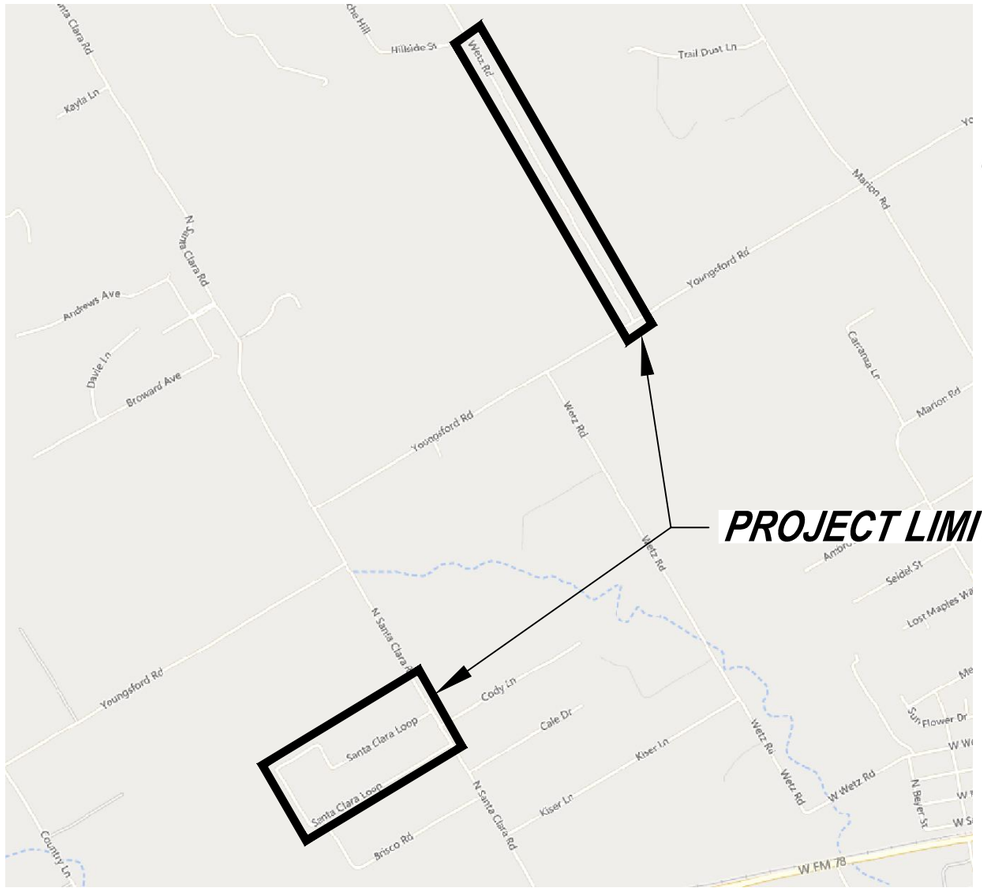
CITY OF SANTA CLARA

WETZ ROAD AND SANTA CLARA LOOP - ROAD AND DRAINAGE IMPROVEMENTS



N

0 2000' 4000'

SCALE: 1" = 2000'

CITY MAYOR: **JEFF HUNT**

CITY COUNCIL MEMBERS: **MARIAN CARTY**
ERNEST SCHOENEFELDT
DANNY TRAMMELL
JIM FOLBRE
LYNETTE SIERRER

Geotechnical report: Project Manual C1001 by Arias Geoprofessionals dated 8/22/22

811 KNOW WHAT'S BELOW! CALL BEFORE YOU DIG!

THE SIZE, TYPE, LOCATION AND DEPTH OF EXISTING UTILITIES AS SHOWN HEREIN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH RESULT FROM THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

SHEET INDEX

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0239
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
COVER SHEET

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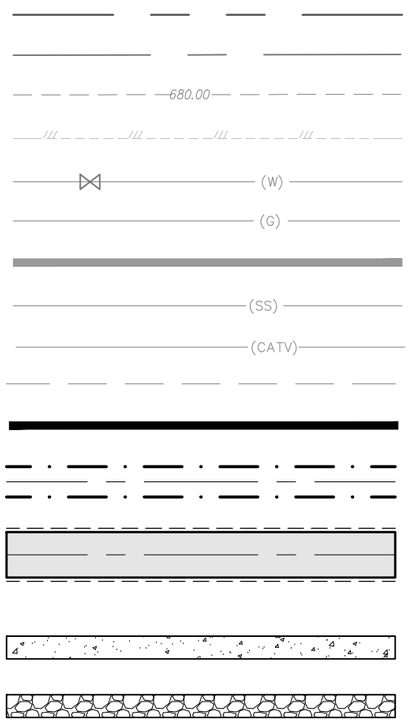
DESIGNED BY: TT
CHECKED BY: TT

SHEET NO.
C0.1

LEGEND



EXISTING RIGHT OF WAY

EXISTING CENTERLINE

EXISTING CONTOUR

EXISTING EDGE OF PAVEMENT

EXISTING WATER MAIN

EXISTING GAS MAIN

EXISTING STORM DRAIN

EXISTING SANITARY SEWER MAIN

EXISTING CABLE

EASEMENT

PROPOSED STORM DRAIN

PROPOSED DITCH RE-GRADING

PROPOSED 2 - COURSE CHIP SEAL WITH 1' SHOULDER

PROPOSED CONCRETE

PROPOSED GRAVEL

ABBREVIATIONS

NOTE: ABBREVIATIONS SHOWN HEREON MAY OR MAY NOT BE EVIDENT ON PLANS.

AB	AGGREGATE BASE	L	LEFT
AC	ASPHALTIC CONCRETE	LG	LIP OF GUTTER
ADA	AMERICAN'S WITH DISABILITIES ACT	LP	LOW POINT
AVE	AVENUE	LVC	LENGTH OF VERTICAL CURVE
BEG.	BEGINNING	N	NORTH
BOT.	BOTTOM	(N)	NEW
BVCE	BEGIN VERTICAL CURVE ELEVATION	OHU	OVER HEAD UTILITY
BVCS	BEGIN VERTICAL CURVE STATION	OS	OFFSET
BW	BACK OF WALK	(P)	PROPOSED
CBMH	CATCH BASIN MANHOLE	PB	PULL BOX
℄	CENTERLINE	PGL	PROFILE GRADE LINE
CLF	CHAIN LINK FENCE	POL	POINT ON LINE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CONC.	CONCRETE	RCP	REINFORCED CONCRETE PIPE
DCV	DOUBLE CHECK VALVE	RD	ROAD
DEMO	DEMOLITION	ROW	RIGHT OF WAY
DI	DROP INLET	S	SLOPE
DIP	DUCTILE IRON PIPE	SD	STORM DRAIN
DWY	DRIVEWAY	SDMH	STORM DRAIN MANHOLE
E	EAST	SGN	SIGN
(E)	EXISTING	SL	STREET LIGHT
EL	ELEVATION	SS	SANITARY SEWER
ELEC.	ELECTRICAL	SSCO	SANITARY SEWER CLEAN OUT
ELEV	ELEVATION	SSMH	SANITARY SEWER MANHOLE
EP	EDGE OF PAVEMENT	STA	STATION
EVCE	END VERTICAL CURVE ELEVATION	STD	STANDARD
EVCS	END VERTICAL CURVE STATION	SW	SIDEWALK
FC	FACE OF CURB	TBR	TO BE REMOVED
FH	FIRE HYDRANT	TC	TOP OF CURB
FL	FLOWLINE	TCE	TEMPORARY CONSTRUCTION EASEMENT
FND	FOUND	TELE	TELEPHONE
FS	FINISHED SURFACE	TFL	TOP OF FLOWLINE
GB	GRADE BREAK	TG	TOP OF GRATE
GM	GAS METER	TV	TELEVISION
GV	GAS VALVE	TYP	TYPICAL
H.	HORIZONTAL	V.	VERTICAL
HB	HOSE BIB	VLT	VAULT
HP	HIGH POINT	W	WEST
ICV	IRRIGATION CONTROL VALVE	WM	WATER METER
INV	INVERT	WV	WATER VALVE

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LEGEND AND ABBREVIATIONS

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Wetz Rd. and Santa Clara Loop Road and Drainage Improvements

Special Provisions

1. General Description of the Scope of Work

The scope of work generally involves reclaiming existing road base material and installing a two-course chip seal, including roadside ditch improvements and culvert installation for Wentz Road and Santa Clara Loop.

2. Project Limits and Area

Wetz Road from Youngsford Road to Hillside Estates.

Santa Clara Loop west of N. Santa Clara Road.

3. Specifications

The Contractor shall perform all work and construct the improvements following TxDOT's Standard Specifications for the Construction and Maintenance of Highways, Streets, and Bridges (dated November 1, 2014).

4. Notifications

The Contractor shall notify the City of Santa Clara and the Engineer 48 hours before starting construction.

5. Regulations

The Contractor shall conduct all construction operations according to applicable state statutes and U.S. OSHA regulations. The Contractor may obtain information and related reference materials from OHSA at 1033 La Posada Dr., Suite 375, Austin, Texas 78752-3832.

All construction shall comply with the Texas Administrative Code, TCEQ, and any other governing entity, ordinances, or codes.

6. Job Site Responsibility

The Contractor shall be entirely responsible for job site conditions during the construction of this project, including the safety of all persons and the protection of property. This requirement shall apply continuously and not be limited to regular working hours.

4. Utilities

The Contractor shall use established safety practices when working near utilities.

The Contractor shall inform and consult with the appropriate utility owners before work begins, allowing them enough time to identify, locate, reroute, or make other adjustments to utility lines.

The size, location, and depth of existing utilities shown on these plans are approximate only.

The Contractor shall verify the exact horizontal and vertical location of all existing utilities before commencing work. All existing utilities shall remain in place and stay in service unless otherwise indicated on the plans.

The Contractor shall be fully responsible for all damages resulting from the Contractor's failure to locate and preserve all underground and above-ground utilities in the project area.

The Contractor shall notify the Engineer immediately of utility conflicts.

The Engineer will decide whether to adjust utilities or adjust the work to eliminate or lessen the conflict.

Unless otherwise shown on the plans, the Engineer will make necessary arrangements with the utility owner when utility adjustments are required.

The Contractor shall use work procedures that protect utilities or appurtenances that remain in place during construction.

The Contractor shall conduct work with minimum disturbance of existing utilities and coordinate work in or near utilities with the utility owners.

The Contractor shall cooperate with utilities to remove and rearrange utilities to avoid service interruption or duplicate work by the utilities.

The Contractor shall not disrupt utility services to customers in the project area unless the outage has been coordinated and scheduled with the appropriate utility provider(s) and customers.

The Contractor shall provide 24-hour emergency contact information to area utility companies.

The Contractor shall allow utilities access to the right of way.

The Contractor shall immediately notify the appropriate utility companies of service interruptions resulting from damage due to construction activities and cooperate with utilities until service is restored.

The Contractor shall maintain access to fire hydrants when necessary.

The Contractor shall avoid cutting or damaging underground utility lines to remain in place and promptly notify the utility company if damage occurs.

5. Surveying

These plans contain sufficient horizontal and vertical control points, established by the Engineer, for the Contractor to establish lines, slopes, grades, and centerlines.

6. Staging Area

The Contractor may not use Auxiliary Airport Road right-of-way for construction staging, except in designated work zone areas. The Contractor shall store materials and equipment within permissible areas within Joint Base San Antonio-Seguin Auxiliary Airfield.

7. Construction Water

The Contractor shall obtain a water supply for construction purposes.

8. Haul Route Protection

The Contractor shall use whatever means to prevent soil and other foreign materials from littering public streets used to haul materials to and from this project site. The Contractor shall remove soil, dirt, mud, and other materials from the public streets to prevent hazardous conditions and protect the traveling public.

9. Field Changes

The Contractor shall contact the Engineer if any field changes are required. Any revisions to the plans may require FEMA, and Guadalupe County approvals.

10. Miscellaneous

The Contractor shall video and photograph the project site before commencing construction.

The Contractor's working hours shall be Monday through Friday from 7 am to 6 pm. The Contractor shall not work weekends or holidays unless approved by City of Santa Clara.

11. Construction Sequencing

The Contractor may construct Santa Clara Loop and Wetz Road independently of each other.

The Contractor shall submit a construction sequencing plan and obtain the engineer's approval before commencing construction.

General construction sequencing for Santa Clara Loop:

- Mobilization
- Install SW3P
- Temporary Traffic Control
- Preparation of Right of Way and demolition
- Roadside ditch improvements
- Clean culverts
- Culvert and headwall installation
- Establish traffic controls for base reclamation/Seal Coat (one lane, one-way traffic loop - 2 phases)
- Lime treatment of base
- Establish temporary traffic controls for concrete pavement
- Concrete pavement installation
- Seal coat placement
- Sign installation
- Seeding and watering
- Remove SW3P
- Clean up
- Demobilize

General construction sequencing for Wetz Road:

- Mobilization
- Temporary Traffic Control
- Install SW3P
- Preparation of Right of Way and demolition
- Install Temp Mailboxes
- Clean roadside ditches
- Clean culverts
- Culvert and headwall installation
- Establish temporary traffic controls for base reclamation/Seal Coat (one-lane, two-way traffic controlled by temporary traffic signals - 2 Phases)
- Lime treatment of base
- Seal coat placement
- Sign installation
- Seeding and watering
- Remover SW3P
- Clean up
- Demobilize

Freeland Turk ENGINEERING GROUP
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STANDARD NOTES

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General Notes

Item 100 - Preparing Right of Way

The Contractor shall remove existing driveway culverts, overlaying concrete, asphalt, and other miscellaneous items indicated on the plans.

Item 150 - Blading

The Contractor shall blade between the edge reclaimed flexible base and the roadside ditch to create positive drainage from the pavement into the roadside ditch. The Contractor shall remove excess material generated during blading operations.

Item 164 - Seeding for Erosion Control

The Contractor shall permanently seed all areas where the Contractor has removed or disturbed vegetation due to construction activities.

The Contractor shall provide seed per Table 1 (rural) for District 15 (San Antonio) and clay soils.

The Contractor shall apply the seed using cellulose fiber mulch.

