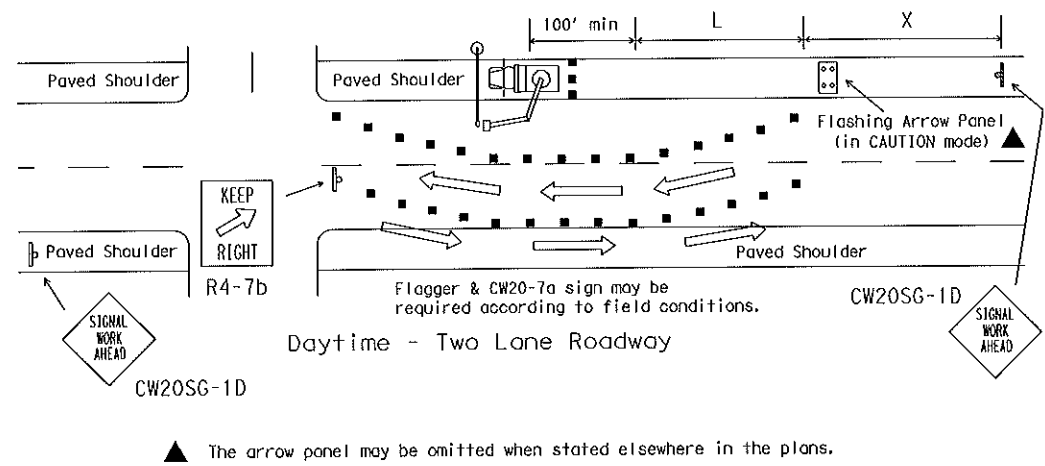
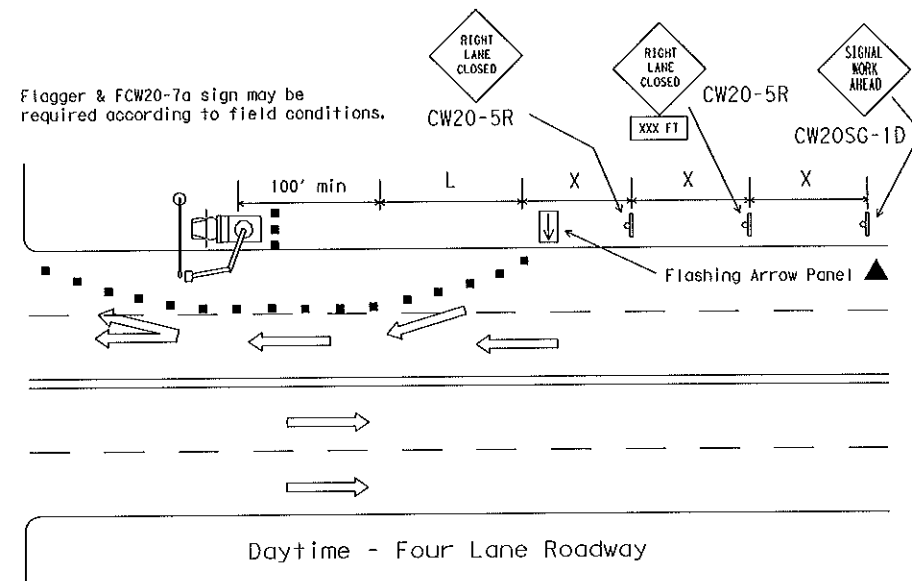
SHEET 1 OF 2

REVISED	DATE	BY	FOR
2-98	18	6	STATE AND PROJECT
4-98			
10-99			
3-03			

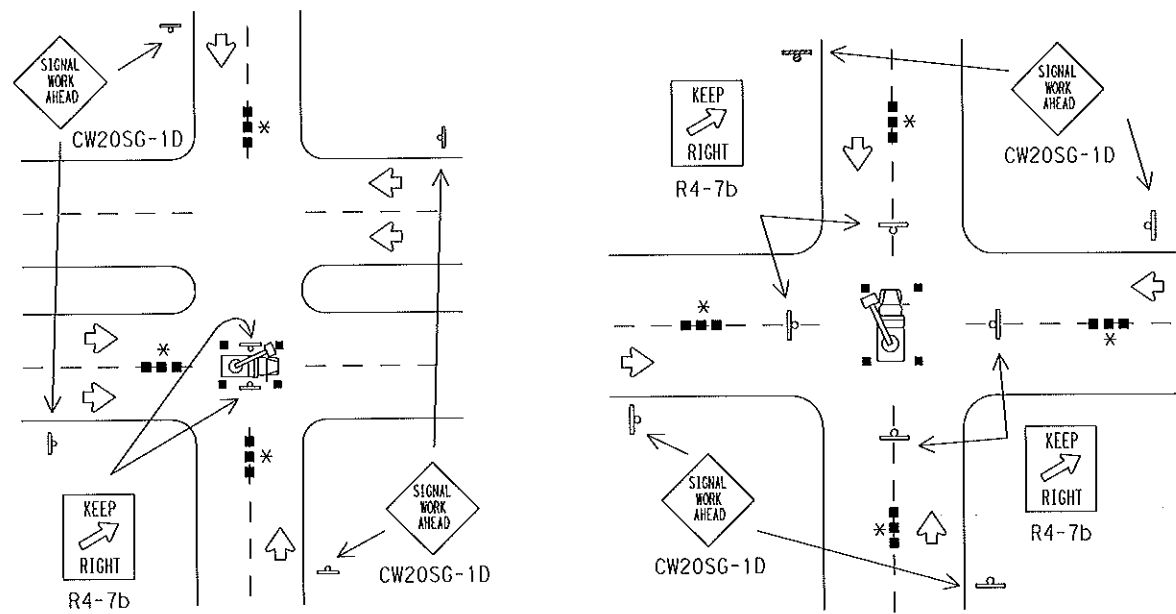
TXDOT April 1992



# "ABOVE LANE" WORK PERFORMED BY BUCKET TRUCK



# "ABOVE TRUCK" WORK PERFORMED BY BUCKET TRUCK



## GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports.
- Nails shall NOT be used to attach signs to any support.
- All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
- The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes. The additional signs requested by the Engineer/Inspector shall not be subsidiary.
- The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so that the Engineer can verify the correct procedures are being followed.
- The contractor is responsible for sign installations and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
- Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1".
- The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

## Duration of Work (as defined by the TMUTCD Part 6)

- The types of sign supports, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring that the sign support and substrate meets crashworthiness and length of work requirements.
- Long-term stationary is work that occupies a location more than 3 days.
  - Intermediate-term stationary is work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour.
  - Short-term stationary is daytime work that occupies a location for more than 1 hour, but less than 12 hours.
  - Short duration is work that occupies a location up to 1 hour.
  - Mobile is work that moves intermittently or continuously.

## SIGN MOUNTING HEIGHT

- The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface.
- The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
- Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday.
- Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

## REMOVING OR COVERING

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This type of sign support meets the crashworthiness standards regardless of the direction of impact. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
- Signs installed on skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
- When signs are covered, the material used shall be opaque, such as heavy mil black plastic.
- Burlap shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face. These materials can damage the retroreflectivity of sign sheeting.
- Signs shall be removed upon completion of the work.

## SIGN SUPPORT WEIGHTS

- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support weights.
- Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
- Sandbags shall be made of a durable material that tears upon vehicular impact.
- Rubber (such as tire inner tubes) shall NOT be used for sandbags.
- Rubber ballasts (such as those used with cones or edgeline channelizers) shall NOT be used as sign support weights.
- Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

DEPARTMENTAL MATERIAL SPECIFICATIONS		
PLYWOOD SIGN BLANKS		DMS-7100
ALUMINUM SIGN BLANKS		DMS-7110
FLAT SURFACE REFLECTIVE SHEETING		DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS		DMS-8310
VINYL NON-REFLECTIVE SHEETING		DMS-8320
COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE E (FLUORESCENT PRISMATIC)
WHITE	BACKGROUND	TYPE C (HIGH SPECIFIC INTENSITY)
WHITE	LEGEND & BORDERS	TYPE C (HIGH SPECIFIC INTENSITY)
BLACK	LEGEND & BORDERS	VINYL NON-REFLECTIVE SHEETING

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be obtained by contacting:

Standards Engineer  
 Traffic Operations Division - TE  
 Texas Department of Transportation  
 125 East 11th Street  
 Austin, Texas 78701-2483  
 Phone (512) 416-3120  
 Fax (512) 416-3299

Instructions to locate the "CWZTCD" on TxDOT website are:

Start at website - [www.dot.state.tx.us](http://www.dot.state.tx.us)  
 Click on "About TxDOT",  
 Click on "Organizational Chart",  
 Click on Traffic Operations Box,  
 Click on "Compliant Work Zone Traffic Control Devices",  
 Click on "View PDF".  
 This site is printable.

STANDARD PLANS  
 TEXAS DEPARTMENT OF TRANSPORTATION  
 Traffic Operations Division

## TRAFFIC SIGNAL INSTALLATION BARRICADES AND SIGNS

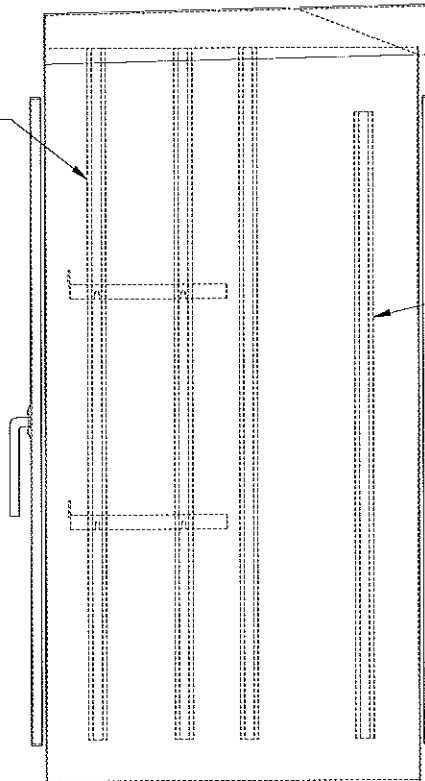
SHEET 2 OF 2 WZ(BTS-2)-03

REVISED	DATE	BY	REASON
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4-98			
10-99			
3-03			

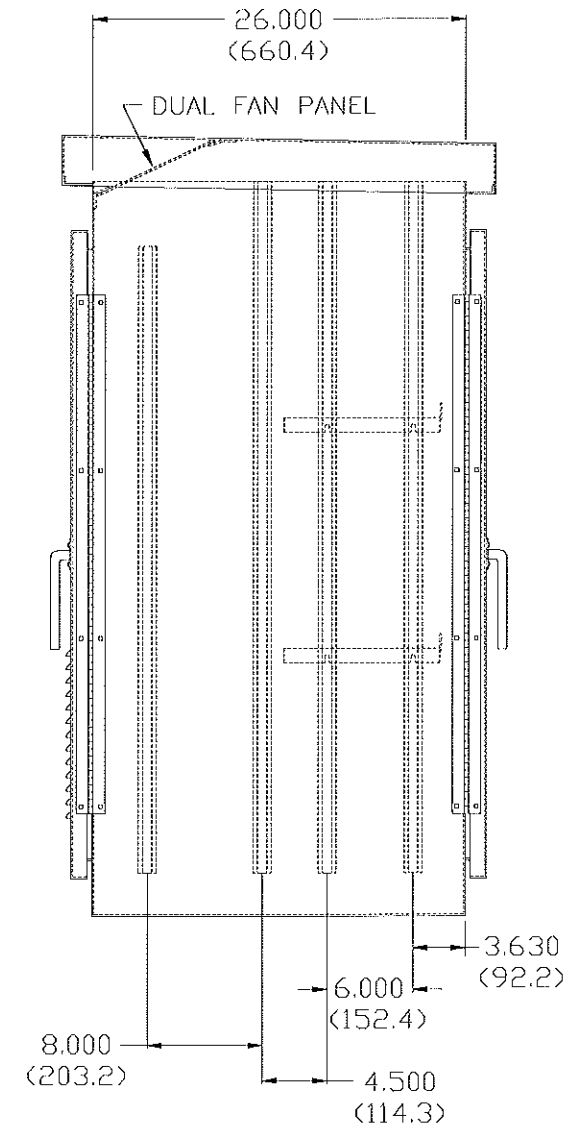
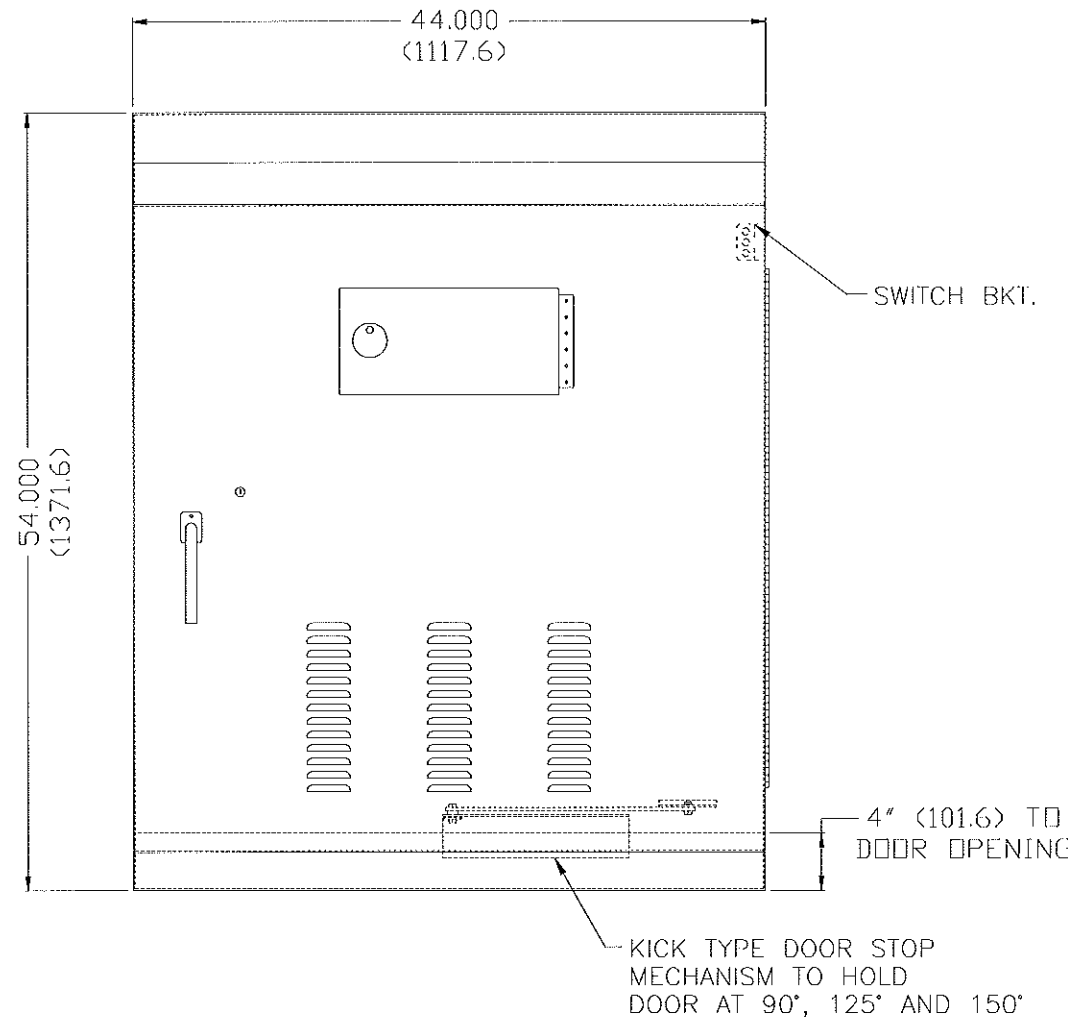
STATE DISTRICT	FEDERAL REGION	STATE AID PROJECT	SHEET
18	6		TS30
COUNTY	CONTROL	SECTION	JOB
DALLAS			WZ(BTS-2)-03

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 VITRUVIAN

48.000" (1219.2)  
UNISTRUT

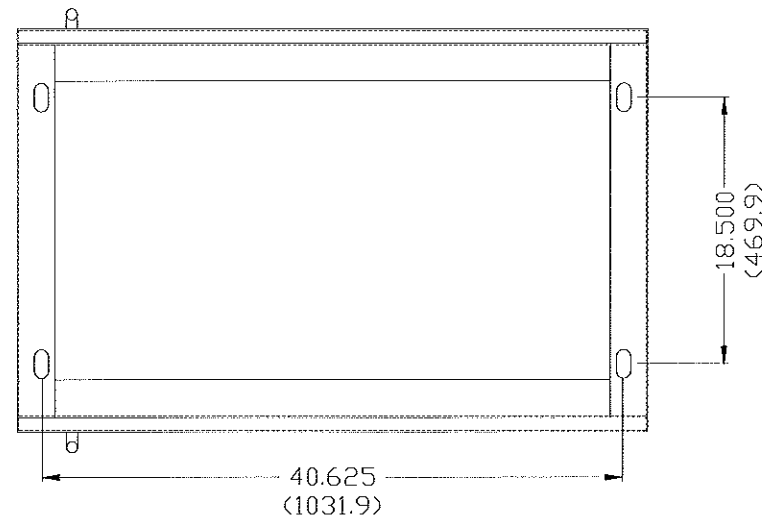


43.500" (1104.9)  
UNISTRUT



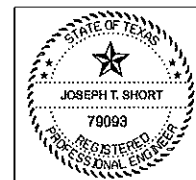
NOTES:

1. MATERIAL: 0.125 (3.18) THK. 5052 ALUMINUM.
2. FULL LENGTH SST HINGE.
3. FULL PERIMETER 1/2" X 2" (12.7 X 50.8) CLOSED CELL NEOPRENE GASKET.
4. TWO 11.000" (279.4) DEEP ADJUSTABLE SHELVES TO BE PROVIDED.
5. MAIN DOOR LOCK IS A #2 CORBIN LOCK
6. POLICE DOOR LOCK IS A #1 CORBIN LOCK
7. 3-POINT LATCHING SYSTEM WITH PADLOCKABLE SST HANDLE.
8. FILTER SIZE TO BE 14" X 25" (355.6 X 635.0)
9. CONTINUOUSLY WELDED EXTERNAL SEAMS.
10. SHIPPED ON A PLYWOOD PALLET WITH 4 X 4 RUNNERS.
11. FINISH: MILL IF REQUIRED.  
PAINT IF REQUIRED: REECE SUPPLY  
(313 DARK BRONZE AKZO METAFLEX) OUTSIDE, WHITE INSIDE.