Item 168 - Vegetative Watering

The Contractor shall water all areas permanently seeded at a rate of ¼" per week for four weeks.

The Contractor shall purchase, obtain and transport water at his expense. The City of Santa Clara will not supply the Contractor with water for this project.

Item 247 - Flexible Base

The Contractor shall furnish and deliver new flexible base material (Type A, Grade I-II) to augment existing base material as necessary to construct a 22' wide (8" depth) roadbed. The existing roadbed generally varies between 18' wide and 22.5' wide.

Item 260 - Lime Treatment (Road-Mixed)

The Contractor shall furnish hydrated lime slurry only.

The target lime content is 6% hydrated lime by dry soil weight (75 pounds per square yard) for a depth of 8".

The Contractor shall pulverize and scarify the existing and new base material to a depth of 8".

No material shall be allowed from a borrow source.

Upon successful proof rolling (no soft spots), the Contractor is not required to compact the subgrade as described in paragraph 4.5.2.1.

Traffic is allowed on the compacted base material during the mellow and curing periods.

The Contractor shall cure by sprinkling water, unless otherwise approved.

Item 316 - Seal Coat

Road Alignment

Horizontal Alignment - The Contractor shall perform full-depth reclamation of the existing road base material and place two courses of seal coat to complete the road. The alignment of the reclaimed road is in the same place as the existing gravel road, more or less. The centerline location of the road is provided on the plans. The road's centerline shall be at least 11' from any concrete driveways. The Contractor may make minor adjustments in the road alignment to meet this requirement.

The minimum width of the 2-course seal coat is 20'.

The minimum width of the reclaimed road base is 22'. In areas where the existing gravel road is less than 22' wide, the Contractor shall excavate and place 8" of additional flexible base material to construct a minimum 22' wide road base.

The Contractor shall construct the new flexible base and 2-course seal coat between the edge of the pavement and existing asphalt and concrete driveways.

Vertical Alignment - The Contractor shall grade the reclaimed base surface in place and match the same elevations of the existing road base material, more or less. The Contractor may make minor adjustments to the road grades to match driveway elevations and create positive drainage.

The Contractor shall grade the reclaimed base surface to create a roadway crown. The cross-slope of the surface shall be at least 2% and no more than 4%. The roadway crown shall be washed out at locations shown on the plans.

The Contractor shall grade the road surface to construct a pavement surface that freely drains into the roadside ditch or swale. Before placing the 2-course seal coat, the Contractor shall blade the edge of the road and remove any vegetation or obstructions that block stormwater from reaching the roadside ditch or swales. Regardless of location, the Contractor shall construct a freely draining road surface that shall not pond water. The Contractor shall notify the engineer and request additional design guidance if this cannot be achieved with the information provided in the plans.

The Contractor shall install a two-course seal coat.

Aggregate - First-course aggregate shall be Grade 3, Type B, or Type PB (applied at a minimum of 1 cy per 90 sy), and the second-course aggregate shall be Grade 4, Type PB (applied at a minimum of 1 cy per 100 sy).

Asphalt - AC-5 application rate shall be 0.25-0.35 g/sy (1st course) and 0.20-0.25 (2nd Course), or HFRS-2P application rate shall be 0.35-0.40 g/sy (1st course) and 0.30-0.35 (2nd Course)

The City of Santa Clara is not providing the Contractor with any temporary aggregate stockpiles locations outside the project area.

This item is paid by the square yard to include all work as specified, complete in place.

Item 360 - Concrete Pavement

The Contractor shall saw-cut joints within 6 to 12 hours of concrete placement.

Item 432 - Riprap

The contractor shall use class A reinforced concrete.

Item 460 - Corrugated Metal Pipe

The Contractor shall use galvanized steel circular corrugated metal pipe.

Item 464 - Reinforced Concrete Pipe

The Contractor shall furnish Class IV circular pipe.

Item 467 - Safety End Treatment

The Contractor shall install precast safety end treatment (Type II - Parallel Drainage) where shown on the plans.

Item 480 - Cleaning Existing Culverts

The Contractor shall clean all existing culverts shown on the plans, including existing culverts shown on N. Santa Clara Road and Youngsford Road.

The Contractor shall remove all materials from the inside of the existing driveway culvert pipes shown on the plans.

The Contractor shall remove blockage (dirt, debris, and vegetation) for an appropriate distance upstream and downstream of each culvert and create positive flow into and out of the culverts. The minimum slope is 1%.

The Contractor shall repair the partially crushed ends of existing corrugated metal pipes driveway culverts by reforming the metal to its original circular diameter, more or less.

Item 500 - Mobilization

The City of Santa Clara does not provide any staging areas outside the project site.

The project site is located within the existing right-of-way for Wetz Road (between Youngsford Road and Hillside Estates) and Santa Clara Loop.

The project site consists of the existing right-of-way of Wetz Road, Youngsford Road, Santa Clara Loop, N. Santa Clara Road, Brisco Road, and Cody Lane.

The City of Santa Clara is not supplying any staging areas outside the project site.

Item 502 - Barricades, Signs, and Traffic Handling

The Contractor shall always maintain access to all adjacent property and driveways during construction.

The Contractor shall maintain at least one open traffic lane during construction operations on Santa Clara Loop and Wetz Road, except where shown on the plans.

The Contractor shall contact and coordinate with landowners whose driveways will be closed due to construction. The Contractor shall inform the owner of the beginning and end of driveway closures and other miscellaneous driveway-related construction activities to minimize inconvenience to adjacent residents.

Before construction, the Contractor shall submit temporary One-Way traffic control plans to the engineer for approval. A professional engineer shall prepare the temporary traffic control plans for One-Way traffic handling per the Texas Manual on Uniform Traffic Control Devices and other applicable design criteria.

The general traffic control approach for Santa Clara Loop:

Concrete Pavement - The Contractor may close Santa Clara Loop to create a work zone for the concrete pavement construction. The Contractor shall maintain two-lane, two-way traffic in all other areas.

Lime Treatment and Seal Coat - The Contractor may close half of the street and use the other half to maintain a one-lane, one-way traffic loop. This approach requires two traffic control sequences.

Miscellaneous - The Contractor may accomplish other work by establishing one-lane closures controlled by flagman.

The general traffic control approach for Wetz Road:

Lime Treatment and Seal Coat - The Contractor may close half the street and use the other half to maintain one-lane, two-way traffic. This approach may require portable traffic signals due to the limited site distance at the crest of Wetz Road. This approach requires at least two traffic control sequences.

Miscellaneous - The Contractor may accomplish other work by establishing one-lane closures controlled by flagman.

Item 506 - Temporary Erosion, Sediment, and Environmental Controls

See plans.

Item 510 - One-Way Traffic Control

The Contractor shall maintain at least one open traffic lane during construction operations using the flagger control method or portable traffic signals. Before construction, the Contractor shall submit temporary One-Way traffic control plans to the engineer for approval. A professional engineer shall prepare the temporary traffic control plans for One-Way traffic handling per the Texas Manual on Uniform Traffic Control Devices and other applicable design criteria.

The measurement for this item shall be lump sum.

Item 530 - Intersections, Driveways, and Turnouts

The Contractor shall use Class A concrete to repair driveways and install concrete pavement.

The Contractor shall use flexible base material (Item 247) for gravel driveways.

Item 560 - Mailbox Assemblies

The Contractor shall preserve and protect all existing mailboxes during blading and roadside ditch construction. The Contractor shall not interfere with mail delivery. If necessary, the Contractor shall remove mailboxes in conflict with construction and reinstall the mailbox upon completion of construction. If the Contractor removes a mailbox, a temporary mailbox shall be provided until it is permanently re-installed.

Item 644 - Signs

See Plans.

Item 760 - Cleaning and Reshaping Ditches

The Contractor shall clean and reshape both roadside ditches on Wetz Road as indicated on the plans. The Contractor removes material from the ditch where ponding occurs to create a freely draining ditch. Otherwise, the Contractor shall maintain existing ditch flowlines. The Contractor shall contact the engineer if specific grades and elevation are required to eliminate ponding.

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0339
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WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
STANDARD NOTES

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SHEET NO.
C0.4

N

0 200' 400'

SCALE: 1" = 200'

12 / C7.7 — 25LF± SILT FENCE

12 / C7.7 — 25LF± SILT FENCE

12 / C7.7 — 50LF± SILT FENCE

THE CONTRACTOR MAY CLOSE SANTA CLARA LOOP AT THIS LOCATION TO CONSTRUCT CONCRETE PAVEMENT

13 / C7.8 — 120LF± ROCK FILTER BERM

60LF± ROCK FILTER BERM — 13 / C7.8

12 / C7.7 — 25LF± SILT FENCE

ROAD WORK AHEAD

END ROAD WORK

ROAD WORK AHEAD

240'

120'

ROAD WORK AHEAD

END ROAD WORK

240'

120'

ROAD WORK AHEAD

SANTA CLARA LOOP

SANTA CLARA LOOP

SANTA CLARA LOOP

N. SANTA CLARA ROAD

CODY LANE

BRISCO ROAD

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WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
TRAFFIC AND EROSION CONTROL PLAN

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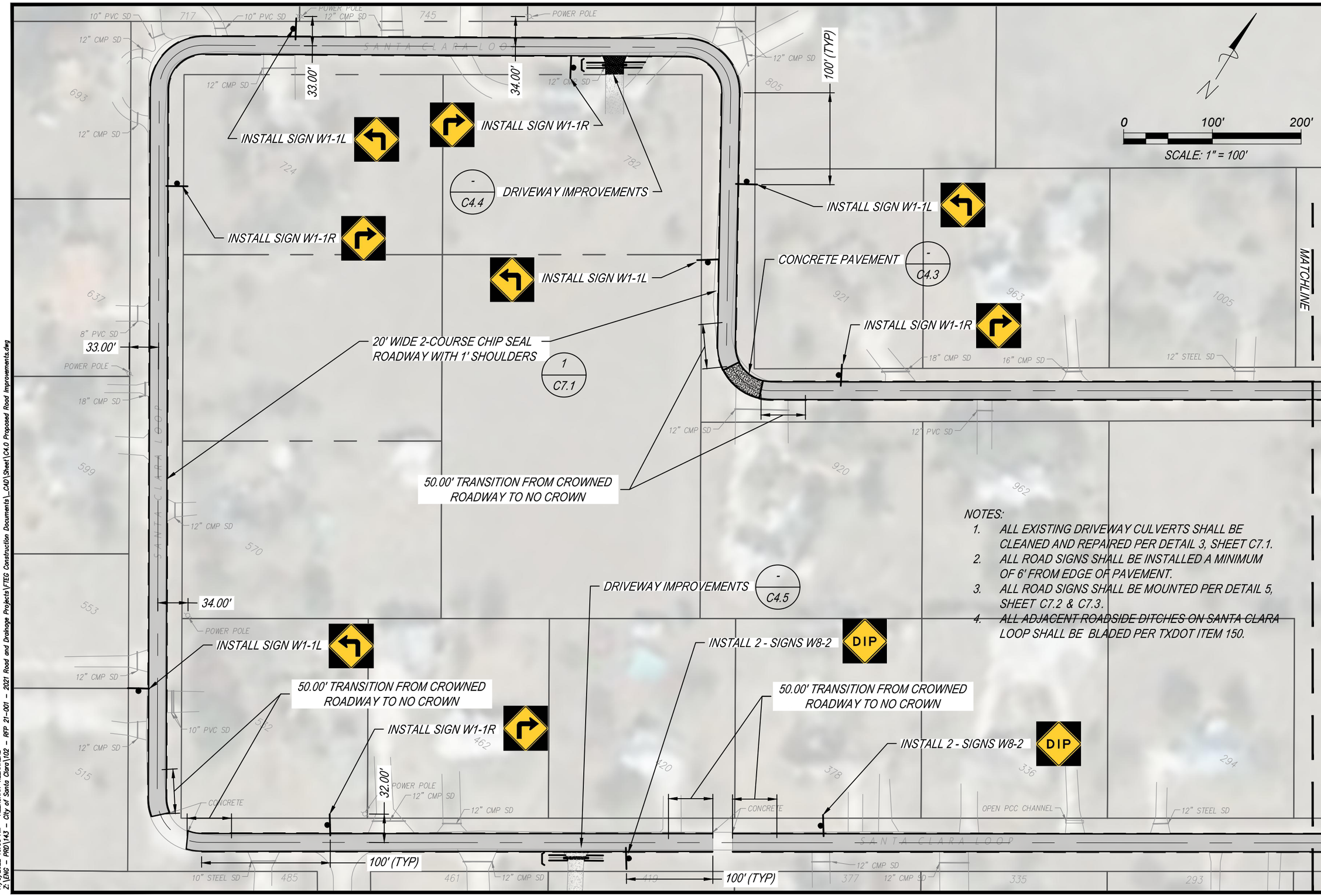
SHEET NO.

C2.1



NOTES:

1. ALL EXISTING DRIVEWAY CULVERTS SHALL BE CLEANED AND REPAIRED PER DETAIL 3, SHEET C7.1.
2. ALL ROAD SIGNS SHALL BE INSTALLED A MINIMUM OF 6' FROM EDGE OF PAVEMENT.
3. ALL ROAD SIGNS SHALL BE MOUNTED PER DETAIL 5, SHEET C7.2 & C7.3.
4. ALL ADJACENT ROADSIDE DITCHES ON SANTA CLARA LOOP SHALL BE BLADED PER TXDOT ITEM 150.