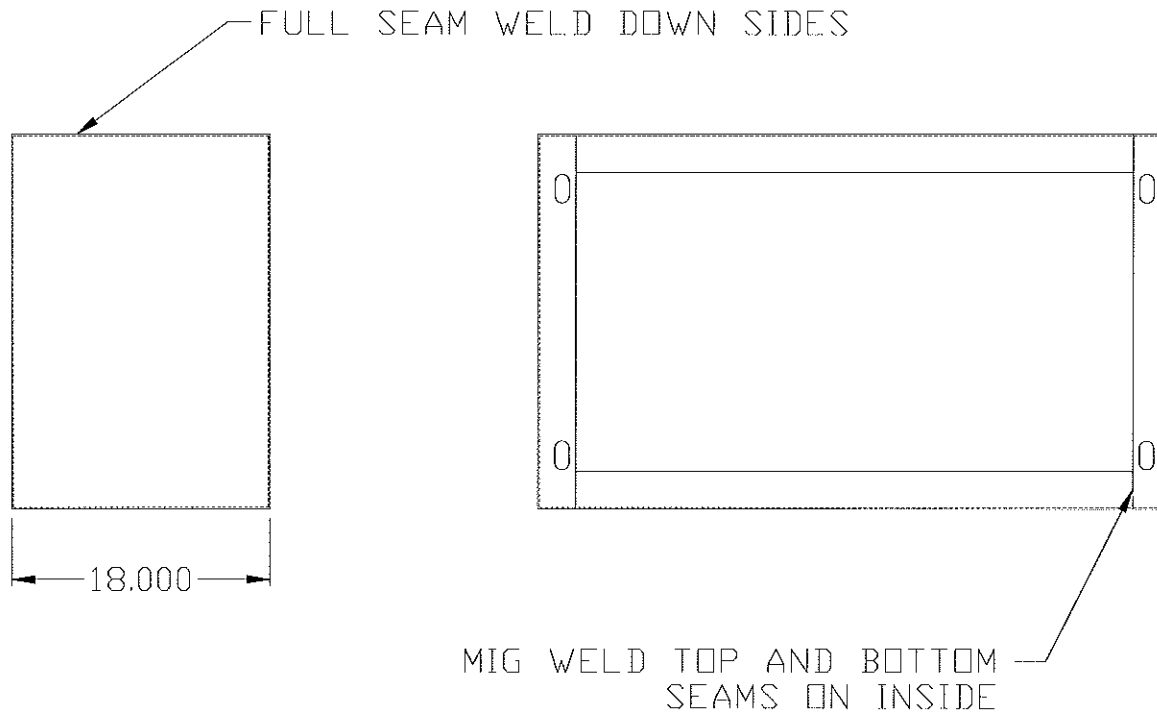
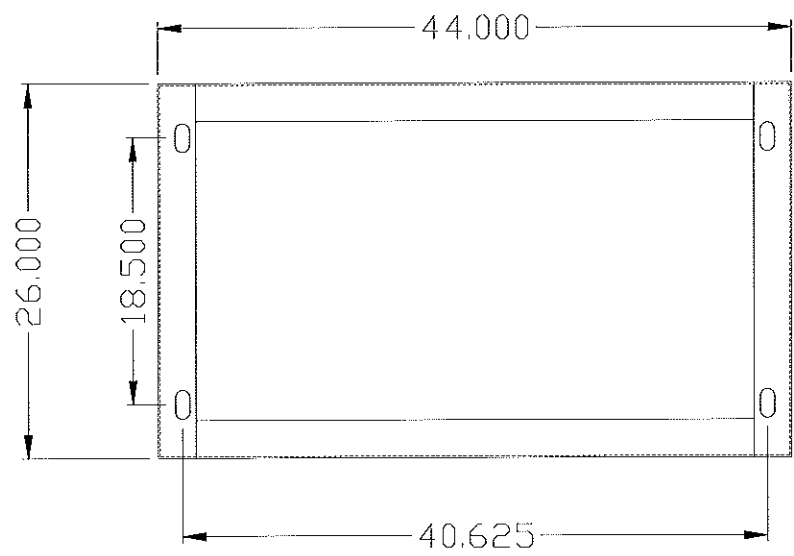
JOSEPH T. SHORT, P.E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450

*J.T. Short* 4/28/09  
DATE



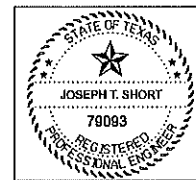
NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
PAVING, DRAINAGE & UTILITY IMPROVEMENTS VITRUVIAN WAY AND PONTE AVENUE			
<b>CONTROLLER CABINET DETAIL</b> VITRUVIAN WAY AT PONTE AVENUE			
PROJECT	DESIGN	DRAWN	DATE
5029-01	CJP	CJP	APR 28, 2009
FILE	SHEET		
PW# 2009-01	TS31		


PAVING, DRAINAGE & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



NOTES;  
1. FULL WELD CONSTRUCTION.

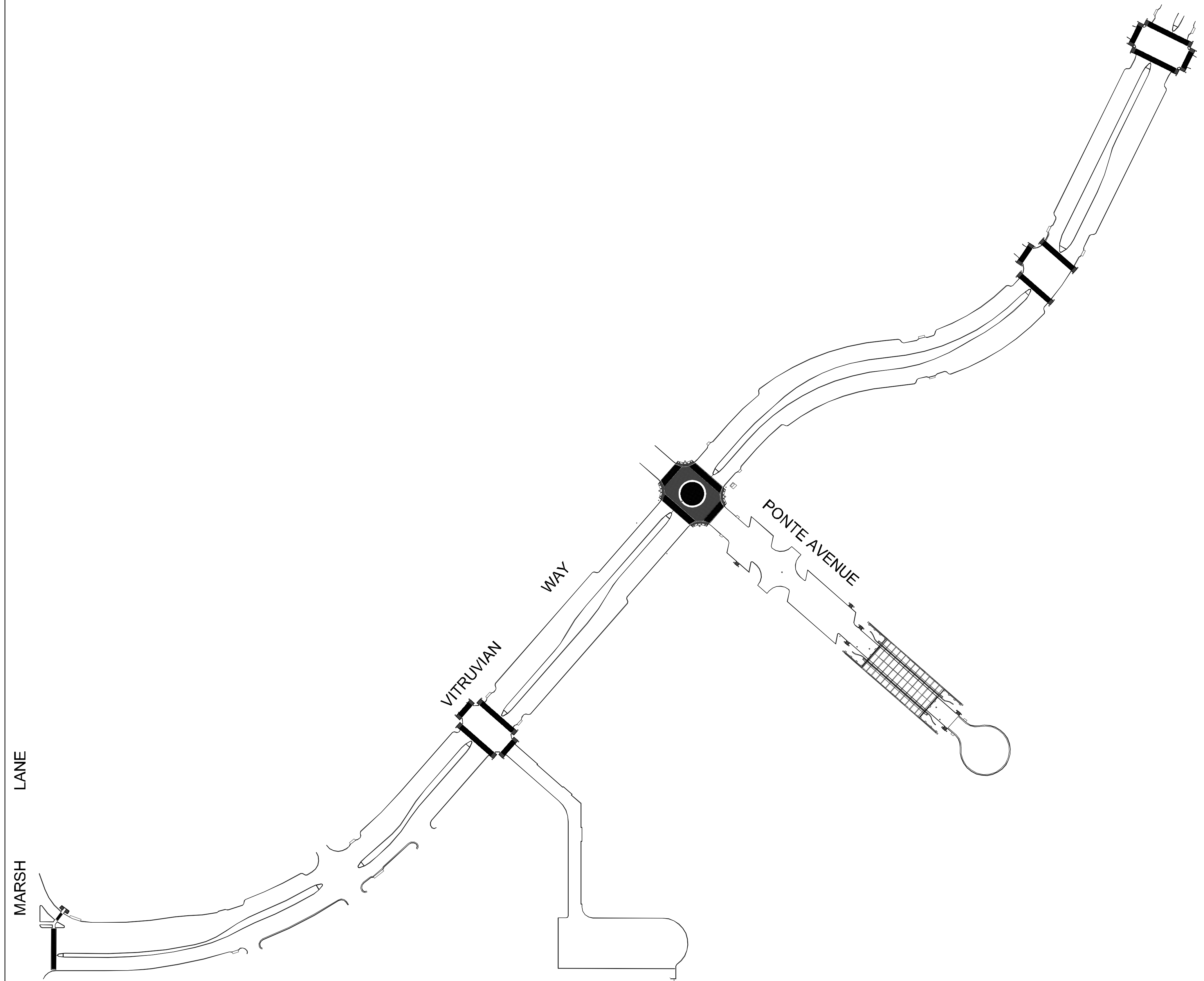
*J. T. Short* 4/28/09  
DATE  
JOSEPH T. SHORT, P. E.  
LEE ENGINEERING, L.L.C., REGISTRATION NO. F-450



NO.	REVISION	BY	DATE
 TOWN OF ADDISON DALLAS COUNTY, TEXAS			
PAVING, DRAINAGE & UTILITY IMPROVEMENTS VITRUVIAN WAY AND PONTE AVENUE			
<b>CONTROLLER CABINET BASE DETAIL</b> VITRUVIAN WAY AT PONTE AVENUE			
PROJECT	DESIGN	DRAWN	DATE
5029-01	CJP	CJP	APR 28, 2009
FILE	SHEET		
PW# 2009-01	TS32		

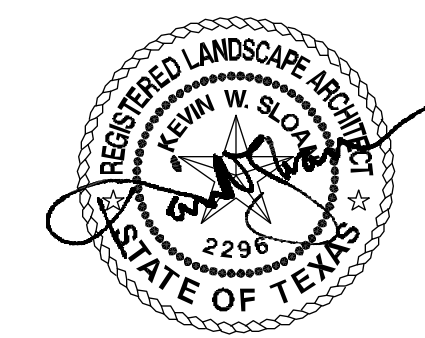
PAVING, DRAINAGE & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

SPRING VALLEY ROAD



**SHEET INDEX**

L1-00	Cover Sheet
L1-10	General Notes
<b>BASE BID CONDITION</b>	
L2-00	Hardscape Materials, Elements and Layout
L2-01	VW Hardscape - South Crosswalk Enlargement
L2-02	VW Hardscape - Central Crosswalk Enlargement
L2-03	VW Hardscape - North Crosswalk Enlargement
L2-04	VW Hardscape - North Crosswalk Enlargement
L2-05	VW + Ponte Ave - Intersection Enlargement
L2-06	Ponte Avenue - Enlargements



**ISSUED FOR CONSTRUCTION**  
 KEVIN SLOAN STUDIO  
 Landscape Architect KEVIN W. SLOAN  
 Lic. No. 2296 Date 4/28/09

NO.	REVISION	BY	DATE

*Addison!* TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

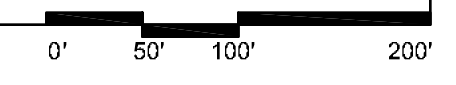
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY AND PONTE AVENUE

**COVER SHEET**

KEVIN SLOAN STUDIO 4145 Travis, Suite 105  
 Dallas, Texas 75204 (214) 379-1061

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	KWS	MM	APR 2009	PW # 2009-01	L1-00

1  
 L1-00 Vitruvian Way and Ponte Avenue Overall Street Plan



PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

**GENERAL LANDSCAPE NOTES**

- For all relevant utilities refer to Civil Engineering documents for scope and location.
- Plant material shall be measured and sized according to the latest edition of the Texas Nursery and Landscape Association (TNLA) Specifications, Grades, and Standards.
- Plant material shall be selected only with Landscape Architect's approval.
- All plant substitutions are subject to approval by Landscape Architect and must be approved in advance of selection.
- Trees shall not be planted deeper than the base of the "trunk flare".
- Trees must be planted three feet (3') from back of curbs, sidewalks, utility lines, screening walls, and/or other structures.
- Trees shall not be watered to excess that results in soil saturation. If soil becomes saturated, the water schedule shall be adjusted to allow for drainage and absorption of the excess water.
- A 3" to 4" layer of mulch, shall be provided around the base of the planted trees. The mulch shall be pulled back 3" to 6" from the root flare of the tree.
- No person(s) or entity may use improper or malicious maintenance or pruning techniques which would likely lead to death of the tree.
- The owner, tenant, and/or other agents, if any, shall be jointly and severally responsible for the maintenance, establishment, and permanence of plant material. All landscaping shall be maintained in a neat and orderly manner. This shall include, but not limited to, pruning, fertilizing, watering, and other activities for the maintenance of landscape areas.
- All plant material shall be maintained in a healthy and growing condition as is appropriate for the season of the year. Plant material that is damaged, destroyed, or removed, shall be replaced with plant material of similar size and variety with in 30 days unless otherwise approved in writing by the Landscape Architect. Replacement plant material shall be observed by the Owner's Appointed Representative at time of replacement.
- Landscape and open area shall be kept free of trash, litter and weeds.
- An automatic irrigation system shall be provided to irrigate all landscape areas. Over spray on streets and walks is prohibited.
- All walkways shall meet ADA requirements.
- If information in the "General Landscape Notes" conflicts with the specifications, the specifications will prevail.
- Screening for solid waste collection and loading areas shall be the same as, or of equal quality to, principal building materials.
- Landscape Architect shall review all shop drawings requested in drawings.

**IRRIGATION NOTES**

The entire property shall be irrigated. Automatic irrigation systems shall comply with the following guidelines.

- All plant material (including street trees and planting within the public right-of-way) shall be watered with an automatic irrigation system including an ET based controller.
- Irrigation sprinkler layouts shall be designed to minimize the amount of spray that will fall on sidewalks, neighboring properties, and adjacent buildings. Backflow prevention devices shall be placed per the Town of Addison Public Works Department's standards
- Valve and circuits shall be separated based on water use, so that turf areas are watered separately from shrub and ground cover areas. Irrigation heads in the turf areas will be valued separately from shrub and/or ground cover areas. It is recommended that seasonal color areas be watered separately from turf areas.
- Adjustable flow controls shall be required on circuit remote control valves and pressure regulation component(s) shall be required where static pressure exceeds manufacturer's recommended operating range.
- Sprinkler heads shall have matched precipitation rates within each control valve circuit.
- Serviceable check valves shall be required adjacent to paved areas where elevation differences may cause low head drainage.
- Sprinkler head spacing shall be designed for head-to-head coverage or heads shall be spaced as per manufacturer's recommendations and adjusted for prevailing winds. The system shall be designed so that irrigation is not applied to vehicular traffic lanes, other pavement or structures.
- All automatic irrigation systems shall be equipped with a controller capable of dual or multiple programming. Controllers shall have multiple cycle start capacity and a flexible calendar program, including the capability of being set to water every five days. All automatic irrigation systems shall be equipped with a rain sensor shut-off device.
- Irrigation construction plans shall include a water budget. A laminated copy of the water budget shall be permanently installed inside the irrigation controller door. Water budget shall include:
  - Chart containing zone number, precipitation rate and gpm.
  - Location of emergency irrigation system shut-off valve.

**SITE GRADING NOTES**

- No walk or ramp cross slopes shall exceed 2.0%.
- No walk longitudinal slope shall exceed 5.0%.
- No ramp longitudinal slope shall exceed 8.33%.
- Curb ramps shall be constructed at a maximum longitudinal slope of 8.33% and a maximum cross slopes of 2.0%. Length to be determined in field.

**GRADING NOTES:**

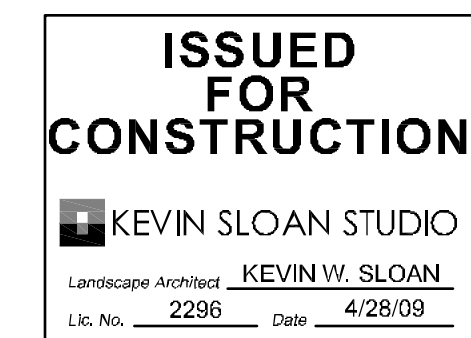
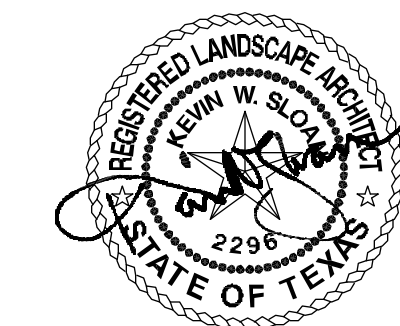
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**TREE AND NATURAL AREA PROTECTION NOTES**

- All trees and natural areas shown on plan to be preserved shall be protected during construction with temporary fencing.
- Protective fences shall be erected according to City of Addison Standards for Tree Protection.
- Protective fences shall be installed prior to the start of any site preparation work (clearing, grubbing or grading), and shall be maintained throughout all phases of the construction project.
- Erosion and sedimentation control barriers shall be installed or maintained in a manner which does not result in soil build-up within tree drip lines.
- Protective fences shall surround the trees or group of trees, and will be located at the outermost limit of branches (drip line), for natural areas, protective fences shall follow the Limit of Construction line, in order to prevent the following:
  - Soil compaction in the root zone area resulting from vehicular traffic or storage of equipment or materials;
  - Root zone disturbances due to grade changes (greater than 6 inches cut or fill), or trenching not reviewed and authorized by the City Arborist;
  - Wounds to exposed roots, trunk or limbs by mechanical equipment;
  - Other activities detrimental to trees such as chemical storage, cement truck cleaning, and fires.
- Exceptions to installing fences at tree drip lines may be permitted in the following cases:
  - Where there is to be an approved grade change, impermeable paving surface, tree well, or other such site development, erect the fence approximately 2 to 4 feet beyond the area disturbed;
  - Where permeable paving is to be installed within a tree's drip line, erect the fence at the outer limits of the permeable paving area (prior to site grading so that this area is graded separately prior to paving installation to minimized root damage);
  - Where trees are close to proposed buildings, erect the fence to allow 6 to 10 feet of work space between the fence and the building;
  - Where there are severe space constraints due to tract size, or other special requirements, contact the City Arborist to discuss alternatives.
- Where any of the above exceptions result in a fence being closer than 4 feet to a tree trunk, protect the trunk with strapped-on planking to a height of 8 ft (or to the limits of lower branching) in addition to the reduced fencing provided.
- Trees approved for removal shall be removed in a manner which does not impact trees to be preserved.
- Any roots exposed by construction activity shall be pruned flush with the soil. Backfill root areas with good quality top soil as soon as possible. If exposed root areas are not backfilled within 2 days, cover them with organic material in a manner which reduces soil temperature and minimizes water loss due to evaporation.
- Any trenching required for the installation of landscape irrigation shall be placed as far from existing tree trunks as possible.
- No landscape topsoil dressing greater than 4 inches shall be permitted within the drip line of trees. No soil is permitted on the root flare of any tree.
- Pruning to provide clearance for structures, vehicular traffic and equipment shall take place before damage occurs (ripping of branches, etc.).
- All finished pruning shall be done according to recognized, approved standards of the industry (Reference the National Arborist Association Pruning Standards for Shade Trees).
- Deviations from the above notes may be considered ordinance violations if there is substantial non-compliance or if a tree sustains damage as a result.
- Special Note: For the protection of natural areas, no exceptions to installing fences at the Limit of Construction line will be permitted.