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WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
SITE PLAN - SANTA CLARA LOOP

DRAFTED BY:	TB
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SHEET NO.
C4.1

SPEED LIMIT 25

INSTALL SIGN R2-1 (25MPH)

- / C4.6

DRIVEWAY AND GRADING IMPROVEMENTS

12" STEEL SD

12" CMP SD

32.00'

200'

18" CMP SD

S A N T A C L A R A L O O P

12" STEEL SD

12" CMP SD

FNC CORNER

12" STEEL SD

12" STEEL SD

33.00'

POWER POLE

R20.00' (TYP)

18" 6:1 PRECAST SAFETY END TREATMENT

11 / C7.6

N. SANTA CLARA ROAD

1005 1089 1131 622 1234 1248 1046 1088 1130 1172

0 100' 200'

SCALE: 1" = 100'

20' WIDE 2-COURSE CHIP SEAL ROADWAY WITH 1' SHOULDERS

1 / C7.1

MATCHLINE

SPEED LIMIT 25

INSTALL SIGN R2-1 (25MPH)

18" CMP SD

200'

18" CMP SD

BRICK MAIL BOX

12" CMP SD

12" STEEL SD

S A N T A C L A R A L O O P

12" STEEL SD

16.00'

R20.00' (TYP)

18" 6:1 PRECAST SAFETY END TREATMENT

11 / C7.6

N. SANTA CLARA ROAD

210 294 168 126 293 167 125 1247 1233

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SITE PLAN - SANTA CLARA LOOP

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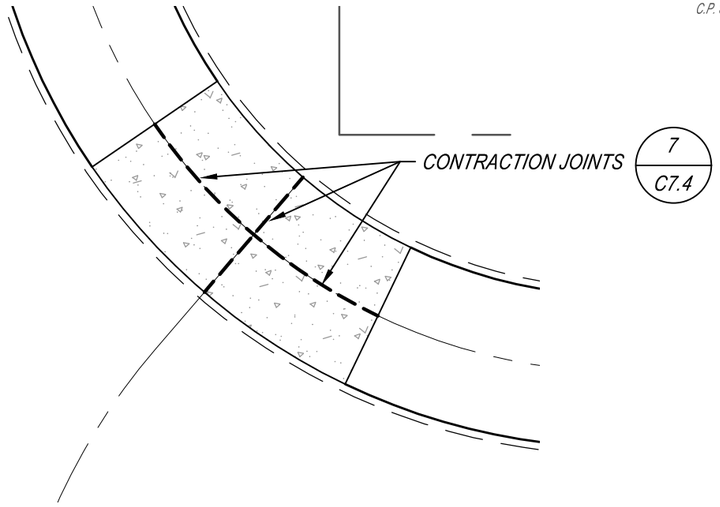
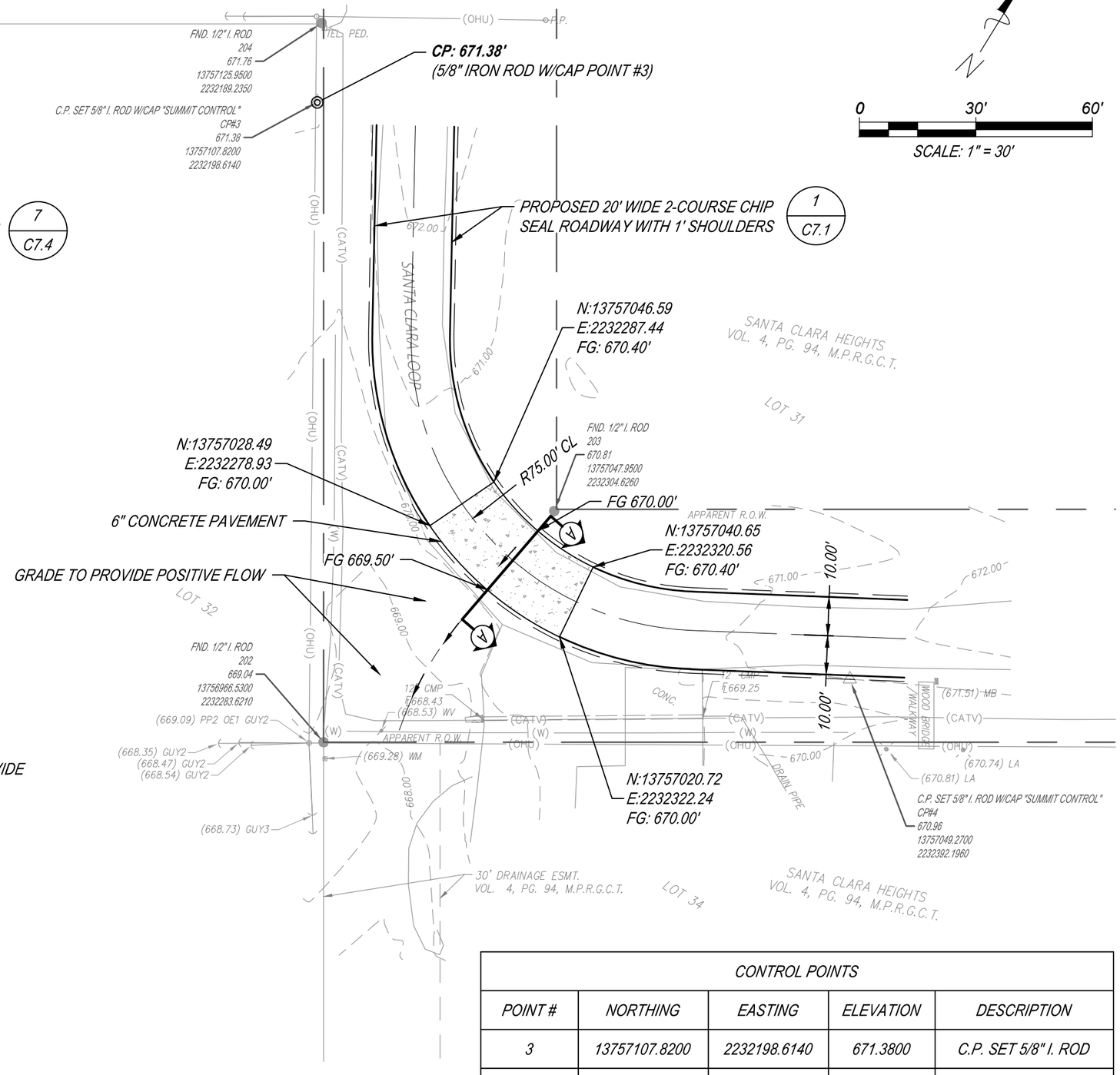
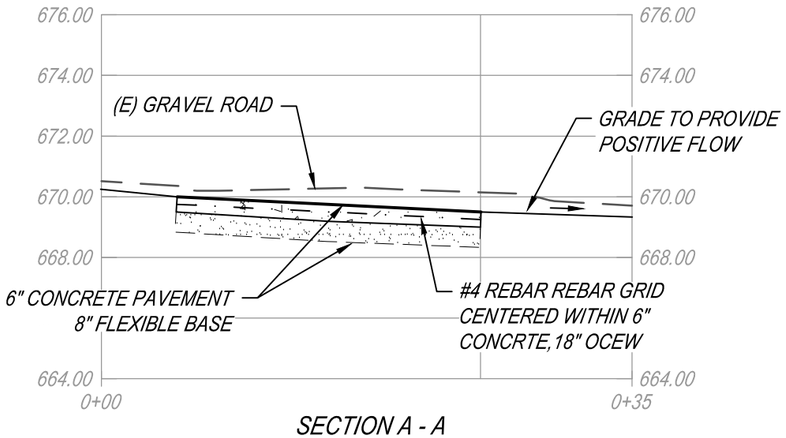


CONCRETE JOINT LAYOUT
SCALE: 1" = 20'





SECTION A - A
SCALE: H: 1" = 10' V: 1" = 5'

CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
3	13757107.8200	2232198.6140	671.3800	C.P. SET 5/8" I. ROD
4	13757049.2700	2232392.1960	670.9600	C.P. SET 5/8" I. ROD

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CONCRETE PAVEMENT

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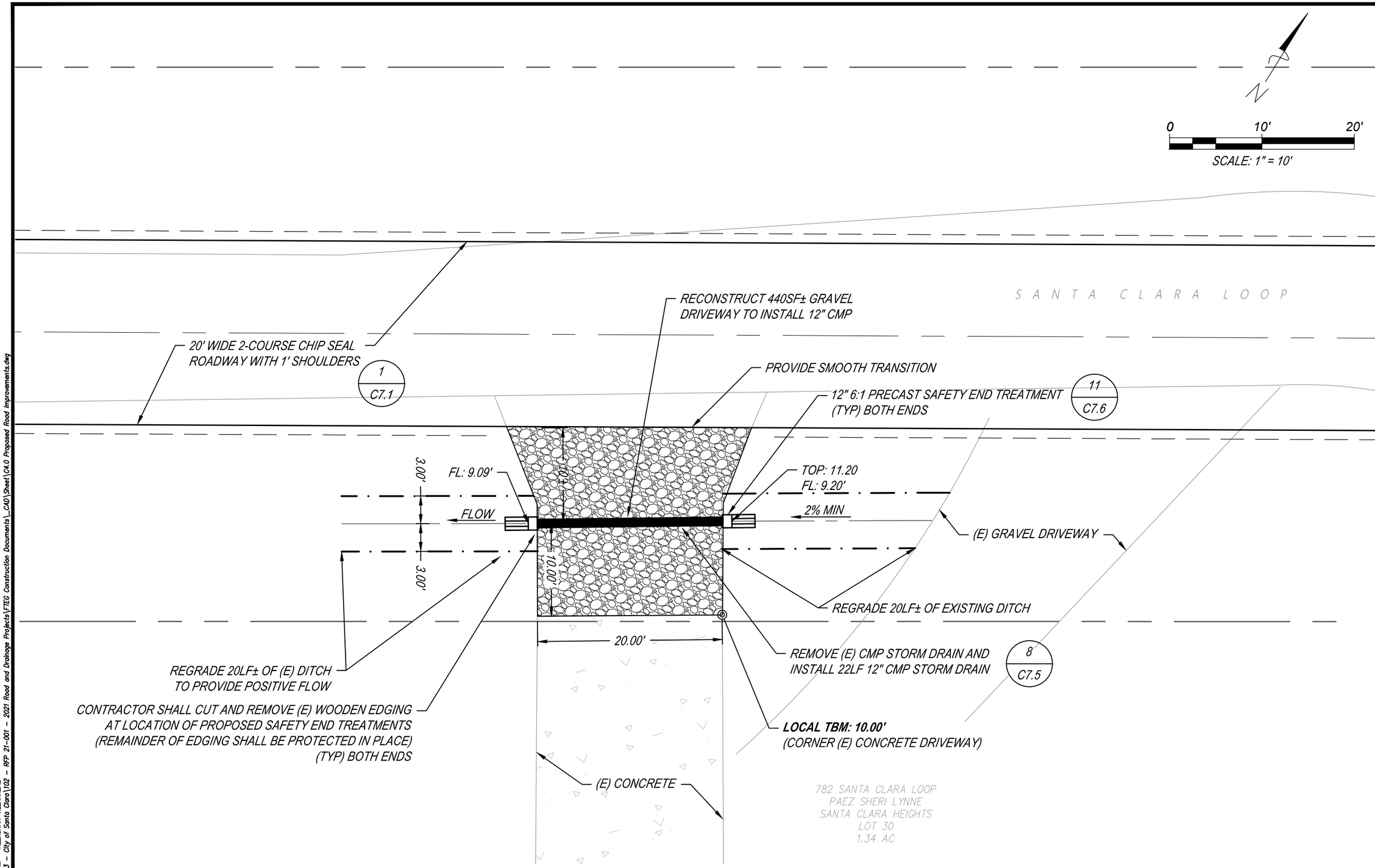

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DRIVEWAY IMPROVEMENTS

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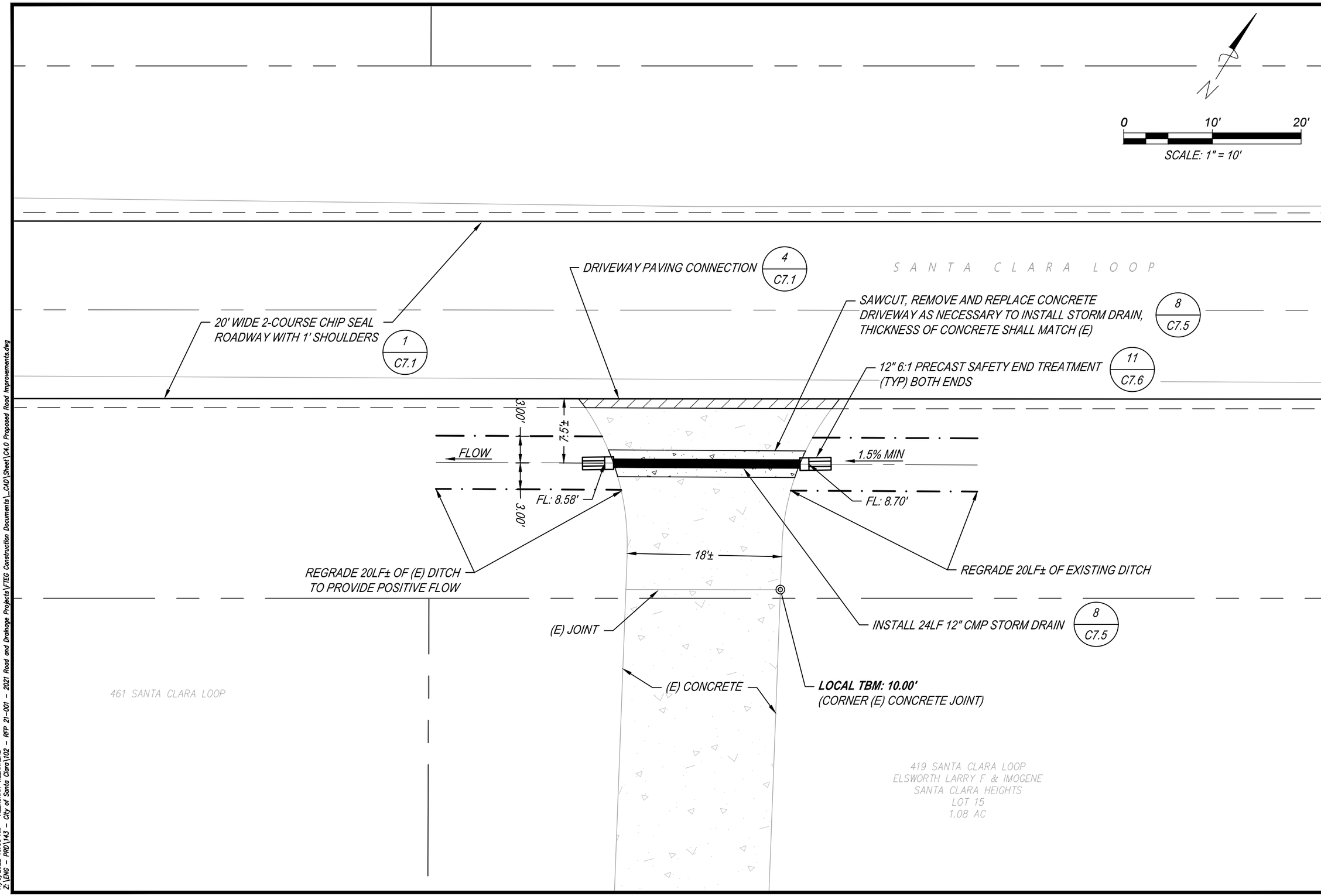