**GENERAL NOTE:**

Site, Landscape and Irrigation Construction shall comply with the General Conditions of Paving, Drainage and Utility Improvements Package specifically as they pertain to site access, environmental protection, materials staging and the understanding between this contract and the Town of Addison regarding access through and/or occupancy of the adjacent park land and creek.



NO.	REVISION	BY	DATE
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*Addison!* TOWN OF ADDISON  
DALLAS COUNTY, TEXAS

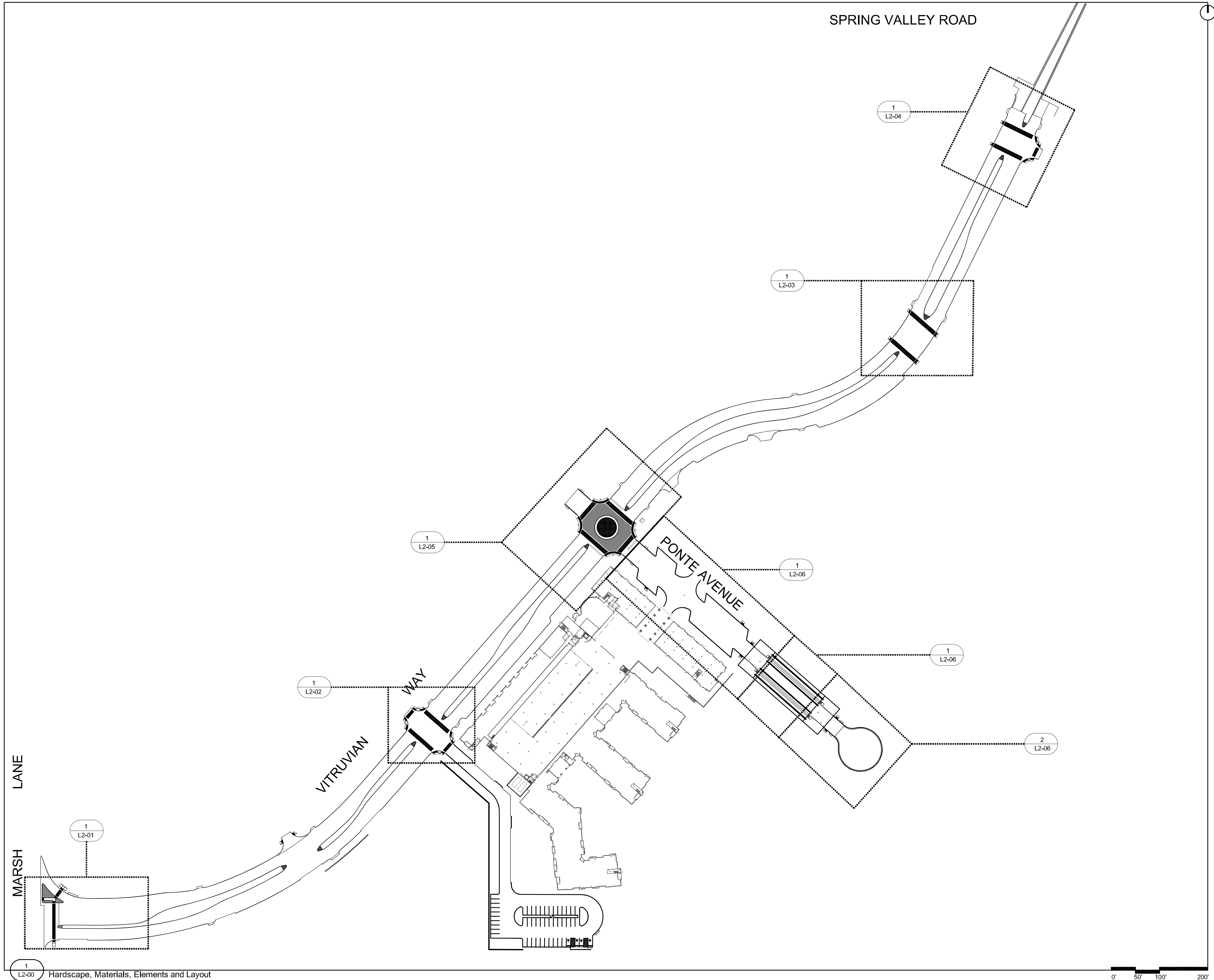
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY AND PONTE AVENUE

**GENERAL NOTES**

**KEVIN SLOAN STUDIO** 4145 Travis, Suite 105  
Dallas, Texas 75204 (214) 379-1061

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	KWS	MM	APR 2009	PW # 2009-01	L1-10

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



1 L2-00 Hardscape, Materials, Elements and Layout

0' 50' 100' 200'

- MATERIALS LEGEND**
- ① PIP concrete paving  
ref. Civil, Structural
  - ② PIP concrete band  
ref. Plan for width
  - ③ 6" concrete curb  
ref. Civil
  - ④ Stop bar  
ref. Civil
  - ⑤ Pavestone City Stone I  
2 3/8" thickness Travertine Blend color  
on 4" concrete base ref. Civil
  - ⑥ Not Used
  - ⑦ Pavestone City Stone I  
3 1/8" thickness Travertine Blend color  
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  - ⑩ Pavestone ADA Concrete Paver  
running bond pattern Bellows Brown color  
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  - ⑪ Traffic signal  
ref. Traffic Engineer
  - ⑫ Manhole cover  
ref. Civil
  - ⑬ Not Used
  - ⑭ Storm drain inlet  
ref. Civil
  - ⑮ 18" concrete gutter  
ref. Civil



**ISSUED FOR CONSTRUCTION**  
 KEVIN SLOAN STUDIO  
 Landscape Architect KEVIN W. SLOAN  
 Lic. No. 2296 Date 8/17/09

1	ASI 1	08/17/09
NO.	REVISION	BY DATE

*Addison!* TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS

PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY AND PONTE AVENUE

Hardscape Materials, Elements and Layout

KEVIN SLOAN STUDIO 4145 Travis, Suite 105  
 Dallas, Texas 75204 (214) 379-1061

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
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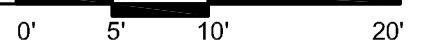
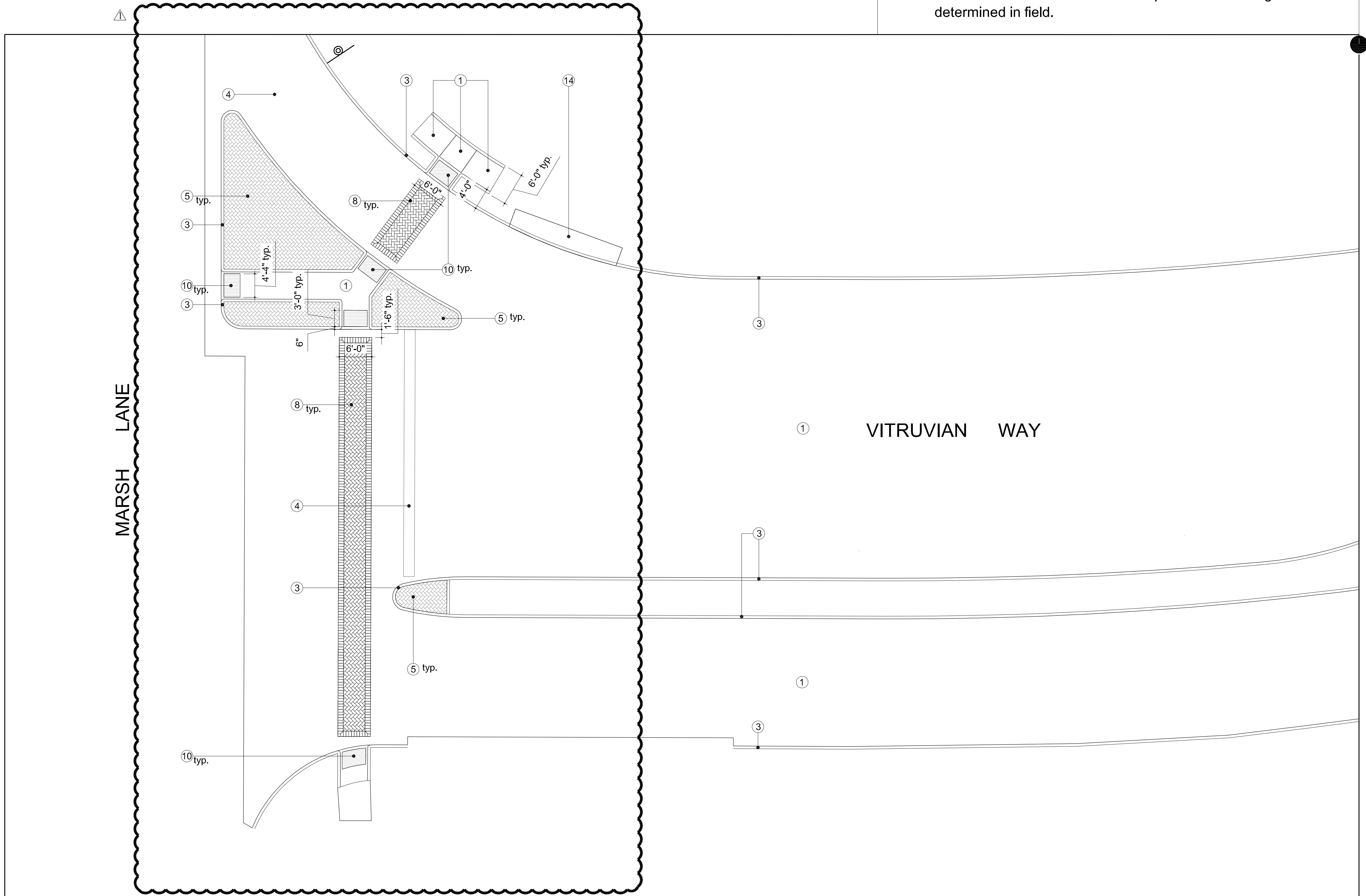
PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

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Landscape Architect KEVIN W. SLOAN

Lic. No. 2296 Date 8/17/09

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*Addison!* **TOWN OF ADDISON**  
DALLAS COUNTY, TEXAS

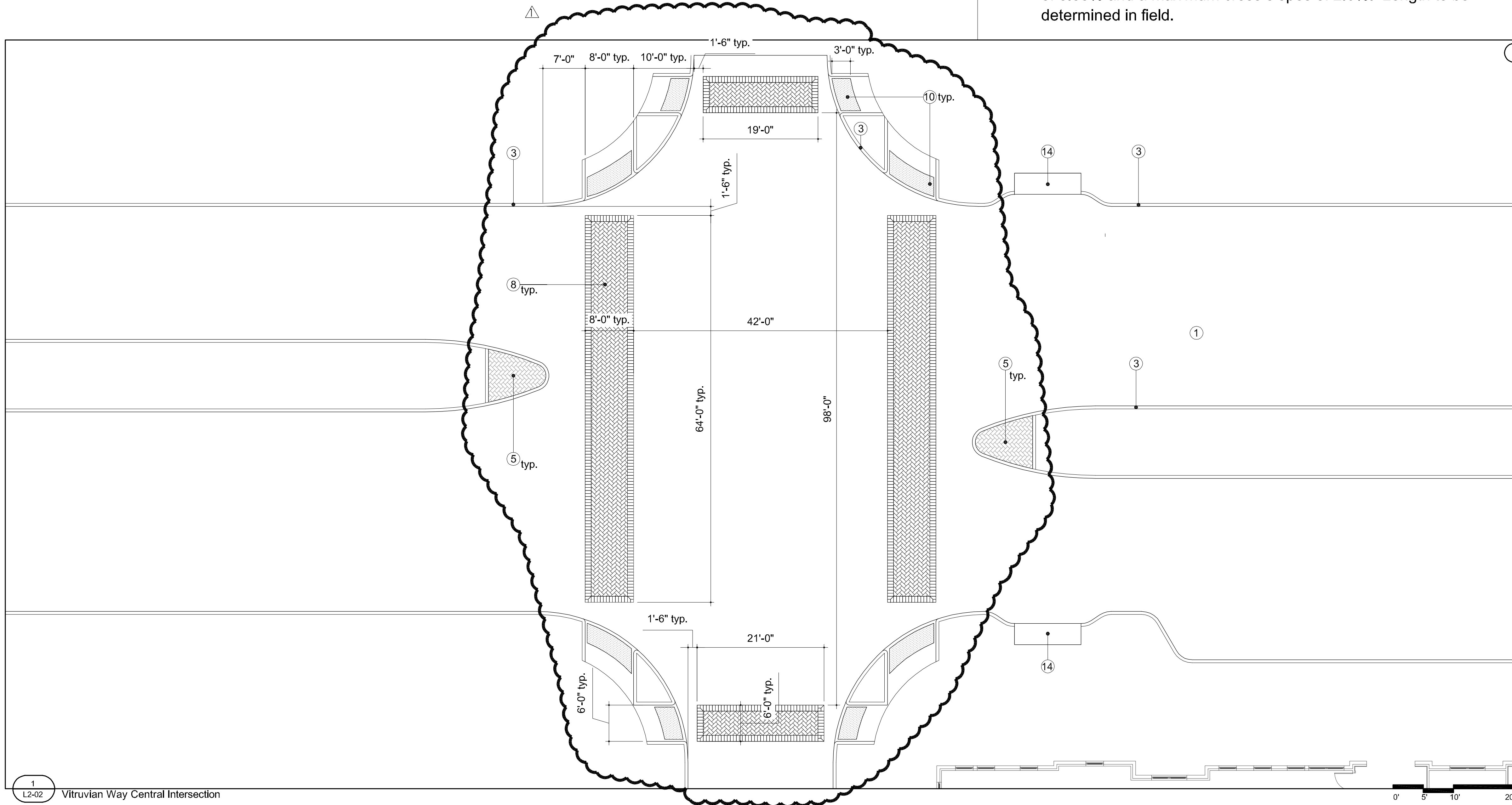
**PAVING, DRAINAGE & UTILITY IMPROVEMENTS**  
VITRUVIAN WAY AND PONTE AVENUE

**VW Hardscape -**  
**South Crosswalk Enlargements**

**KEVIN SLOAN STUDIO** 4145 Travis, Suite 105  
Dallas, Texas 75204 (214) 379-1061

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	KWS	ARJ	AUG 2009	PW # 2009-01	L2-01

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



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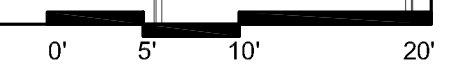
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ISSUED  
FOR  
CONSTRUCTION

KEVIN SLOAN STUDIO

Landscape Architect KEVIN W. SLOAN  
Lic. No. 2296 Date 8/17/09

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<b>TOWN OF ADDISON</b> DALLAS COUNTY, TEXAS			
<b>PAVING, DRAINAGE &amp; UTILITY IMPROVEMENTS</b> VITRUVIAN WAY AND PONTE AVENUE			
<b>VW Hardscape -</b> <b>Central Crosswalk Enlargements</b>			
<b>KEVIN SLOAN STUDIO</b>		4145 Travis, Suite 105 Dallas, Texas 75204 (214) 379-1061	
PROJECT	DESIGN	DRAWN	DATE
5029-01	KWS	ARJ	AUG 2009
FILE	SHEET		
PW # 2009-01	L2-02		

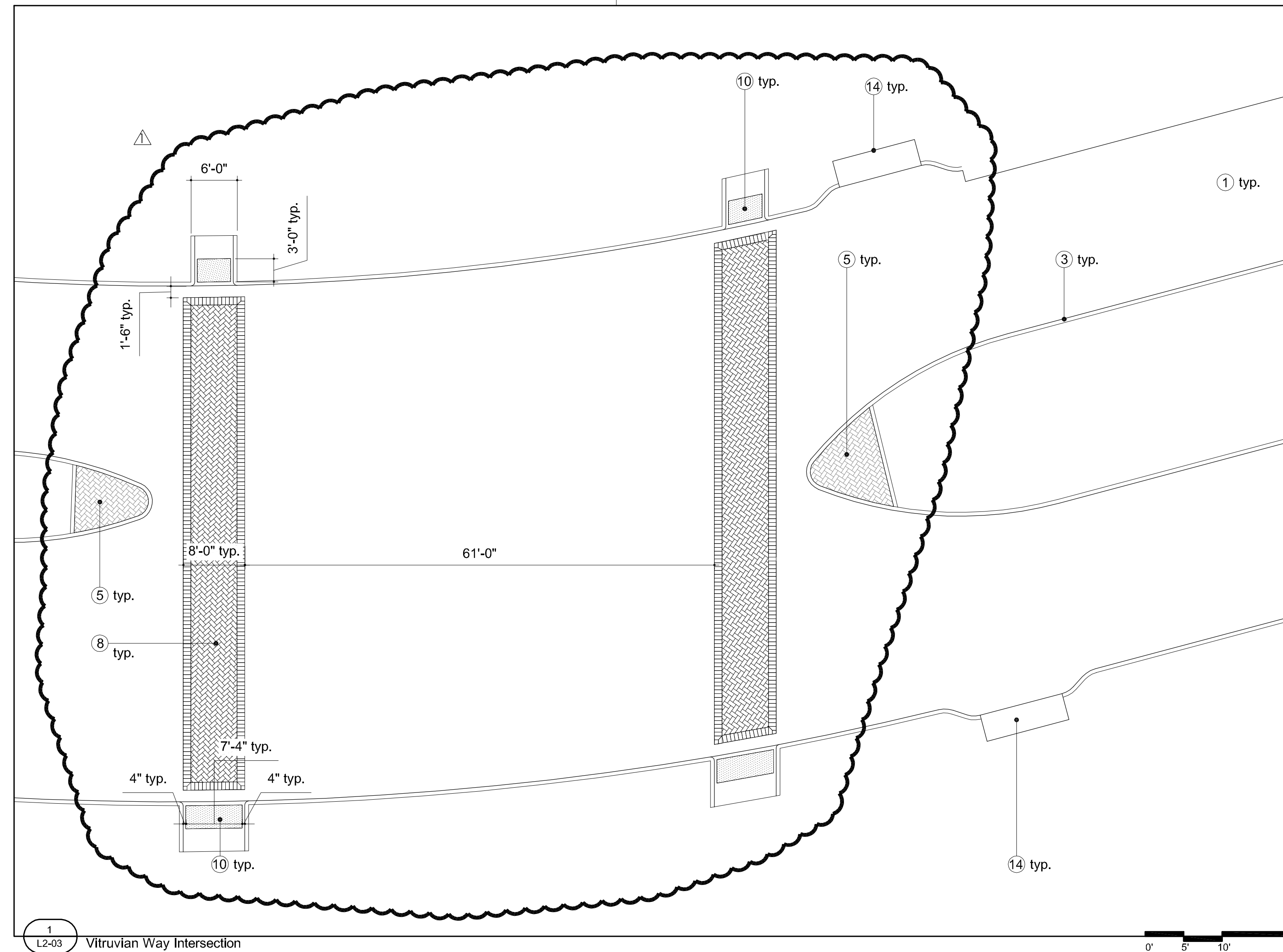


PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



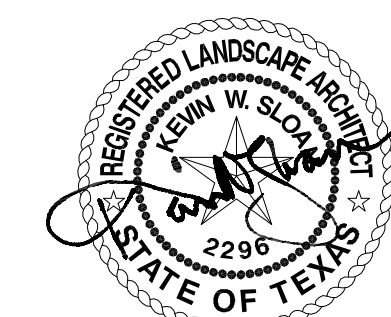
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*Addison!* TOWN OF ADDISON  
 DALLAS COUNTY, TEXAS  
 PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
 VITRUVIAN WAY AND PONTE AVENUE