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(830) 438-0339
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
DRIVEWAY IMPROVEMENTS

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.5

1089 SANTA CLARA LOOP
WARREN BARRY DON
SANTA CLARA HEIGHTS
LOT 39
1.08 AC

1131 SANTA CLARA LOOP
FREDERICK W GLENN JR & MOLLY M
SANTA CLARA HEIGHTS
LOT 41
1.08 AC

0 20' 40'
SCALE: 1" = 20'

3 / C7.1 (E) 12" CMP STORM DRAIN

INSTALL 100LF± CONCRETE CHANNEL 9 / C7.5

(E) AC DRIVEWAY

REMOVE (E) AC DRIVEWAY AND INSTALL
285SF± 6" CONCRETE DRIVEWAY

2.00'

MATCH (E) GRADE

MATCH (E) GRADE

(E) CONCRETE DRIVEWAY

FLOW

0.75% MIN

0.75% MIN

FLOW

FL: 8.60'

FL: 9.35'

FL: 9.43'

LOCAL TBM: 10.00'
(CORNER (E) CONCRETE DRIVEWAY)

S A N T A C L A R A L O O P

MATCH (E) GRADE

INSTALL 40LF±
CONCRETE CHANNEL 9 / C7.5

20' WIDE 2-COURSE CHIP SEAL
ROADWAY WITH 1' SHOULDERS 1 / C7.1

DETAIL

CONCRETE CHANNEL

16.00'

14.00'

MATCH (E) GRADE
SAWCUT AND PROVIDE
SMOOTH TRANSITION

6" CONCRETE DRIVEWAY 285SF±

1.00'

6.50'±

2% MIN

0.75% MIN

0.5% MIN

0.75% MIN

R15.00'

R15.00'

1.00'

9.50'

2% MIN

4 / C7.1 DRIVEWAY PAVING CONNECTION

20' WIDE 2-COURSE CHIP SEAL
ROADWAY WITH 1' SHOULDERS

DRIVEWAY APRON DETAIL
SCALE: 1" = 10'

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
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(830) 438-0239
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WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
DRIVEWAY AND GRADING IMPROVEMENTS

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.6

END ROAD WORK

END ROAD WORK

ROAD WORK AHEAD

ROAD WORK AHEAD

240' (TYP)

30LF± ROCK FILTER BERM

13
C7.8

25LF± SILT FENCE

12
C7.7

WETS ROAD

12
C7.7

25LF± SILT FENCE

WETS ROAD

LIMITED SITE DISTANCE AT CREST

MATCHLINE

240' (TYP)

YOUNGSFORD ROAD

12
C7.7

25LF± SILT FENCE

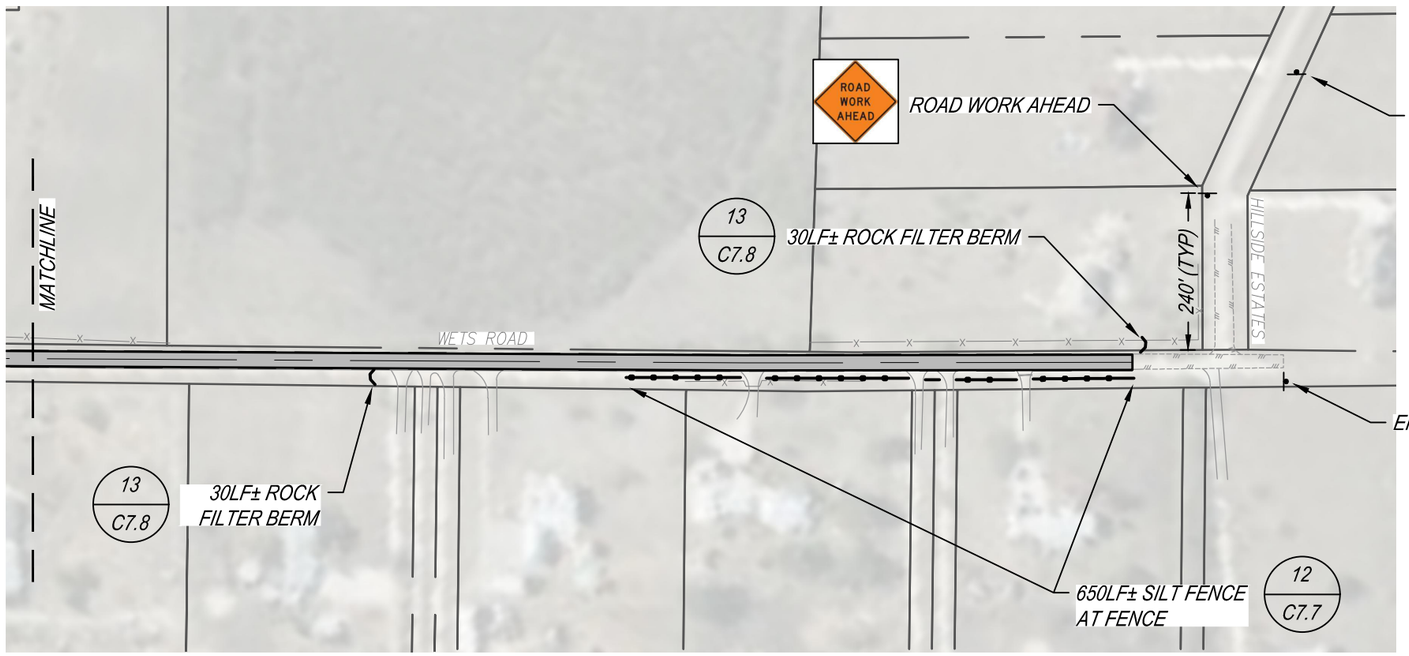
ROAD WORK AHEAD

END ROAD WORK

N

0 200' 400'

SCALE: 1" = 200'

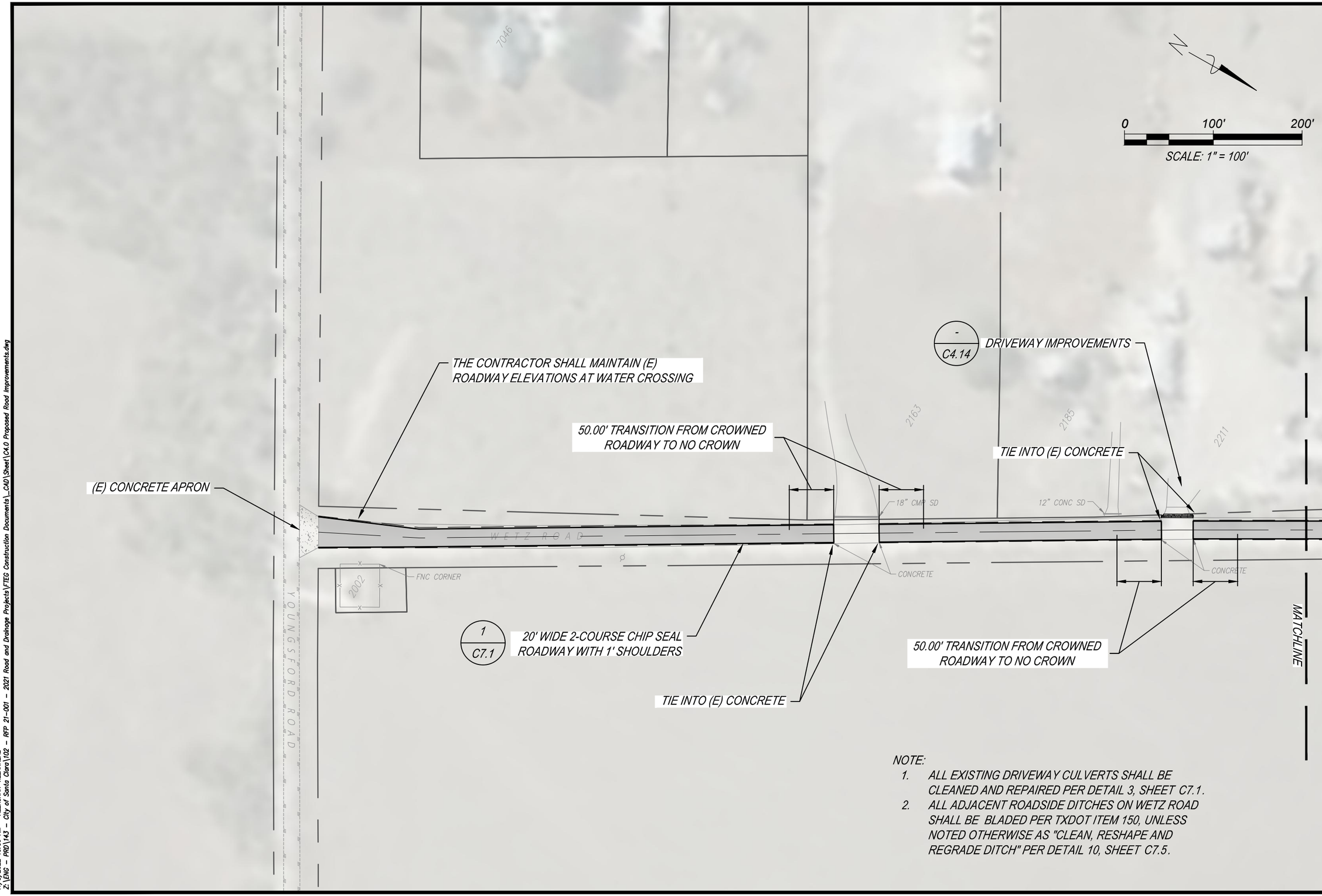


Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0339
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
TRAFFIC AND EROSION CONTROL PLAN

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.7



NOTE:
1. ALL EXISTING DRIVEWAY CULVERTS SHALL BE CLEANED AND REPAIRED PER DETAIL 3, SHEET C7.1.
2. ALL ADJACENT ROADSIDE DITCHES ON WETZ ROAD SHALL BE BLADED PER TXDOT ITEM 150, UNLESS NOTED OTHERWISE AS "CLEAN, RESHAPE AND REGRADE DITCH" PER DETAIL 10, SHEET C7.5.

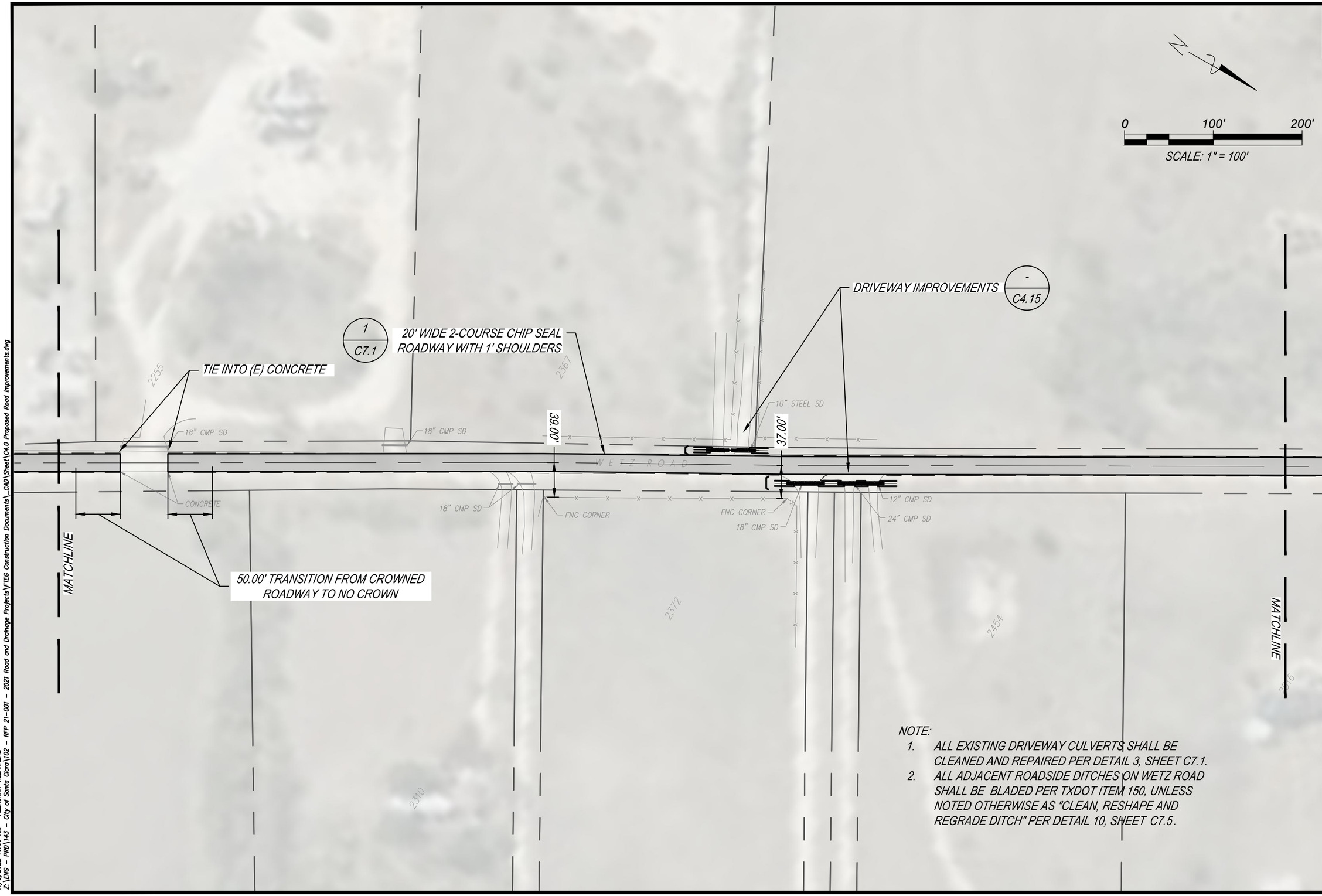
Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0329
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP ROAD AND DRAINAGE IMPROVEMENTS

SITE PLAN - WETZ ROAD

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.8



NOTE:

1. ALL EXISTING DRIVEWAY CULVERTS SHALL BE CLEANED AND REPAIRED PER DETAIL 3, SHEET C7.1.
2. ALL ADJACENT ROADSIDE DITCHES ON WETZ ROAD SHALL BE BLADED PER TXDOT ITEM 150, UNLESS NOTED OTHERWISE AS "CLEAN, RESHAPE AND REGRADE DITCH" PER DETAIL 10, SHEET C7.5.