VW Hardscape -  
 North Crosswalk Enlargements

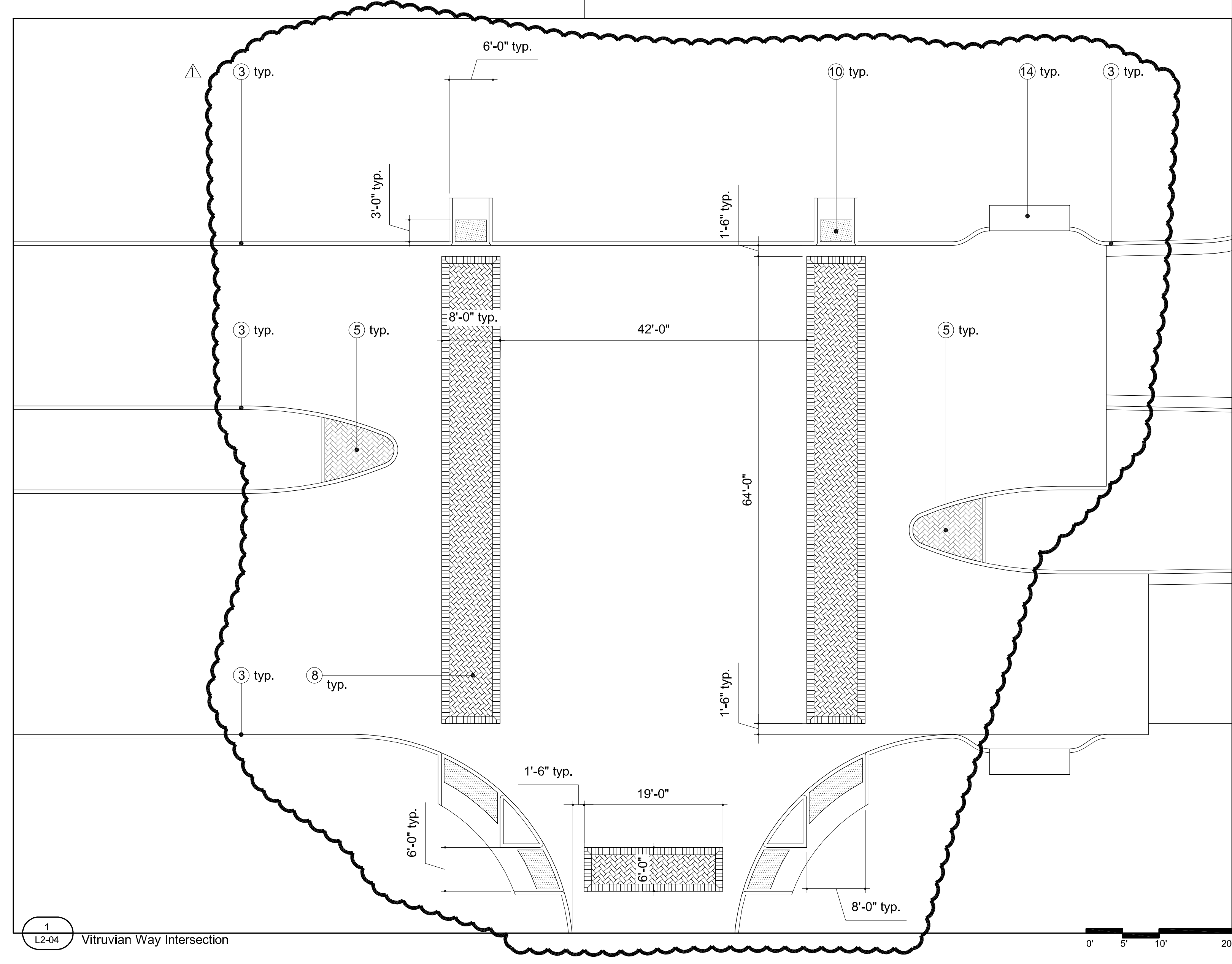
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 Dallas, Texas 75204 (214) 379-1061

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	KWS	ARJ	AUG 2009	PW # 2009-01	L2-03

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE

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Landscape Architect KEVIN W. SLOAN  
Lic. No. 2296 Date 8/17/09

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**TOWN OF ADDISON**  
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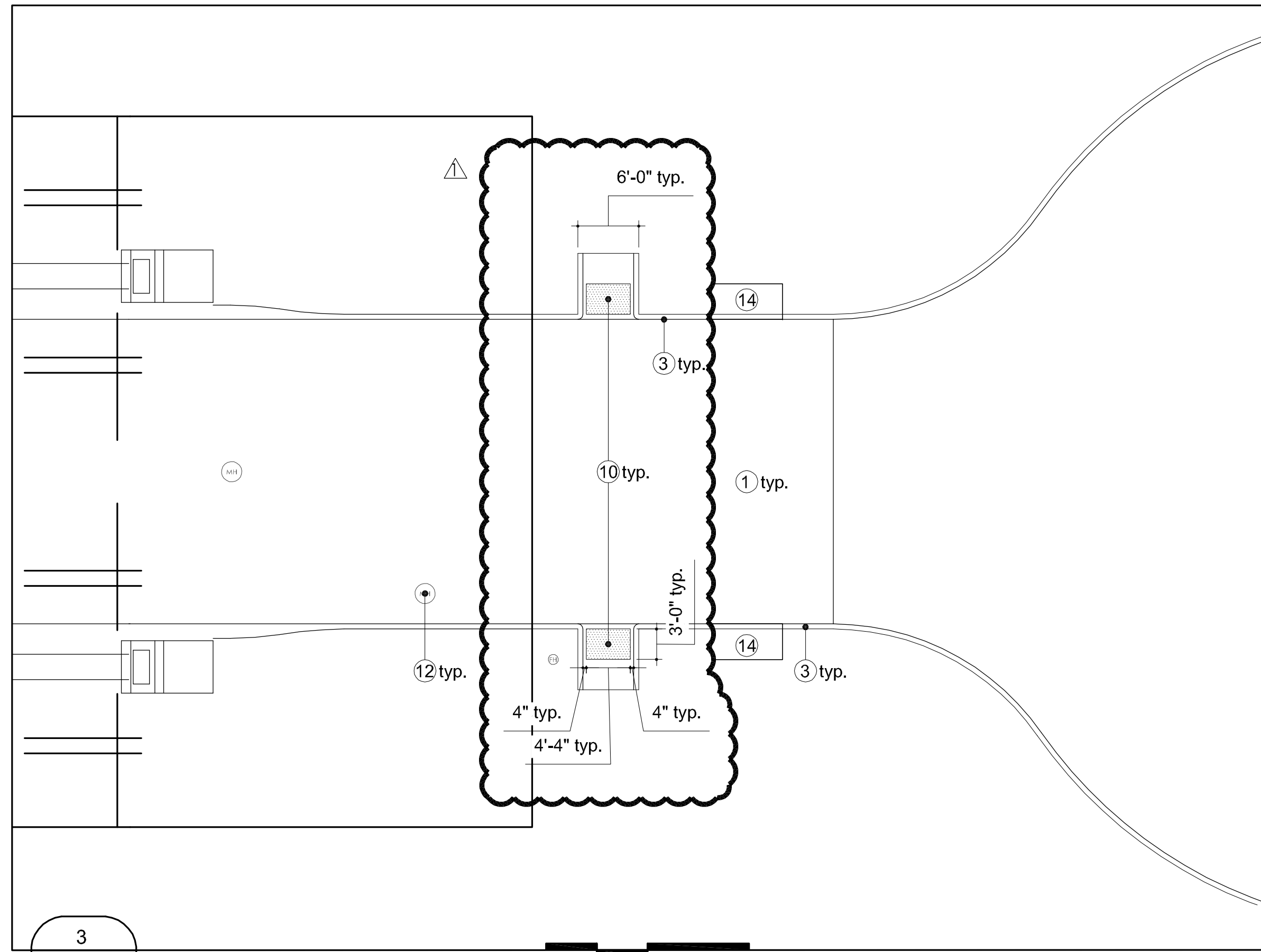
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**KEVIN SLOAN STUDIO**      4145 Travis, Suite 105  
 Dallas, Texas 75204 (214) 379-1061