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0329
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
SITE PLAN - WETZ ROAD

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.9

NOTE:

1. ALL EXISTING DRIVEWAY CULVERTS SHALL BE CLEANED AND REPAIRED PER DETAIL 3, SHEET C7.1.
2. ALL ADJACENT ROADSIDE DITCHES ON WETZ ROAD SHALL BE BLADED PER TXDOT ITEM 150, UNLESS NOTED OTHERWISE AS "CLEAN, RESHAPE AND REGRADE DITCH" PER DETAIL 10, SHEET C7.5.

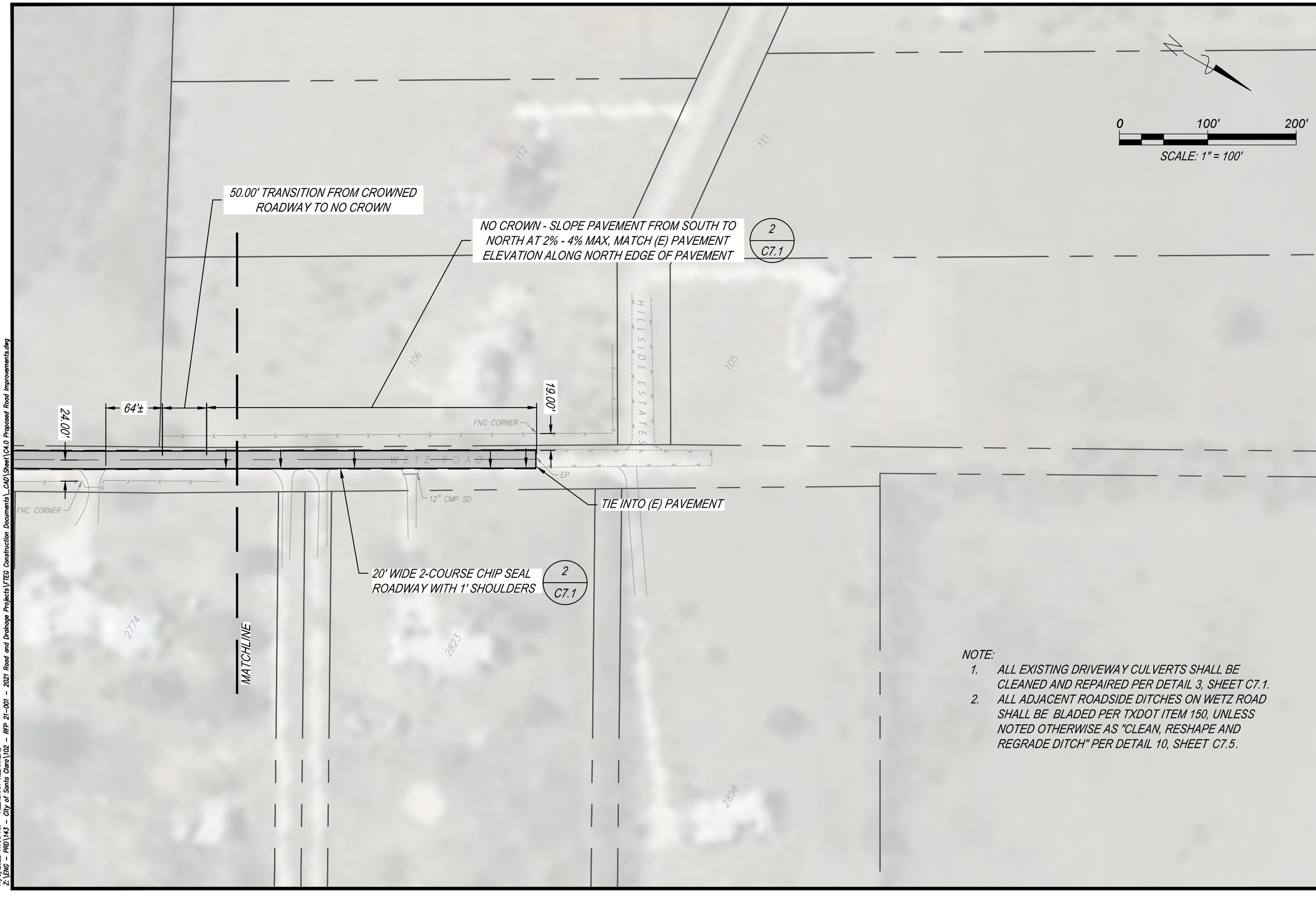
Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0329
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP ROAD AND DRAINAGE IMPROVEMENTS

SITE PLAN - WETZ ROAD

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.10



NOTE:

1. ALL EXISTING DRIVEWAY CULVERTS SHALL BE CLEANED AND REPAIRED PER DETAIL 3, SHEET C7.1.
2. ALL ADJACENT ROADSIDE DITCHES ON WETZ ROAD SHALL BE BLADED PER TXDOT ITEM 150, UNLESS NOTED OTHERWISE AS "CLEAN, RESHAPE AND REGRADE DITCH" PER DETAIL 10, SHEET C7.5.

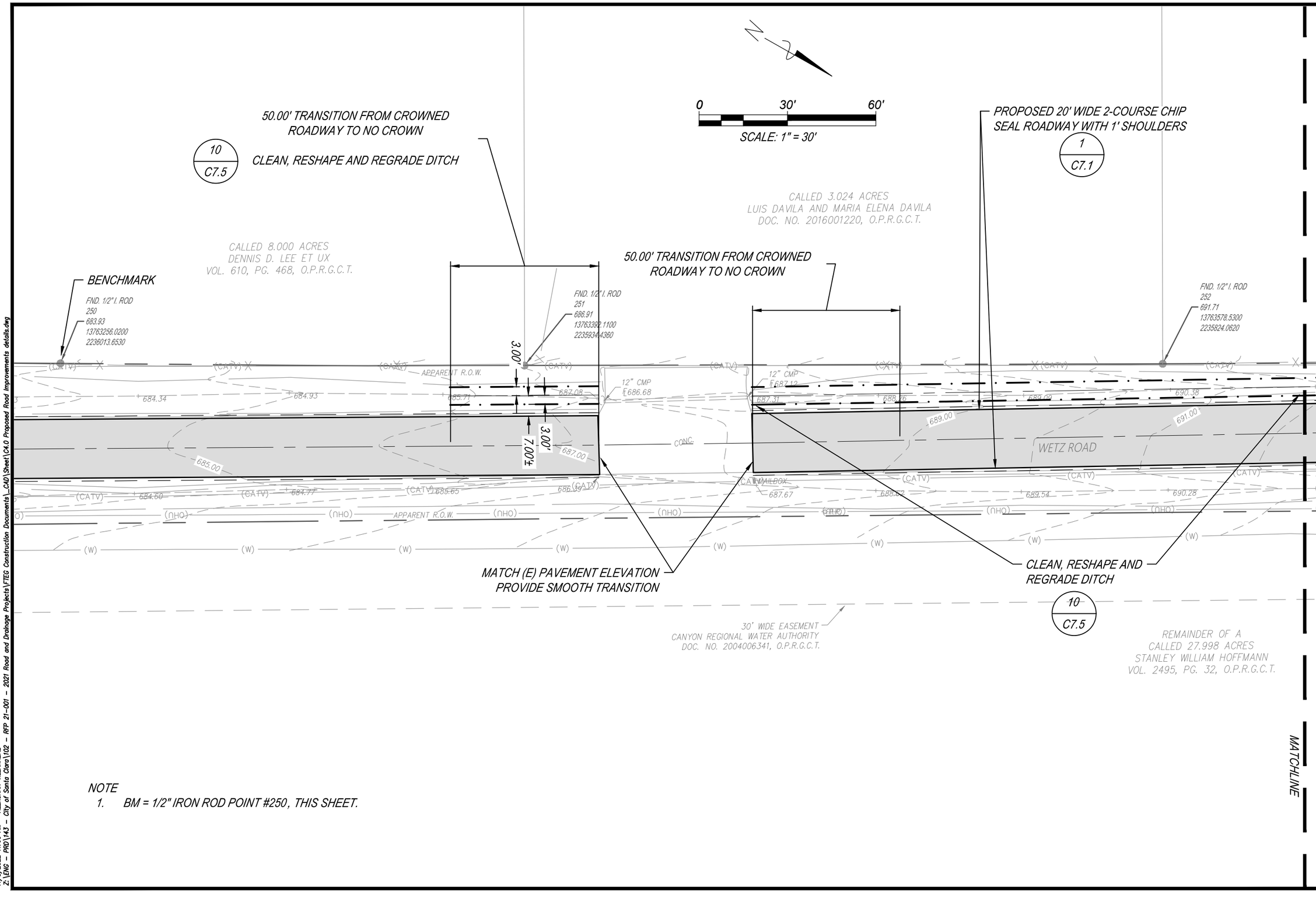
Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0239
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS

SITE PLAN - WETZ ROAD

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.11



NOTE

1. BM = 1/2" IRON ROD POINT #250, THIS SHEET.

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0329
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
DRAINAGE IMPROVEMENTS

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.12

11/8/2022 11:00 AM - ALEXSKAR VILLARREAL
Z:\ENG - PRO\43 - City of Santa Clara\02 - RFP 21-001 - 2021 Road and Drainage Projects\FTEG Construction Documents_C4D\Sheet\C4.0 Proposed Road Improvements details.dwg

CALLED 5.386 ACRES
JAIME ROSAS
DOC. NO. 202099014743, O.P.R.G.C.T.

0 30' 60'
SCALE: 1" = 30'

- / C4.14 DRIVEWAY IMPROVEMENTS

50.00' TRANSITION FROM CROWNED ROADWAY TO NO CROWN

50.00' TRANSITION FROM CROWNED ROADWAY TO NO CROWN

PROPOSED 20' WIDE 2-COURSE CHIP SEAL ROADWAY WITH 1' SHOULDERS

1 / C7.1

50.00' TRANSITION FROM CROWNED ROADWAY TO NO CROWN

CLEAN, RESHAPE AND REGRADE DITCH

50.00' TRANSITION FROM CROWNED ROADWAY TO NO CROWN

CALLED 5.026 ACRES
ALBERTO J. MEDRANO
DOC. NO. 2015024180, O.P.R.G.C.T.

694.00
12" CMP
692.55
12" CMP
693.64
15" RCP
692.32
15" RCP
692.33
693.92
694.58
695.51
696.45
696.96
697.37
15" CMP
697.32
15" CMP
698.19
698.29
3.00'
3.00'
5.00'
696.00
WETZ ROAD
CONC.
CONC.
693.00
691.77
693.48
694.46
695.30
696.10
696.68
697.54
698.00
698.13
691.25
692.27
APPARENT R.O.W.
MAILBOX
(CATV)
(OHU)
(W)

MATCH (E) PAVEMENT ELEVATION
PROVIDE SMOOTH TRANSITION

CLEAN, RESHAPE AND REGRADE DITCH

10 / C7.5

30' WIDE EASEMENT
CANYON REGIONAL WATER AUTHORITY
DOC. NO. 2004006341, O.P.R.G.C.T.

MATCH (E) PAVEMENT ELEVATION
PROVIDE SMOOTH TRANSITION

REMAINDER OF A
CALLED 27.998 ACRES
STANLEY WILLIAM HOFFMANN
VOL. 2495, PG. 32, O.P.R.G.C.T.

MATCHLINE

NOTE
1. BM = 1/2" IRON ROD POINT #250, SEE SHEET C4.12.

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
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TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
DRAINAGE IMPROVEMENTS

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.13

NOTES
1. CONTRACTOR SHALL COORDINATE DRIVEWAY CLOSURE WITH LAND OWNER.
2. CONTRACTOR SHALL CONSTRUCT EAST HALF OF DRIVEWAY FIRST, THEN CONSTRUCT WEST HALF OF DRIVEWAY.

2185 WETZ ROAD
JAIME ROSAS
211 SUR: JOSEPHA
5.386 AC

0 10' 20'
SCALE: 1" = 10'

6 / C7.2

REMOVE AND REPLACE 600SF± CONCRETE DRIVEWAY TO INSTALL STORM DRAIN, THICKNESS OF CONCRETE SHALL MATCH (E)

INSTALL 47LF 18" RCP STORM DRAIN — 8 / C7.5

18" 6:1 PRECAST SAFETY END TREATMENT (TYP) BOTH ENDS — 11 / C7.6

694.00

FL: 692.60'

12" CMP
E 692.55

39.29'

48.00'

12" CMP
E 693.64

13.34'

693.92

FLOW

2% MIN

694.58

3.00'

3.00'

FL: 693.45'

15" RCP
E 692.33

10 / C7.5

CLEAN, RESHAPE AND REGRADE DITCH

(E) CONCRETE

W E T Z R O A D

MAILBOX

LOCAL TBM: 10.00'
(SET MAG NAIL)

693.48

694.46

P.P.

1 / C7.1

PROPOSED 20' WIDE 2-COURSE CHIP SEAL ROADWAY WITH 1' SHOULDERS

NOTE
1. BM = 1/2" IRON ROD POINT #250, SEE SHEET C4.12.