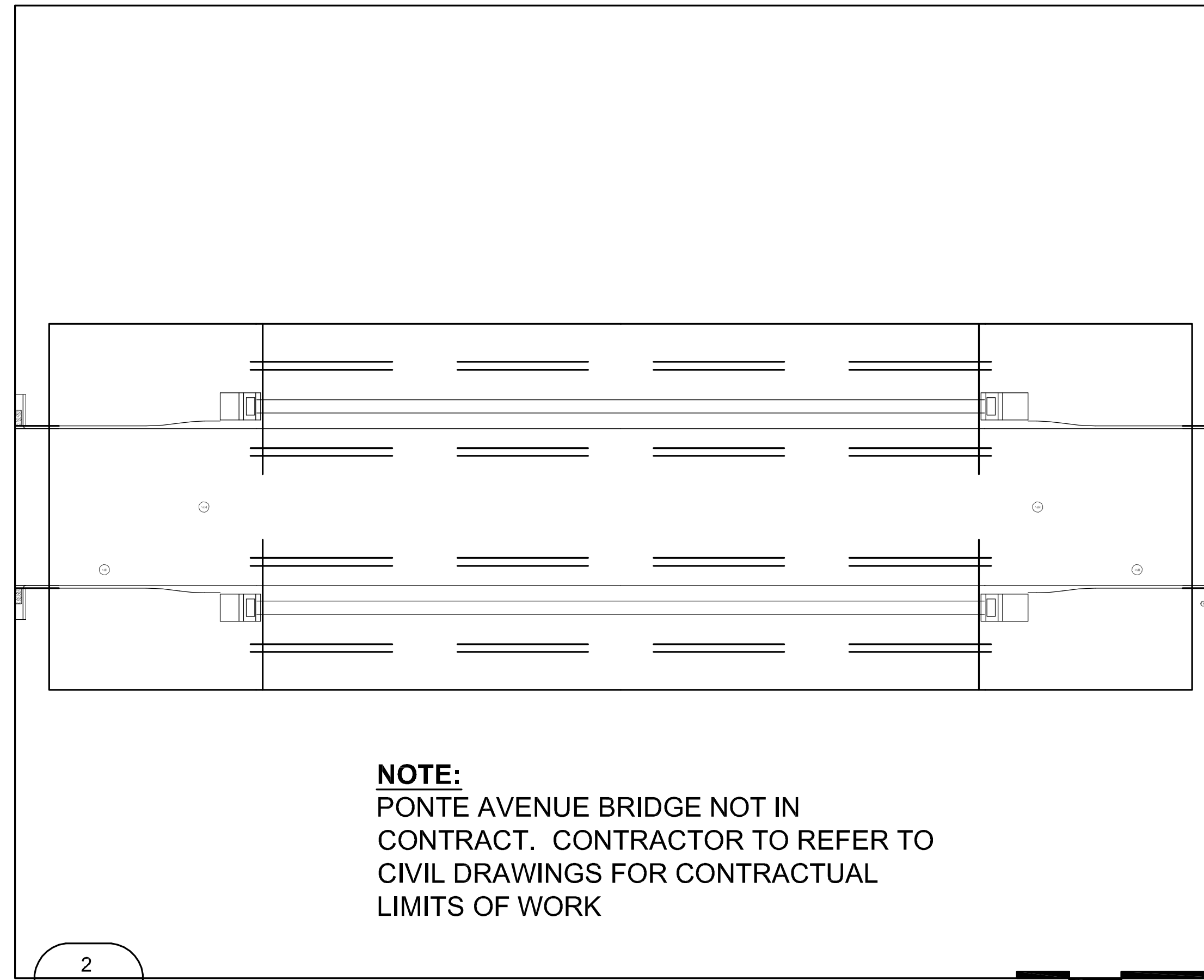
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
5029-01	KWS	ARJ	AUG 2009	PW # 2009-01	L2-04

PAVING, DRAINAGE, & UTILITY IMPROVEMENTS - VITRUVIAN WAY & PONTE AVENUE



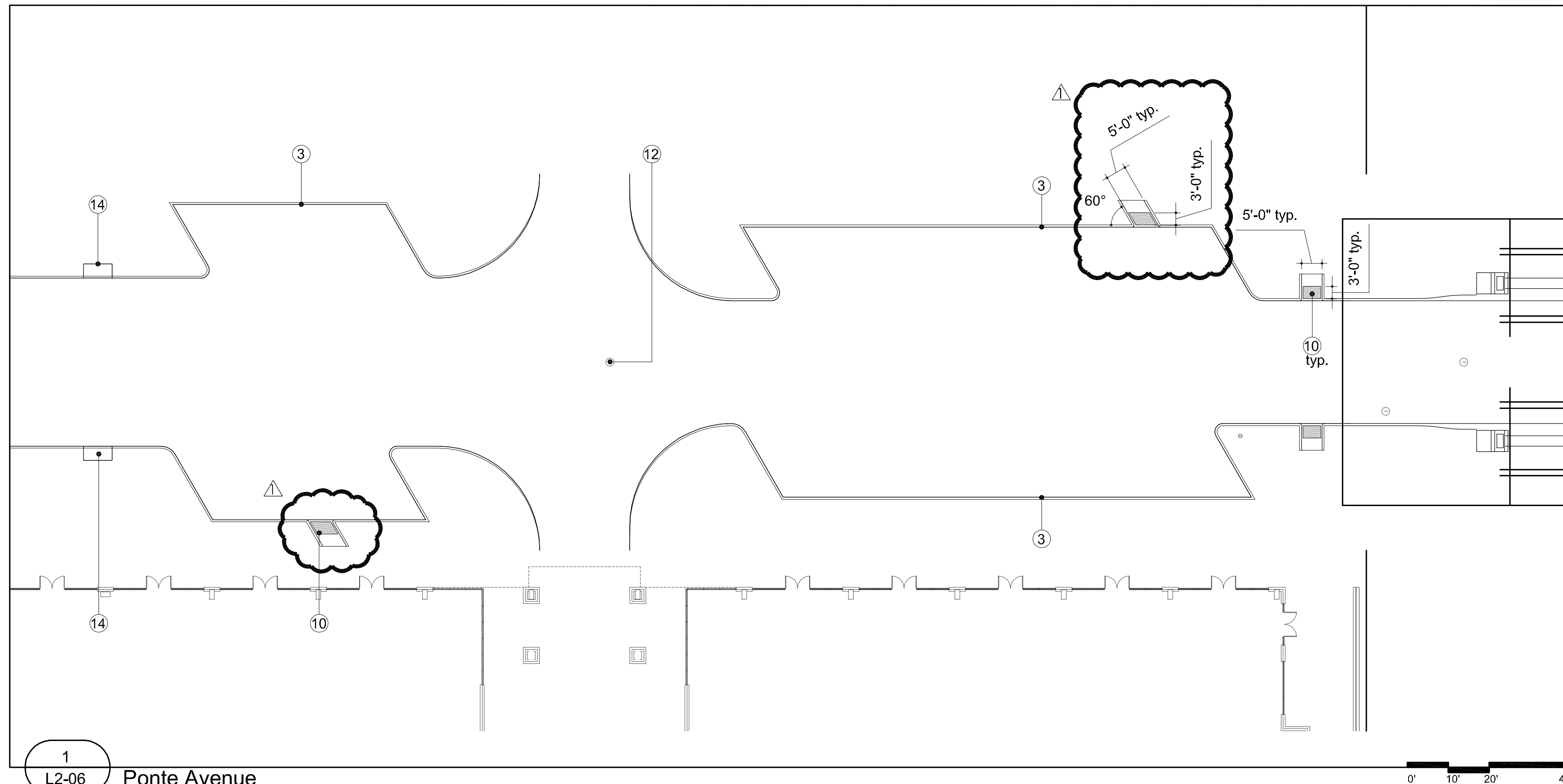


3  
L2-06 Ponte Avenue  
Cul de Sac



2  
L2-06 Ponte Avenue Bridge

**NOTE:**  
PONTE AVENUE BRIDGE NOT IN  
CONTRACT. CONTRACTOR TO REFER TO  
CIVIL DRAWINGS FOR CONTRACTUAL  
LIMITS OF WORK



1  
L2-06 Ponte Avenue

- MATERIALS LEGEND**
- ① PIP concrete paving  
ref. Civil, Structural
  - ② PIP concrete band  
ref. Plan for width
  - ③ 6" concrete curb  
ref. Civil
  - ④ Stop bar  
ref. Civil
  - ⑤ Pavestone City Stone I  
2 3/8" thickness Travertine Blend color  
on 4" concrete base ref. Civil
  - ⑥ Not Used
  - ⑦ Pavestone City Stone I  
3 1/8" thickness Travertine Blend color  
on 4" concrete base ref. Civil
  - ⑧ Pavestone City Stone I  
3 1/8" thickness Bellows Brown color  
on 4" concrete base ref. Civil
  - ⑨ Not used
  - ⑩ Pavestone ADA Concrete Paver  
running bond pattern Bellows Brown color  
on 4" concrete base ref. Civil
  - ⑪ Traffic signal  
ref. Traffic Engineer
  - ⑫ Manhole cover  
ref. Civil
  - ⑬ Not Used
  - ⑭ Storm drain inlet  
ref. Civil
  - ⑮ 18" concrete gutter  
ref. Civil



**ISSUED FOR CONSTRUCTION**  
KEVIN SLOAN STUDIO  
Landscape Architect KEVIN W. SLOAN  
Lic. No. 2296 Date 8/17/09

NO.	REVISION	BY	DATE
1	ASI 1		08/17/09

*Addison!* TOWN OF ADDISON  
DALLAS COUNTY, TEXAS  
PAVING, DRAINAGE & UTILITY IMPROVEMENTS  
VITRUVIAN WAY AND PONTE AVENUE

**Ponte Avenue - Enlargements**

KEVIN SLOAN STUDIO 4145 Travis, Suite 105  
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