(CATV) (OHU) (W)

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0239
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
DRIVEWAY IMPROVEMENTS

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C4.14

11/8/2022 11:00 AM – ALEXSKAR VILLARREAL
Z:\ENG – PRO\143 – City of Santa Clara\02 – RFP 21-001 – 2021 Road and Drainage Projects\TEC Construction Documents_CAD\Sheet\C4.0 Proposed Road Improvements details.dwg

2371 WETZ ROAD
MAR JULIO
211 SUR: JOSEPHA
5.026 AC

2533 WETZ ROAD
CALE DAVID DONALD
211 SUR: JOSEPHA
25.485 AC

(E) GRAVEL

(E) GRAVEL

LOCAL TBM: 10.00'
(SET MAG NAIL)

RECONSTRUCT 12LF± GRAVEL DRIVEWAY TO INSTALL 18" CMP

RECONSTRUCT 14LF± GRAVEL DRIVEWAY TO INSTALL 18" CMP

12.00'

REMOVE (E) STEEL STORM DRAIN AND INSTALL 16LF 18" CMP STORM DRAIN — 8 / C7.5

20' WIDE 2-COURSE CHIP SEAL ROADWAY WITH 1' SHOULDERS — 1 / C7.1

FL: 7.33'

6.00'

18.00'

FLOW

FL: 8.01'

18" 6:1 PRECAST SAFETY END TREATMENT (TYP) ALL ENDS — 11 / C7.6

2% MIN

REMOVE (E) CMP STORM DRAIN AND INSTALL 16LF 18" CMP STORM DRAIN — 8 / C7.5

RECONSTRUCT 14LF± GRAVEL DRIVEWAY TO INSTALL 18" CMP

FL: 7.83'

FL: 7.57'

REGRADE 20LF± OF EXISTING DITCH — 10 / C7.5

REMOVE (E) CMP STORM DRAIN AND INSTALL 16LF 18" CMP STORM DRAIN — 8 / C7.5

10 / C7.5 REGRADE 20LF± OF (E) DITCH TO PROVIDE POSITIVE FLOW

W E T Z R O A D

6.00'

FL: 10.98'

FL: 12.80'

FL: 13.40'

FL: 14.40'

FL: 15.00'

8 / C7.5 INSTALL 14LF 18" CMP STORM DRAIN PROVIDE 4" MIN PIPE COVER

20.00'

FLOW

2% MIN

FL: 11.80'

REGRADE 20LF± OF (E) DITCH TO PROVIDE POSITIVE FLOW

11 / C7.6 18" 6:1 PRECAST SAFETY END TREATMENT (TYP) ALL ENDS

10 / C7.5 REGRADE (E) DITCH TO PROVIDE POSITIVE FLOW

8 / C7.5 REMOVE (E) CMP STORM DRAIN AND INSTALL 34LF 18" CMP STORM DRAIN

RECONSTRUCT 14LF± GRAVEL DRIVEWAY TO INSTALL 18" CMP

RECONSTRUCT 32LF± GRAVEL DRIVEWAY TO INSTALL 18" CMP

10 / C7.5 REGRADE 20LF± OF EXISTING DITCH

2372 WETZ ROAD
FOURNIER DENNIS & TINA JEAN
NEW BRAUNFELS HEIGHTS
LOT 17
5.098 AC

2400 WETZ ROAD
LIPKE SHANE E & SARAH R
NEW BRAUNFELS HEIGHTS
LOT 18
5.11 AC

2424 WETZ ROAD
TSCHOEPE CLARA J
NEW BRAUNFELS HEIGHTS
LOT 16
4.954 AC

2454 WETZ ROAD
BATEMAN PAMELA
NEW BRAUNFELS HEIGHTS
LOT 15
5.104 AC

N

0 20' 40'

SCALE: 1" = 20'

THESE PLANS CONTAIN AERIAL AND PROPERTY LINE INFORMATION FROM VARIOUS GIS SOURCES AND MAY NOT BE ACCURATE. THE GIS DATA PROVIDED IS INTENDED TO PROVIDE THE READER WITH GENERAL PROJECT SITE INFORMATION. THE CONTRACTOR SHALL USE SPECIFIC DIMENSIONS AND DETAILS PROVIDED IN THE PLANS FOR HORIZONTAL AND VERTICAL LAYOUT OF IMPROVEMENTS.

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0339
TBPE FIRM F-21047

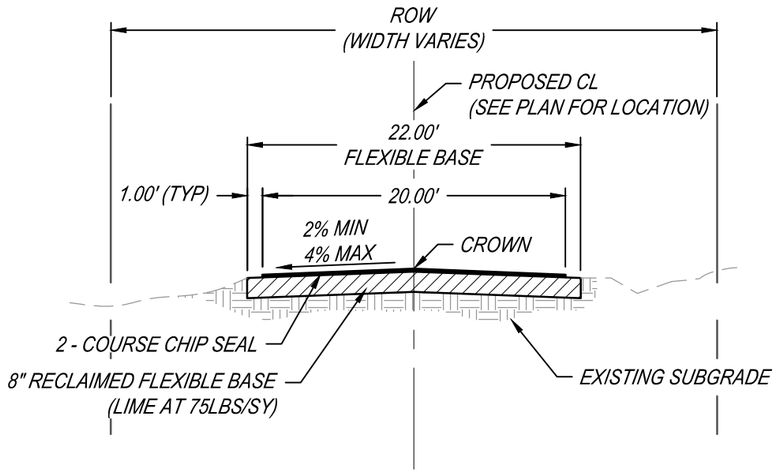
WETZ ROAD AND SANTA CLARA LOOP ROAD AND DRAINAGE IMPROVEMENTS

DRIVEWAY IMPROVEMENTS

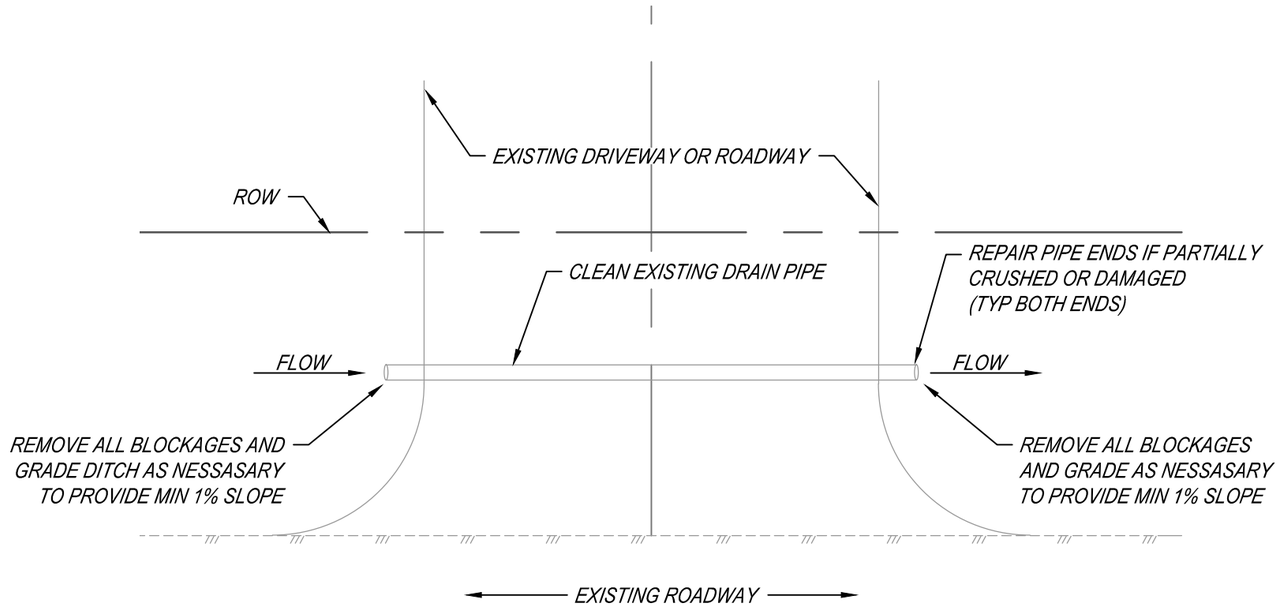
DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.

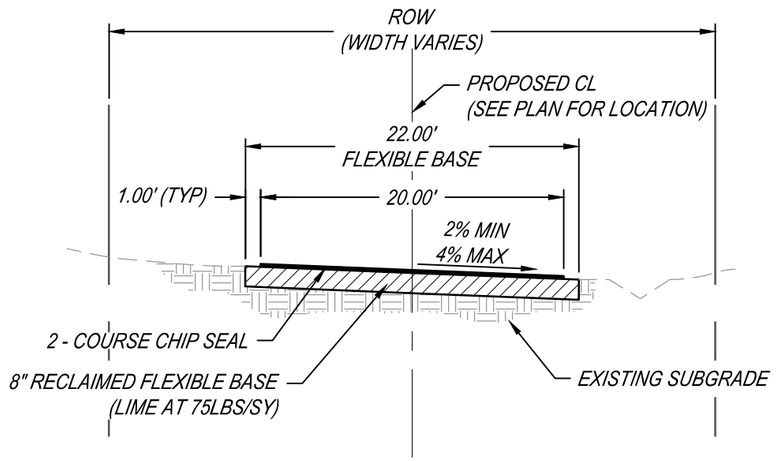
C4.15



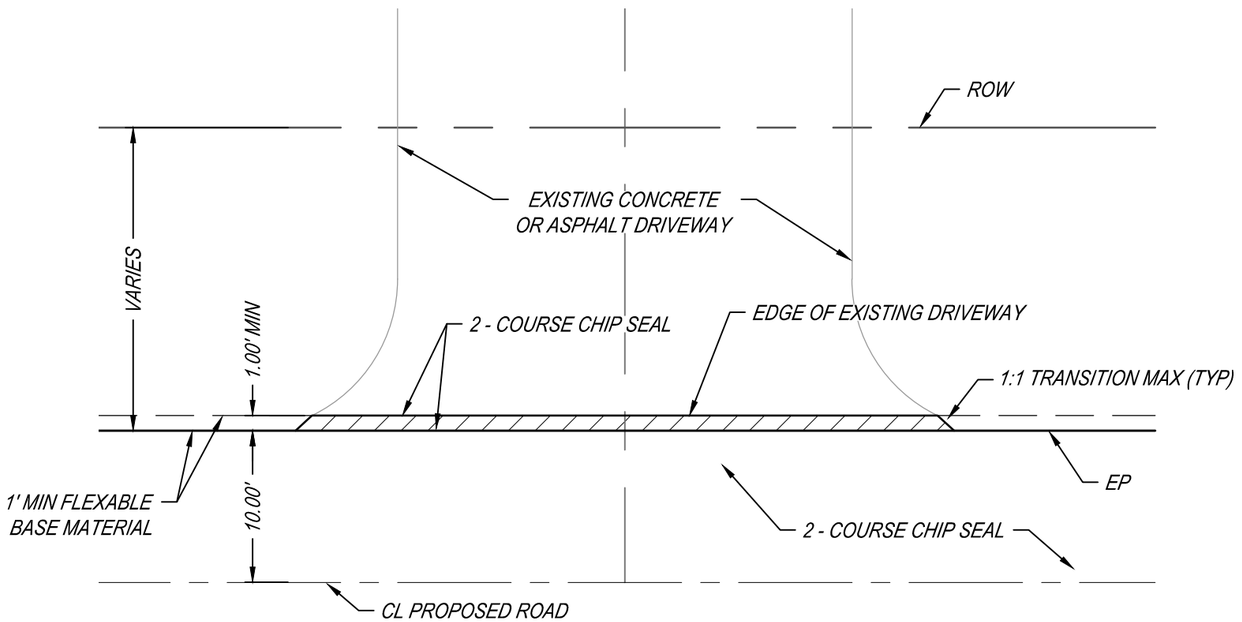
1 / - TYPICAL SECTION - FULL DEPTH RECLAMATION
SANTA CLARA LOOP AND WETZ ROAD
SCALE H: 1" = 10' V: 1" = 2'



3 / - TYPICAL CLEANING AND REPAIR FOR EXISTING CULVERTS
SCALE 1" = 10'



2 / - TYPICAL SECTION - FULL DEPTH RECLAMATION
WETZ ROAD (SHEETS C4.10 & C4.11 ONLY)
SCALE H: 1" = 10' V: 1" = 2'



4 / - TYPICAL ASPHALT OR CONCRETE DRIVEWAY PAVING CONNECTION
SCALE 1" = 10'

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0239
TBPE FIRM # 21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
TYPICAL SECTIONS AND DETAILS

DRAFTED BY:	TB
DESIGNED BY:	TT
CHECKED BY:	TT

SHEET NO.
C7.1

DATE:
FILE:

11/8/2022 11:01 AM - ALEKSKAR MILARREAL
Z:\ENG - PRO\143 - City of Santa Clara\102 - RFP 21-001 - 2021 Road and Drainage Projects\TEG Construction Documents_CAD\Sheet\C7.0 Details.dwg

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

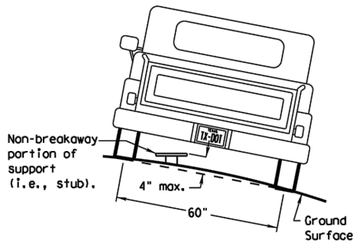
Post Type
- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

Anchor Type
- UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
- UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
- WS = Wedge Anchor Steel - (see SMD(TWT))
- WP = Wedge Anchor Plastic (see SMD(TWT))
- SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
- SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation
- P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
- T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
- U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
- IF REQUIRED
- 1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
- BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

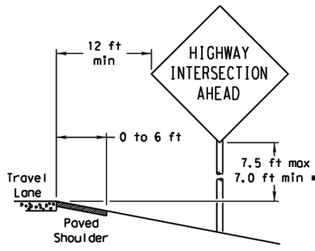
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

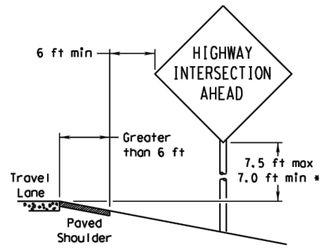
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

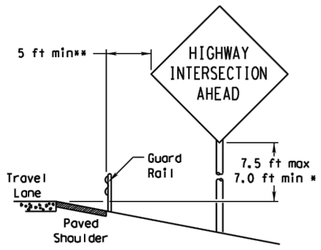
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



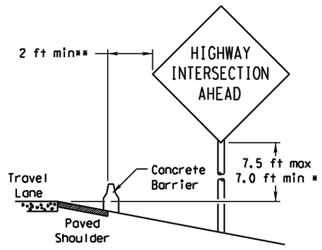
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

BEHIND BARRIER



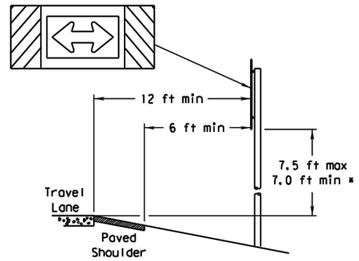
BEHIND GUARDRAIL



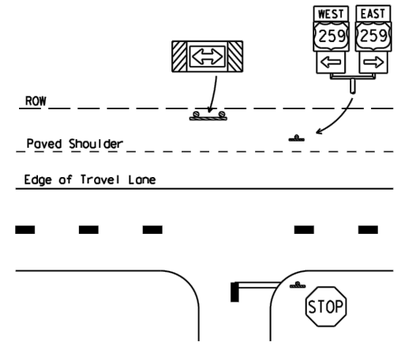
BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

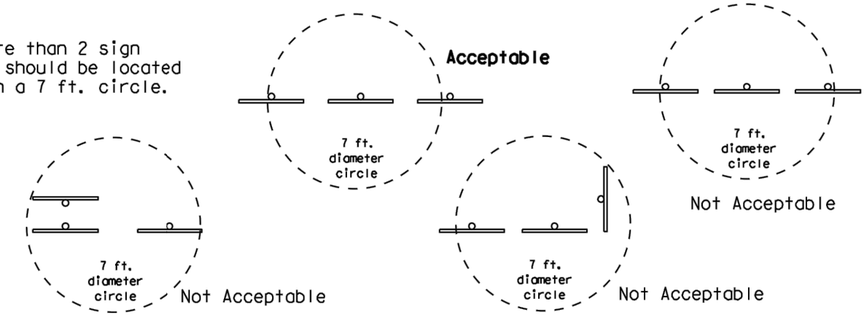
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

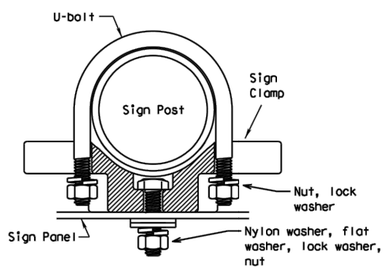
The website address is:
http://www.txdot.gov/publications/traffic.htm

No more than 2 sign posts should be located within a 7 ft. circle.



TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

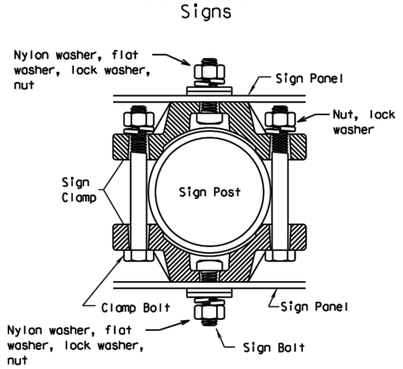


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

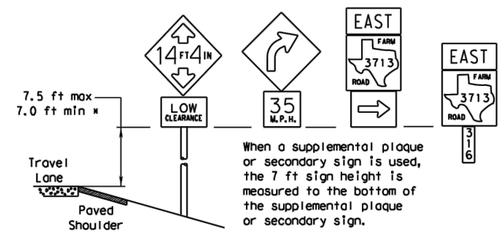
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



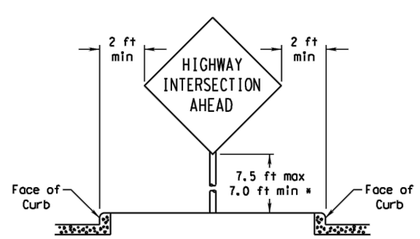
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



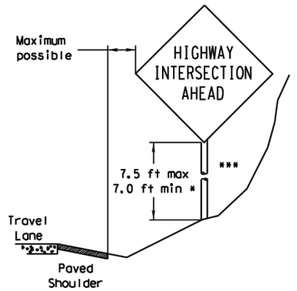
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

9-08 REVISIONS

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.

26A

5 - SIGN MOUNTING DETAIL
NOT TO SCALE

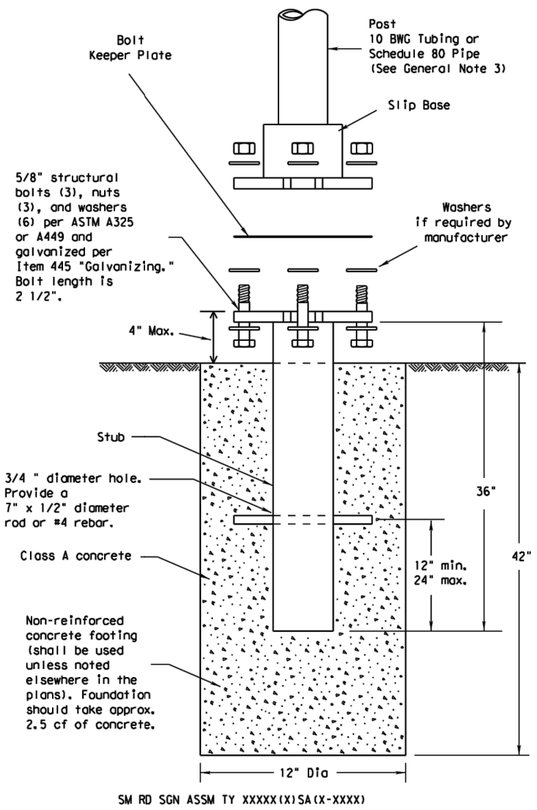
Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0339
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
SIGN MOUNTING DETAIL

DRAFTED BY: TB
DESIGNED BY: TT
CHECKED BY: TT

SHEET NO.
C7.2

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

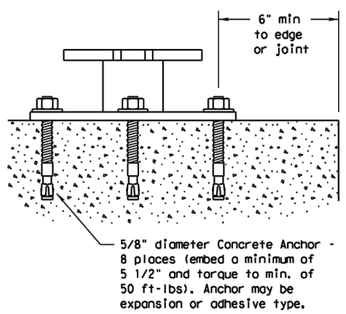
1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   0.134" nominal wall thickness
   Seamless or electric-resistance welded steel tubing or pipe
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   20% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
   Schedule 80 Pipe (2.875" outside diameter)
   0.276" nominal wall thickness
   Steel tubing per ASTM A500 Gr C
   Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
   46,000 PSI minimum yield strength
   62,000 PSI minimum tensile strength
   21% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

5 / - SIGN MOUNTING DETAIL
NOT TO SCALE

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-1)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

9-08 REVISIONS

CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.

26B

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0329
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
SIGN MOUNTING DETAIL

DRAFTED BY: TB
DESIGNED BY: TT
CHECKED BY: TT

SHEET NO.
C7.3

DATE:
FILE:

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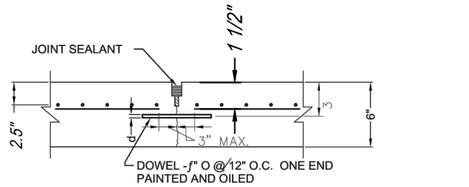
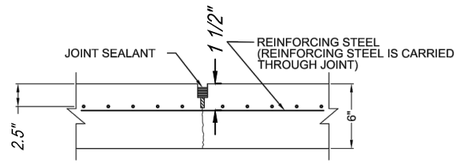


TRANSVERSE



LONGITUDINAL

CONTRACTION JOINT

(REINFORCED PAVEMENT)
N.T.S.

7 / - **CONCRETE JOINT DETAILS**
NOT TO SCALE

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172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0329
TBPE FIRM # 21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
CONCRETE JOINT DETAILS

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CHECKED BY:	TT

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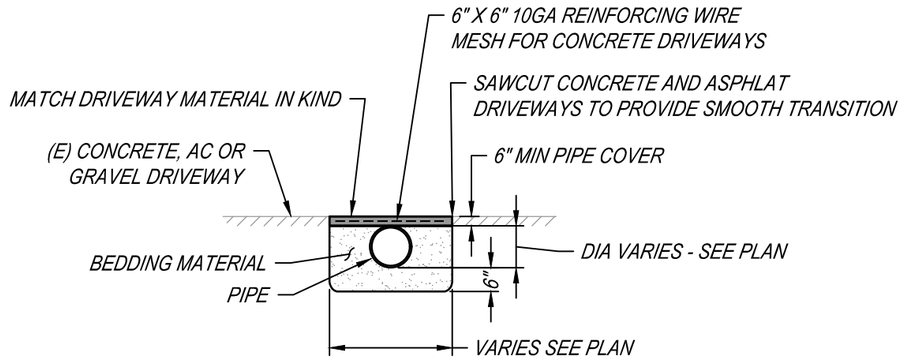
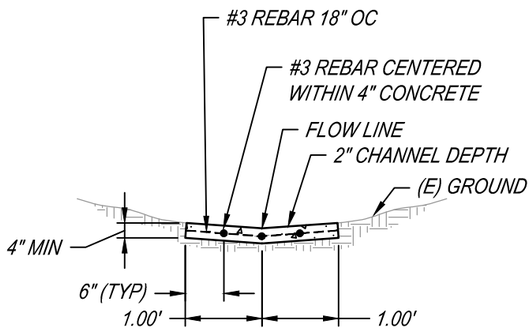
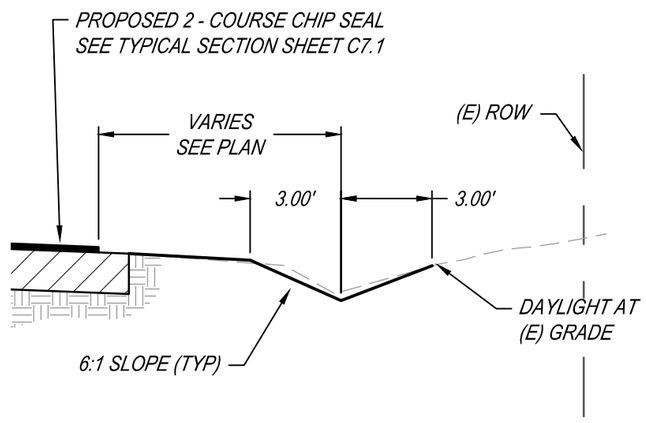


8 / - TYPICAL CULVERT TRENCH
NOT TO SCALE



9 / - CONCRETE PILOT CHANNEL
NOT TO SCALE



10 / - TYPICAL DITCH SECTION
SCALE: 1" = 5'

Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0329
TBPE FIRM # 21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
TYPICAL DRAINAGE DETAILS

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CHECKED BY:	TT

SHEET NO.
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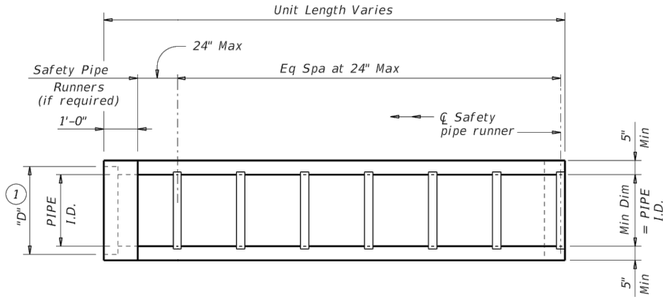
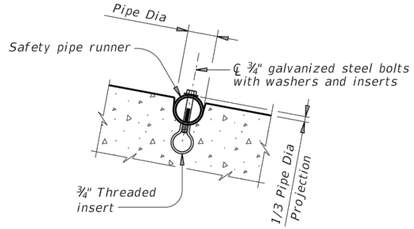


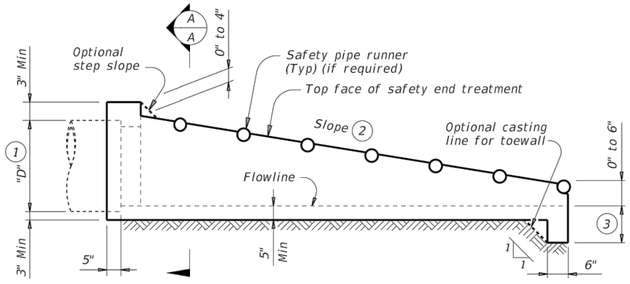
PLAN

(Showing bell end connection)



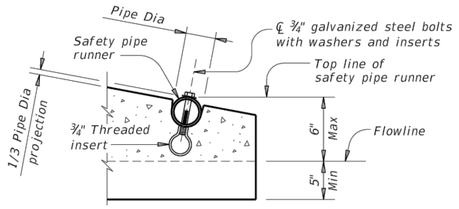
INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)



LONGITUDINAL ELEVATION

(Showing bell end connection)



OPTION A

OPTION B

END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

(If required)

PIPE I.D.	RCP WALL "B" THICKNESS	TP WALL THICKNESS (7)	"D" (1)	MAXIMUM SLOPE	MINIMUM LENGTH OF UNIT	PIPE RUNNERS REQUIRED		REQUIRED PIPE RUNNER SIZES		
						SINGLE PIPE	MULTIPLE PIPE	NOMINAL DIA.	O.D.	I.D.
12"	2"	1.15"	17"	6:1	4'-9"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
15"	2.25"	1.30"	20.50"	6:1	6'-5"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
18"	2.50"	1.60"	24"	6:1	8'-0"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
24"	3"	1.95"	31"	6:1	11'-3"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
30"	3.50"	2.65"	38.50"	6:1	14'-8"	No	Yes	4" STD	4.500"	4.026"
36"	4"	2.75"	45.50"	6:1	17'-11"	Yes	Yes	4" STD	4.500"	4.026"
42"	4.50"	N/A	52.50"	6:1	21'-2"	Yes	Yes	4" STD	4.500"	4.026"

(1) Dimension "D" is based on Reinforced Concrete Pipe (RCP) meeting the requirements of ASTM C-76, Class III, (RCP Wall "B" thickness). Adjust "D" for any other wall thickness used. For Thermoplastic Pipe (TP) take into account the annular space requirements for grouted connections.

(2) Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.

(3) Toewall to be used only when dimension is shown elsewhere in the plans.

(4) Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item "Safety End Treatment".

(5) Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

(6) Provide cement stabilized bedding and backfill in accordance with the Item, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item "Safety End Treatment". When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.

(7) Thermoplastic pipe wall thickness may vary. Adjust accordingly. Thermoplastic pipe requires the safety end treatments to have a bell end for grouted connections.

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe (RCP), and thermoplastic pipe (TP) may be used for TYPE II end treatment as specified in Item "Safety End Treatment".

When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Manufacture this product in accordance with Item "Safety End Treatment" except as noted below :

A. Provide minimum reinforcing of #4 at 6" (Grade 40) or #4 at 9" (Grade 60) each way or 6"x6" - D12 x D12 or 5"x5" - D10 x D10 welded wire reinforcement (WWR).
B. For precast (steel formed) sections, provide Class "C" concrete (f'c = 3,600 psi).

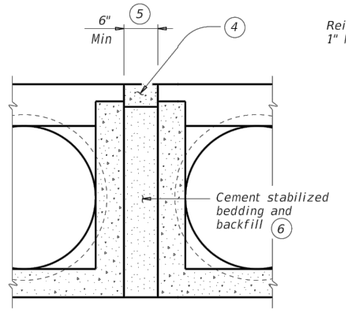
At the option and expense of the Contractor the next larger size of safety end treatment may be furnished; as long as the "D" dimension cast is that of the required size of pipe.

Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

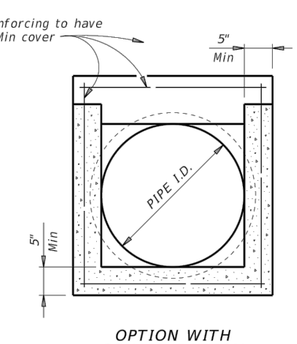
Provide pipe runners meeting the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

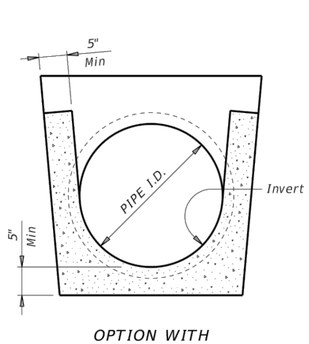
Connect RCP using the Optional Joint for RCP detail shown or in accordance with Item 464 "Reinforced Concrete Pipe". Connect TP by grouting. See PBGC standard for grouted connections with TP and precast safety end treatment.



MULTIPLE PIPE INSTALLATION

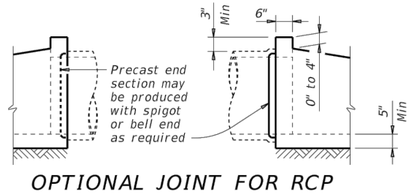


OPTION WITH SQUARE BOTTOM



OPTION WITH INVERT BOTTOM

SECTION A-A



OPTIONAL JOINT FOR RCP

(Showing joint between RCP and precast safety end treatment)

Texas Department of Transportation — Bridge Division Standard

PRECAST SAFETY END TREATMENT

TYPE II ~ PARALLEL DRAINAGE

PSET-SP

FILE: psetspss-18.dgn	DN: RLW	CK: KLR	DW: JTR	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-10: Add note for synthetic fibers. 09-18: Added Thermoplastic Pipe in table.	DIST	COUNTY		SHEET NO.

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

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172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0329
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WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
SAFTY END TREATMENT DETAILS

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TB	TT	TT

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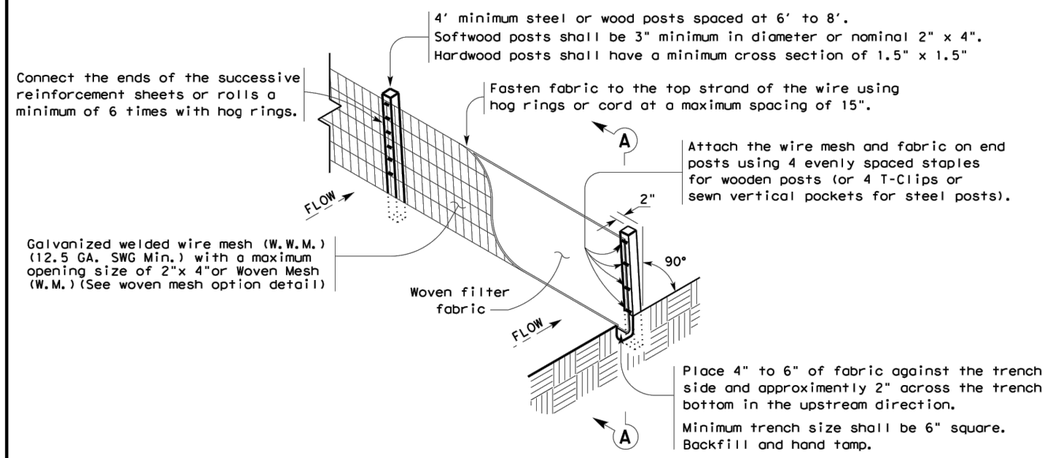
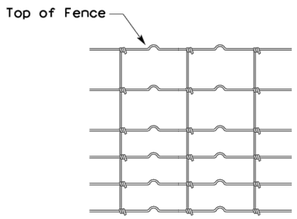
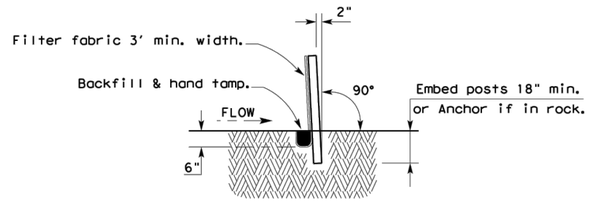


TEMPORARY SEDIMENT CONTROL FENCE

SCF





SECTION A-A

HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

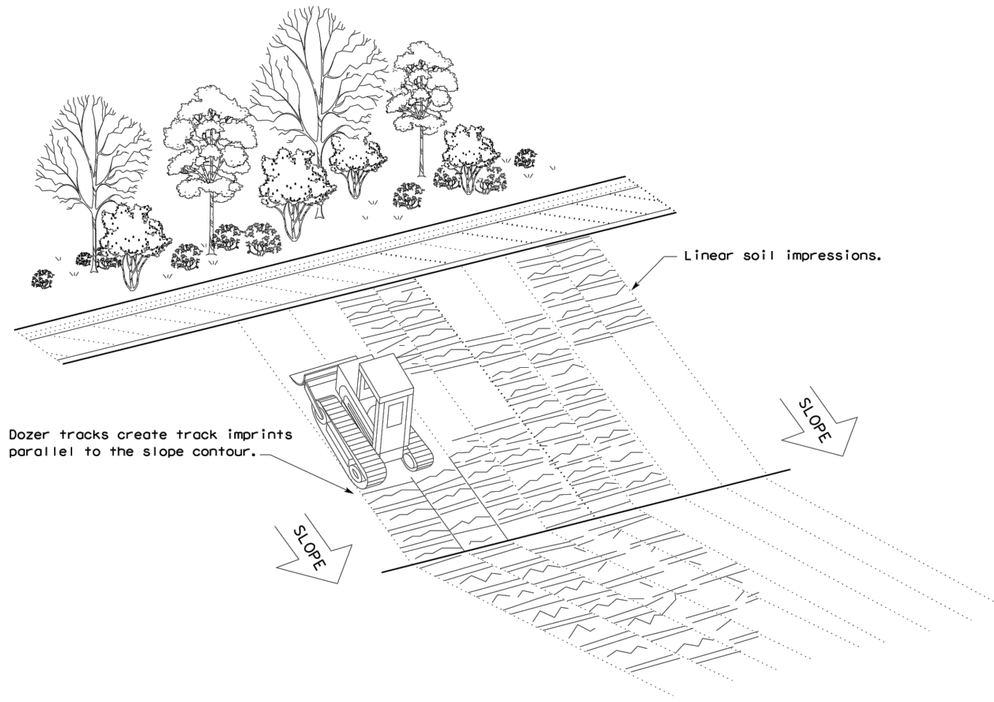
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

Texas Department of Transportation — Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
FENCE & VERTICAL TRACKING
EC(1)-16

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Freeland Turk ENGINEERING GROUP
172 CREEKSIDE PARK, STE 115
SPRING BRANCH, TX 78070
(830) 438-0329
TBPE FIRM F-21047

WETZ ROAD AND SANTA CLARA LOOP
ROAD AND DRAINAGE IMPROVEMENTS
EROSION CONTROL DETAILS

DRAFTED BY: TB
DESIGNED BY: TT
CHECKED BY: TT

SHEET NO.
C7.7

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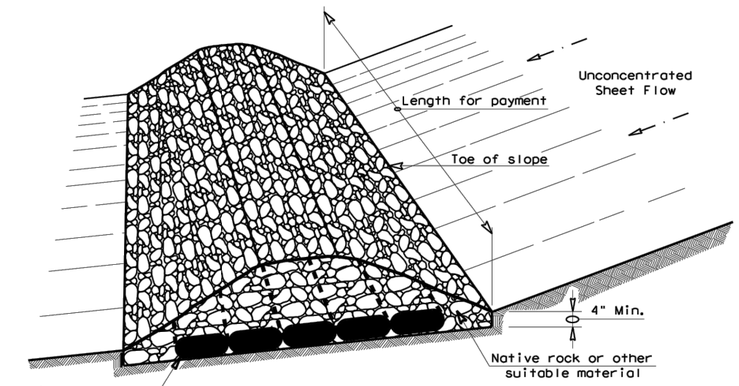
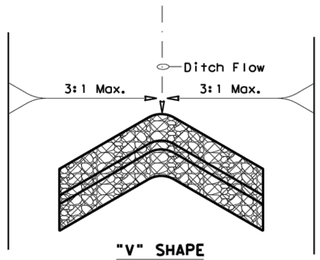
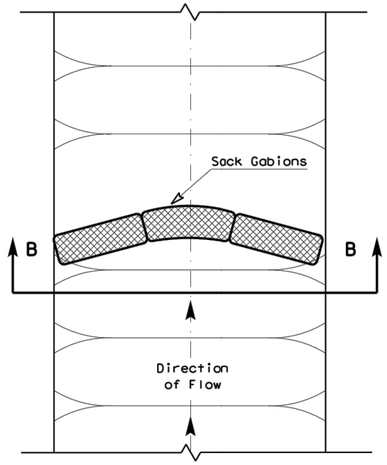


FILTER DAM AT TOE OF SLOPE

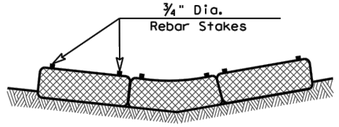
RFD1



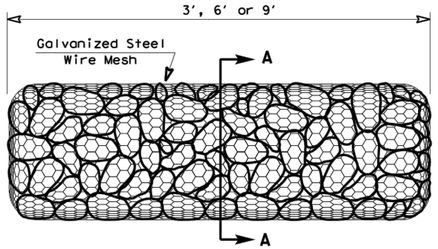
"V" SHAPE
PLAN VIEW



PLAN VIEW

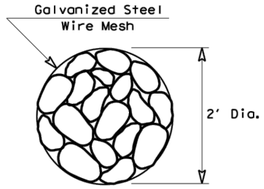


SECTION B-B

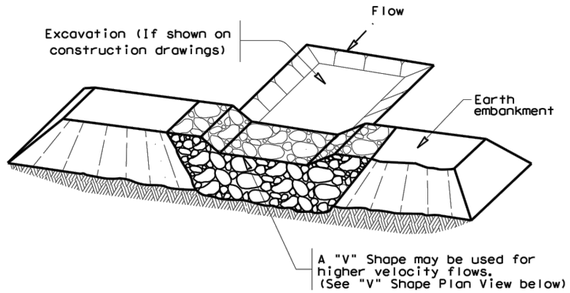


TYPE 4 (SACK GABIONS)

RFD4

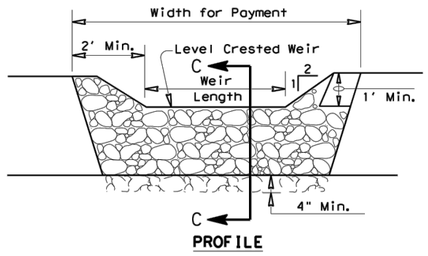


SECTION A-A

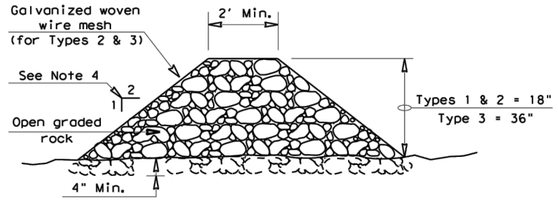


FILTER DAM AT SEDIMENT TRAP

RFD1 OR RFD2



PROFILE



SECTION C-C

ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT^2 of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

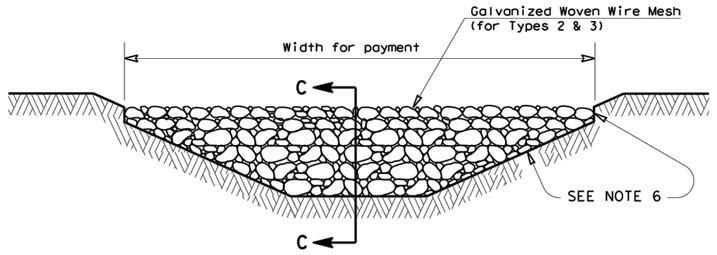
Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximently 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.



FILTER DAM AT CHANNEL SECTIONS

RFD1 OR RFD2 OR RFD3

GENERAL NOTES

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with ¾" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 ½" x 3 ¼"
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

Type 1 Rock Filter Dam	RFD1
Type 2 Rock Filter Dam	RFD2
Type 3 Rock Filter Dam	RFD3
Type 4 Rock Filter Dam	RFD4

Texas Department of Transportation — Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

ROCK FILTER DAMS

EC(2)-16

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